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# SSC CHSL 2023

**From 12th Pass to Govt. Job**

## INCLUDES

- Vacancy Trend
- Eligibility
- Cut Off Analysis
- Subject wise Trend
- Exam Pattern | Syllabus
- Previous Year Papers

## SSC CHSL Tier-1 Notification PDF

### SSC CHSL Vacancy Trend

Check out the SSC CHSL Vacancy released over the years. We are providing the past 5 years' final vacancy trend.

Year	No. of Vacancies
2022	4500
2021	6013
2020	4726
2019	4684
2018	5649

### SSC CHSL Cut Off Tier 1 Trend

In the following table, cut off the trend of SSC CHSL Tier 1 for the last 5 years is given.

Year-->	2020	2019	2018	2017	2016
Categories	SSC CHSL Tier-I	SSC CHSL Tier-I	SSC CHSL Tier-I	SSC CHSL Tier-I	SSC CHSL Tier-I
UR	141.88710	159.52440	135.60	143.5	127.50
SC	114.16235	136.10355	110.09	122.5	108.00
ST	108.88518	127.32836	99.09	112	99.00
OBC	139.42190	156.10198	133.74	139	120.00
Ex. S	72.06370	87.32036	56.11	83	64.50
OH	106.37481	124.36599	102.75	111.5	97.50
HH	63.80870	81.08020	58.43	73.5	65.00
VH	93.81684	123.78857	84.87	95.5	96.00

### SSC CHSL Exam Pattern for Tier 1

Section	SSC CHSL Subject	No of Questions	Max Marks	Exam Duration
1.	General Intelligence and Reasoning	25	50	60 minutes
2.	General Awareness	25	50	
3.	Quantitative Aptitude	25	50	
4.	English Comprehension	25	50	
	<b>Total</b>	<b>100</b>	<b>200</b>	

There is a negative marking in SSC CHSL Tier 1 Exam. Giving a wrong answer to a question will lead to a penalty of 0.5 marks in all sections

The exam duration is 80 minutes for candidates who are visually handicapped.

### SSC CHSL Syllabus 2023 for Tier 1

#### General Awareness

- History
- Polity
- Geography
- Economics
- Static Awareness
- Biology
- Chemistry
- Physics
- Computer
- Current Affairs

#### General Intelligence and Reasoning

- Fill in the Blanks
- Sentence Improvement
- Error Detection
- Sentence Rearrangement
- Idioms and Phrases
- Synonyms Antonyms
- Active Passive
- Direct Indirect
- Phrase Substitution
- Spelling Correction
- Cloze Test Passage

#### Quantitative Aptitude

- Percentage
- Average
- Number System
- Simplification
- Time & Work
- Speed & Distance [Train]
- S.I. & C.I.
- Profit & Loss
- Algebra
- Geometry
- Mensuration
- Trigonometry
- DI [Bar Graph]

## English Comprehension

- Fill in the Blanks
- Sentence Improvement
- Error Detection
- Sentence Rearrangement
- Idioms and Phrases
- Synonyms Antonyms
- Active Passive
- Direct Indirect
- Phrase Substitution
- Spelling Correction
- Cloze Test Passage

## SSC CHSL Eligibility Criteria

### SSC CHSL Eligibility Criteria: SSC CHSL Age Limit

Minimum Age: 18 years

Maximum Age: 27 years

### Age Relaxation

Category	Age Relaxation
SC/ST	5 years
OBC	3 years
PwBD (Unreserved)	10 years
PwBD (OBC)	13 years
PwBD (SC/ST)	15 years
Ex-servicemen	03 years after deduction of the military service rendered from the actual age as on closing date of receipt of online application.

## SSC CHSL Eligibility Criteria: SSC CHSL Educational Qualification

Candidates must have passed 12th Standard or equivalent examination from a recognized Board or University.

### SSC CHSL Salary 2023: Salary Structure Post Wise

S.No	Post	Pay Level	Grade Pay	Pay Scale
1	Lower Division Clerk (LDC)/ Junior Secretariat Assistant (JSA)	Pay Level-2	1900	Rs. 19,900 - 63,200
2	Data Entry Operator (DEO)	Pay Level-4	2400	Rs. 25,500 - 81,100
3	Data Entry Operator, Grade "A"	Pay Level-4	2400	Rs. 25,500 - 81,100

## SSC CHSL Subject Wise Exam Analysis

### Trend of English:

SSC CHSL 2021 Tier - 1 (All 42 Shifts) =  $42 \times 25 = 1050$

### Questions

Topic Name	Total Questions	Questions per shift
One word substitution	68	1.62
Spellings	$3 + 4 + 13 + 97 = 117$	2.79
Synonyms	$8 + 4 + 82 = 94$	2.24
Antonyms	83	1.98
Idioms	111	2.64
Error Detection	46	1.10
Error Correction	$104 + 14 = 118$	2.81
Fill in the Blanks (Multiple + single)	$10 + 83 = 93$	2.21
Close Test	210	5.00
Active Passive Voice	76	1.81
Narration (Direct-Indirect)	6	0.14
Jumbled Sentence	41	0.98

### Trend of General Awareness:

SSC CHSL 2021 Tier - 1 (All 42 Shifts) =  $42 \times 25 = 1050$

### Questions

Subject	Total Questions	Average Questions in the Shift
Biology	90	2.14
Chemistry	70	1.67
Physics	33	0.79
Economics	38	0.90
Geography	83	1.98
History	56	1.33
Polity	66	1.57
Static GK	146	3.48
Music and dance forms	157	3.74
Current Affairs	188	4.48
Books and Authors	123	2.93

**Trend of Mathematics****SSC CHSL 2021 Tier – 1 (All 42 Shifts) = 1050 Questions**

Chapter Name	Total Questions	Questions per Shift
Percentage	96	2.29
Ratio	40	0.95
Mixture	14	0.33
Average	71	1.69
Profit and Loss	127	3.02
Compound Interest	44	1.05
Time & work	40	0.95
Time, Speed & Distance	70	1.67
Simplification	65	1.55
Number system	53	1.26
Algebra	93	2.21
Trigonometry	42	1.00
Height and Distance	2	0.05
Geometry	65	1.55
Mensuration	102	2.43
Co-ordinate Geometry	2	0.05
Data Interpretation	126	3.00

**Trend of Reasoning:****SSC CHSL 2021 Tier – 1 (All 42 Shifts) = 1050 Questions**

Topic Name	Number of Questions	Questions per shift
1. Blood Relation	16	0.38
2. Calendar	34	0.81
3. Coding – Decoding	103	2.45
4. Alphabet Series	26	0.62
5. Missing Term	159	3.79
6. Missing term (Matrix)	40	0.95
7. Number Analogy-1	109	2.60
8. Number Analogy-2	27	0.64
9. Number series (find same relationship)	18	0.43
10. Word Analogy	64	1.52
11. Signs	121	2.88
12. Order and ranking	14	0.33
13. Syllogism	31	0.74
14. Meaningful order	3	0.07
15. Dictionary	31	0.74
16. Classification and Venn Diagram	11	0.26
17. Figure counting	28	0.67
18. Dice	47	1.12
19. Embedded Figure	23	0.55
20. Figure Analogy	16	0.38
21. Paper Cutting and folding	48	1.14
22. Mirror Image	87	2.07

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# SSC CHSL Tier-1 Previous Year Papers

## SSC CHSL Previous Year Paper 25-05-2022 (Shift-2)

Q1. Select the INCORRECTLY spelt word.

- (a) Informassional
- (b) Personnel
- (c) Informal
- (d) Personal

Q2. Select the most appropriate option to substitute the highlighted segment in the given sentence.

My sincerity and patience **drove me** through all odds and problems of life.

- (a) carried me
- (b) flew me
- (c) ran me
- (d) lifted me

Q3. Select the most appropriate meaning of the idiom given in bold in the following sentence.

She was within **a hair's breadth** of winning.

- (a) certain
- (b) desirous
- (c) narrow margin
- (d) accomplished

Q4. Select the most appropriate option that can substitute the highlighted words in the given sentence.

He is **an excessively enthusiastic and strict follower** of Judaism.

- (a) a janissary
- (b) a Zionist
- (c) a zealot
- (d) a healer

Q5. Select the INCORRECTLY spelt word.

- (a) Enthusiasm
- (b) Accomplishment
- (c) Convenience
- (d) Auxiliary

Q6. Select the most appropriate option that can substitute the highlighted part in the given sentence.

Her writing is very **illegible** and so she loses marks in her exam.

- (a) illeggible
- (b) illegibel
- (c) illegible
- (d) illegal

Q7. Select the most appropriate option that can substitute the highlighted segment in the given sentence. If there is no need to substitute it, select 'No substitution required'.

My uncle **is doing** business in Hyderabad for the last 10 years.

- (a) has been doing
- (b) No substitution required
- (c) did
- (d) doing

Q8. Complete the sentence with an appropriate synonym of the word mentioned in the bracket.

The party was so amazing that everyone \_\_\_\_\_ (hated) leaving it.

- (a) loathed
- (b) enhanced
- (c) revered
- (d) embraced

Q9. Select the most appropriate synonym of the word given in the brackets to fill in the blank.

Doing adventure sports is banned for athletes as it can be \_\_\_\_\_ (perilous).

- (a) reliable
- (b) worthless
- (c) adventurous
- (d) treacherous

Q10. Select the option that expresses the given sentence in active voice.

The library building was renovated in 2020.

- (a) They were renovating the building in 2020.
- (b) They had renovated the library building in 2020.
- (c) They renovated the library building in 2020.
- (d) They did renovating the building in 2020.

Q11. Select the option that expresses the given sentence in active voice.

Has the assignment been uploaded by you?

- (a) Have you been uploaded the assignment?
- (b) Have you uploaded the assignment?
- (c) Did you upload the assignment?
- (d) Were you uploading the assignment?

**Q12.** Select the option that expresses the given sentence in active voice.

Coffee is sipped by me.

- (a) I have sipped coffee.
- (b) I sip coffee.
- (c) I have had sipped coffee.
- (d) I am sipping coffee.

**Q13.** Select the INCORRECTLY spelt word.

- (a) Occurrence
- (b) Accommodation
- (c) Priviledge
- (d) Erroneous

**Q14.** Select the most appropriate ANTONYM of the highlighted word.

His **liberal** policies were responsible for progress in the community.

- (a) ineffectual
- (b) conservative
- (c) central
- (d) hysterical

**Q15.** In the following passage, two words have been deleted. Read the passage carefully and select the most appropriate option to fill in the blank.

Manpower exporters and overseas recruiters commonly \_\_\_\_\_ in illegal business practices for short-term \_\_\_\_\_ gain.

- (a) honoured, professional
- (b) indulged, monetary
- (c) regulated, personal
- (d) thrived, devotional

**Q16.** Select the most appropriate meaning of the given idiom.

Grease someone's palm

- (a) Go to battle
- (b) Put in hard work
- (c) Bribe someone
- (d) Be jealous of someone

**Q17.** Select the INCORRECTLY spelt word.

- (a) Consciousness
- (b) Encyclopaedia
- (c) Euphemism
- (d) Embbarrassment

**Q18.** Select the option that will improve the highlighted part of the given sentence.

She is **educated** than her sister.

- (a) far educated
- (b) more educated
- (c) best educated
- (d) good educated

**Q19.** Sentences of a paragraph are given below in jumbled order. Arrange the sentences in the correct order to form a meaningful and coherent paragraph.

A. I went to college from the eleventh grade and never went to the twelfth grade, and skipped another grade earlier, so I was a pretty young fellow at Morehouse.

B. At the age of fifteen, I entered Morehouse College and my father and my maternal grandfather had also attended, so Morehouse has had three generations of Kings.

C. The professors were not caught up in the clutches of state funds and could teach what they wanted with academic freedom and encouraged us in a positive quest for a solution to racial ills.

D. I shall never forget the hardships that I had upon entering college, for though I had been one of the top students in high school, I was still reading at only an eighth-grade level.

- (a) BDAC
- (b) ABDC
- (c) ADBC
- (d) BADC

**Q20.** Select the option that will improve the underlined part of the given sentence.

I keep telling myself **how I am lucky to have** such wonderful sisters.

- (a) how lucky I am to have
- (b) how lucky I am to having
- (c) how I am lucky for
- (d) how I am lucky for having

**Directions (21-25):** In the following passage, some words have been deleted. Read the passage carefully and select the most appropriate option to fill in each blank.

Yoga is a personal journey for everyone as now most people are turning to it, not for fitness **(1)** \_\_\_\_\_, but for the union of both, body and soul. Yoga is an ancient practice that **(2)** \_\_\_\_\_ in India. It involves movement, meditation and breathing **(3)** \_\_\_\_\_ to promote mental and physical well-being. There are many styles of yoga. A person should **(4)** \_\_\_\_\_ a style based on their goals and fitness level. If yoga and pranayam are complemented with other forms of spiritual practice to purify the mental body and other bodies, then a person can achieve rapid spiritual progress in his lifetime. Thus, a person can make progress to achieve the purpose of life which is to **(5)** \_\_\_\_\_ with God.



**Q21.** Select the most appropriate option to fill in blank number 1.

- (a) rather
- (b) change
- (c) apart
- (d) alone

**Q22.** Select the most appropriate option to fill in blank number 2.

- (a) settled
- (b) came
- (c) originated
- (d) involved

**Q23.** Select the most appropriate option to fill in blank number 3.

- (a) senses
- (b) techniques
- (c) phases
- (d) pursuit

**Q24.** Select the most appropriate option to fill in blank number 4.

- (a) choose
- (b) familiarize
- (c) make
- (d) strike

**Q25.** Select the most appropriate option to fill in blank number 5.

- (a) compete
- (b) progress
- (c) merge
- (d) mark

**Q26.** Select the correct combination of mathematical signs to replace the \* signs and to balance the given equation.

$$41*2*36*6*57*7*4*3$$

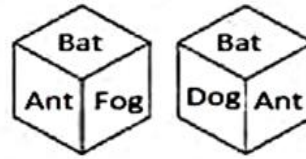
- (a) +, -, =, x, -, ÷, -
- (b) -, =, +, x, -, +, x
- (c) x, +, ÷, -, =, x, +
- (d) -, +, x, -, =, +, x

**Q27.** Select the correct combination of mathematical signs to replace the \* signs and to balance the given equation.

$$78*3*14*80*2$$

- (a) +, ÷, =, x
- (b) +, x, =, ÷
- (c) ÷, +, =, ÷
- (d) -, =, +, x

**Q28.** The different positions of the same dice are shown, the six faces of which are marked as Ant, Bat, Cat, Dog, Egg, Fog, select the word that will be on the face opposite to the one showing 'Dog'.



- (a) Fog
- (b) Cat
- (c) Bat
- (d) Egg

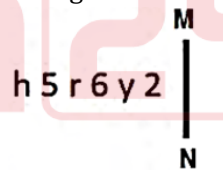
**Q29.** Pointing to a lady in a photograph, Vijay said, "Her sister's mother is the sister of my father's daughter." How is the lady related to Vijay?

- (a) Mother
- (b) Sister's daughter
- (c) Daughter
- (d) Sister

**Q30.** Which of the following numbers will replace the question mark (?) in the given series? 28, 40, 25, ?, 22, 46

- (a) 41
- (b) 43
- (c) 44
- (d) 42

**Q31.** Select the correct mirror image of the given combination when the mirror is placed at MN as shown in the figure.



- (a) S y 9 r 2 d
- (b) S y 0 r 2 d
- (c) S y 0 r 2 d
- (d) S y 9 r 2 d

**Q32.** Select the correct combination of mathematical signs to sequentially replace the \* signs and to balance the given equation.

$$25*5*10*2*8*11$$

- (a) ÷, x, +, -, =
- (b) x, ÷, -, +, =
- (c) -, +, ÷, x, =
- (d) ÷, -, +, x, =

**Q33.** If 3 March 2020 was Tuesday, then what was the day of the week on 3 February 2019?

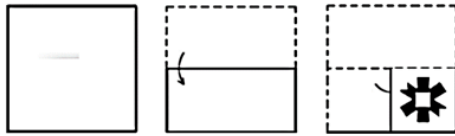
- (a) Wednesday
- (b) Friday
- (c) Sunday
- (d) Monday

**Q34.** Which letter cluster will replace the question mark (?) to complete the given series?

ETRE, AZJG, WFBI, SLTK, ?

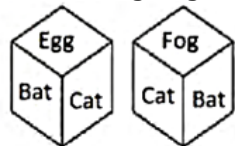
- (a) OPLM
- (b) ORLM
- (c) ORMM
- (d) OPMM

**Q35.** A paper is folded and cut as shown below. How will it appear when unfolded?



- (a)
- (b)
- (c)
- (d)

**Q36.** Two different positions of the same dice are shown, the six faces of which are marked as Ant, Bat, Cat, Dog, Egg, Fog. Select the word that will be on the face opposite to the one showing 'Fog'.



- (a) Ant
- (b) Dog
- (c) Bat
- (d) Egg

**Q37.** In a certain code language, 'HISTORY' is written as 'SRHGLIB' and 'RECORD' is written as 'IVXLIW'. How will 'ARCHIVE' be written in that language?

- (a) ZIXSGEV
- (b) ZIXTREV
- (c) ZIXSREV
- (d) AIXSREV

**Q38.** Which of the following letter-clusters will replace the question mark (?) in the given series to make it logically complete?

WUT, RPO, MKJ, HFE, ?

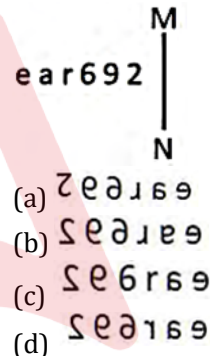
- (a) CAZ
- (b) ACZ
- (c) CZA
- (d) AZC

**Q39.** Which of the following numbers will replace the question mark (?) in the given number series?

56, 68, ?, 128, 176, 236

- (a) 80
- (b) 116
- (c) 74
- (d) 92

**Q40.** Select the correct mirror image of the given combination when the mirror is placed at MN as shown.



**Q41.** Select the set in which the numbers are related in the same way as are the numbers of the following set.

(75, 25, 28)

(136, 34, 38)

(NOTE : Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding /deleting /multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is NOT allowed )

- (a) (27, 9, 15)
- (b) (45, 9, 12)
- (c) (55, 5, 11)
- (d) (105, 35, 38)

**Q42.** In a certain code language, 'CAPON' is written as 'EYRMP' and 'DECOY' is written as 'FCEMA'. How will 'POWER' be written in that language?

- (a) RQGDT
- (b) RMYCT
- (c) RMWDT
- (d) RNVDV



**Q43.** Select the correct combination of mathematical signs to replace the \* signs and to balance the given equation.

$$96 * 6 * 24 * 49 * 25$$

- (a) +, ×, =, ÷
- (b) ÷, -, =, +
- (c) -, +, ×, =
- (d) ×, ÷, =, -

**Q44.** Select the correct combination of mathematical signs to sequentially replace the \* signs and to balance the given equation.

$$57 * 35 * 7 * 14 * 2 * 34$$

- (a) +, ÷, -, ×, =
- (b) ×, +, ÷, -, =
- (c) -, ÷, +, ×, =
- (d) +, -, ×, ÷, =

**Q45.** Study the given pattern carefully and select the number that can replace the question mark (?) in it.

First row- 6, 39, 124

Second row- 8, 53, ?

Third row- 11, 74, 229

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding /deleting /multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is NOT allowed).

- (a) 111
- (b) 161
- (c) 116
- (d) 166

**Q46.** Study the given pattern carefully and select the number that can replace the question mark (?) in it.

First row: 3, 2, 30

Second row: 7, 5, 175

Third row: 4, 6, ?

(NOTE: Operations should be performed on the whole numbers, without breaking down the number into its constituent digits. For example, 13 – Operations on 13 such as adding/deleting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

- (a) 125
- (b) 110
- (c) 120
- (d) 140

**Q47.** Select the option that is related to the fifth term in the same way as the second term is related to the first term and the fourth term is related to the third term.

DENIAL : IANDEL :: OBJECT : ECJOBOT :: FLAVOR : ?

- (a) VOAFLR
- (b) OVAFRL
- (c) VOAFLR
- (d) OVFARL

**Q48.** Select the option that is related to the fifth term in the same way as the second term is related to the first term and the fourth term is related to the third term.

YAR : RAY :: TCA : ACT :: TAB : ?

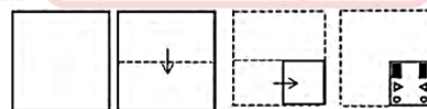
- (a) TBA
- (b) ABT
- (c) ATB
- (d) BAT

**Q49.** Select the Venn diagram that best illustrates the relationship between the following classes.

King, Father, Queen

- (a)
- (b)
- (c)
- (d)

**Q50.** A paper is folded and cut as shown. How will it appear when unfolded?



- (a)
- (b)
- (c)
- (d)

**Q51.** In Class 8 of a school, the ratio of students playing cricket to those playing football is 27 : 13, while the ratio of those playing football to those playing hockey is 26 : 14. If the total number of students in Class 8 is 470, and each student plays exactly one game, find the percentage of students of the class playing cricket. [Give your answer correct to two decimal places.

- (a) 55.47%
- (b) 54.75%
- (c) 57.45%
- (d) 56.35%

**Q52.** The table below provides information about the marks obtained by a group of students in a test.

Marks	No. of Students
Less than 10	2
Less than 20	5
Less than 30	6
Less than 40	8
Less than 50	10

How many students scored at least 30 marks but less than 40 marks in the test?

- (a) 8
- (b) 3
- (c) 1
- (d) 2

**Q53.** If  $\sec \theta - \cos \theta = 14$  and  $14\sec \theta = x$ , then the value of  $x$  is \_\_\_\_\_.

- (a)  $\tan^2 \theta$
- (b)  $\sec^2 \theta$
- (c)  $2\sec \theta$
- (d)  $2\tan \theta$

If  $x + \frac{1}{x} = -13$ , what is the value of  $x^4 + \frac{1}{x^4} = ?$

**Q54.**

- (a) 27887
- (b) 27891
- (c) 29243
- (d) 28561

**Q55.** If  $\left(x + \frac{1}{x}\right) = 7.5$ . what is the value of  $\left(x^2 + \frac{1}{x^2}\right) = ?$

- (a) 54.25
- (b) 52.25
- (c) 56.25
- (d) 58.25

**Q56.** The population of a city increases at the rate of 10% per annum. If the population of the city was 2 crore in 2018, then the population of the city in the year 2021 was:

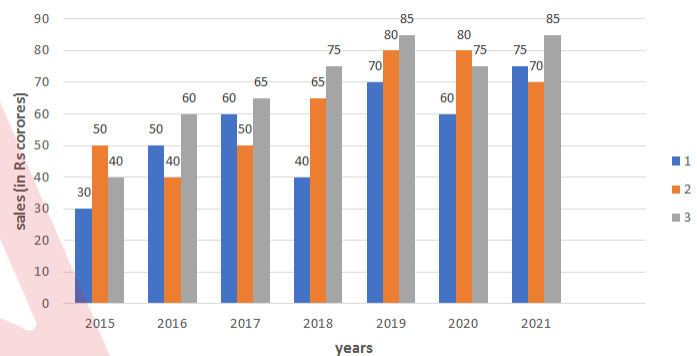
- (a) 2.3 crore
- (b) 2.6 crore
- (c) 2.662 crore
- (d) 2.42 crore

**Q57.** What will be a single equivalent discount for successive discounts of 20%, 40% and 75% on the marked price of an item?

- (a) 65%
- (b) 78%
- (c) 88%
- (d) 45%

**Q58.** Select the given graph carefully and answer the question that follows.

sales of 3 companies (1, 2, 3) over the years (in crores)



In which of the following years was the sales of company 1 exactly half of the total sales of company 2 and 3 together in that year?

- (a) 2019
- (b) 2021
- (c) 2016
- (d) 2020

**Q59.** In a company, there are only two types of employees, workers and officers. 35% of the employees are officers and the average monthly salary of an officer is ₹39,000 more than the combined average monthly salary of an employee. What is the difference between the average monthly salaries of an officer and a worker?

- (a) Rs. 52,650
- (b) Rs. 50,700
- (c) Rs. 64,350
- (d) Rs. 60,000

**Q60.**

Simplify  $\left[7\frac{1}{2} \div \left\{1\frac{1}{4} - \frac{1}{2} \left(2\frac{1}{2} - \frac{1}{4} - \frac{1}{6}\right)\right\}\right] \div \left(\frac{1}{2} \text{ of } 8\frac{1}{3}\right)$ .

- (a) 26
- (b) 36
- (c) 43.2
- (d) 23.6

**Q61.** If, in a family, consumption of sugar is 6 kg for 24 days, then what is the consumption of sugar for 18 days?

- (a) 3.75 kg
- (b) 4 kg
- (c) 3.6 kg
- (d) 4.5 kg

**Q62.** A pond is 50 m long, 35 m wide and 2.5 m deep. Find the capacity of the pond.

- (a)  $4165 \text{ m}^3$
- (b)  $4375 \text{ m}^3$
- (c)  $4065 \text{ m}^3$
- (d)  $3850 \text{ m}^3$

**Q63.** 16 men can paint 15 walls in 45 days. In how many days can 20 men paint 20 walls?

- (a) 40
- (b) 60
- (c) 48
- (d) 45

**Q64.** The cost price of an article is Rs.6,450. If it sold at a profit 16%, how much would be its selling price?

- (a) Rs.7,482
- (b) Rs.7,428
- (c) Rs.7,842
- (d) Rs.7,282

**Q65.** In a Panchayat election, three candidates were there in the fray. The losing candidates got an equal number of votes and the winning candidate got as many votes as the rest of the two got collectively. If the total votes polled were 1500, find the number of votes that the winning candidate got assume all votes polled were valid.

- (a) 750
- (b) 625
- (c) 575
- (d) 800

**Q66.** A shopkeeper wanted to sell ₹2,700 worth of products. But he had two options — giving two successive discounts of 10% and 15%, respectively, or giving a single discount of 25%. What was the difference between the two options?

- (a) ₹40.50
- (b) ₹42.75
- (c) ₹44.00
- (d) ₹47.50

**Q67.** On dividing 8675123 by a certain number, the quotient is 33611 and the remainder is 3485. The divisor is \_\_\_\_.

- (a) 538
- (b) 258
- (c) 248
- (d) 356

**Q68.** RA and RB are two tangents from a common point 'R' outside the circle with centre 'O', having a radius of 6 cm. If  $\angle ARB = 70^\circ$ , find the measure of the angle AOB.

- (a)  $130^\circ$
- (b)  $110^\circ$
- (c)  $120^\circ$
- (d)  $80^\circ$

**Q69.** The given table shows the consumption of grains (in kilograms) by a village per day over the given set of years. Study the table and answer the following question.

For which set of years (in options) is the combined consumption per day equal to that for the other set of years?

Years	Rice	Wheat	Maize	Barley
1998–2000	181	50	35	26
2003–2005	167	44	39	17
2008–2010	169	38	49	25
2013–2015	150	45	51	21
2018–2020	147	54	63	24

- (a) 1998–2000 and 2008–2010
- (b) 2008–2010 and 2013–2015
- (c) 2003–2005 and 2013–2015
- (d) 1998–2000 and 2003–2005

**Q70.** If the total surface area of a cube is  $96 \text{ cm}^2$ , then find the volume of the cube.

- (a)  $64 \text{ cm}^3$
- (b)  $82 \text{ cm}^3$
- (c)  $27 \text{ cm}^3$
- (d)  $74 \text{ cm}^3$

**Q71.** Find the surface area of a cuboid 17 m long, 8 m broad and 3 m high.

- (a)  $420 \text{ m}^2$
- (b)  $417 \text{ m}^2$
- (c)  $402 \text{ m}^2$
- (d)  $422 \text{ m}^2$

**Q72.** A worker's average income for a week is ₹180. He earned ₹115, ₹212, ₹170, ₹165, ₹185, and ₹225 from Monday to Saturday. Find his Sunday's income.

- (a) ₹191
- (b) ₹188
- (c) ₹195
- (d) ₹178

**Q73.** The time taken by a 180 m long train running at a speed of 54 km/h to cross a man standing on the platform is:

- (a) 10 seconds
- (b) 12 seconds
- (c) 11 seconds
- (d) 9 seconds

**Q74.** If 49 litres of a milk solution has 63% milk in it, then how much milk should be added to make the concentration of milk 70% in the solution?

- (a) 11 (13/30) litres
- (b) 14 (7/30) litres
- (c) 12 (11/30) litres
- (d) 13 (1/30) litres

**Q75.** If  $x + y + z = 0$ , then find the value of  $x^3 + y^3 + z^3 - 3xyz$ .

- (a) 1
- (b)  $x^3 + y^3 + z^3$
- (c)  $3xyz$
- (d) 0

**Q76.** Who among the following personalities has written the National Song 'Vande Mataram'?

- (a) Sarojini Naidu
- (b) Bankim Chandra Chattopadhyay
- (c) Rabindra Nath Tagore
- (d) Sri Aurobindo

**Q77.** Identify the element that helps to trap light energy that is essential for photosynthesis.

- (a) Cristae
- (b) Amyloplasts
- (c) Carotenoid
- (d) Vacuoles

**Q78.** Which of the following novels is NOT written by Amitav Ghosh?

- (a) The Circle of Reason
- (b) A Suitable Boy
- (c) Sea of Poppies
- (d) The Shadow Lines

**Q79.** The foreign exchange reserves in India crossed the landmark of \_\_\_\_\_ in June 2021.

- (a) US\$ 900 trillion
- (b) US\$ 600 trillion
- (c) US\$ 600 billion
- (d) US\$ 900 billion

**Q80.** Reni Village in Garhwal was known for what environmental movement in 1970?

- (a) Save Silent Valley Movement
- (b) Chipko Movement
- (c) Jungle Bachao Andolan
- (d) Appiko Movement

**Q81.** Who is the recipient of 2021 Abhinandan Saroja National Award?

- (a) Sujata Mohapatra
- (b) Gopika Varma
- (c) N Amusana Devi
- (d) Aparna Satheesan

**Q82.** Under the electron microscope, which cell organelle is visible as either clusters or single, small dots that float freely in the cytoplasm?

- (a) Golgi apparatus
- (b) Ribosomes
- (c) Vesicles
- (d) Peroxisomes

**Q83.** The equipment bolt is used in which sport?

- (a) Swimming
- (b) Mountaineering
- (c) Cycling
- (d) Motor sports

**Q84.** Who among the following is the first ever Grammy award winner from India?

- (a) Pt Hari Prasad Chaurasia
- (b) Pt Ravi Shankar
- (c) Ustad Zakir Husain
- (d) Pt Shiv Prakash Sharma

**Q85.** Among the following freedom fighters of India, whose autobiography is 'Why am I an Atheist'?

- (a) Ras Behari Bose
- (b) Bhagat Singh
- (c) Ram Prasad Bismil
- (d) Aurobindo Ghosh

**Q86.** Padma Shri awardee Guru Amubi Singh was conferred the award for his significant contributions in which of the following dance forms?

- (a) Kathak
- (b) Manipuri
- (c) Bharatanatyam
- (d) Odissi

**Q87.** \_\_\_\_\_ was first trained in classical music under her father Ustad 'Baba' Allaiddin Khan, and established the Maihar-Senia gharana with his help.

- (a) Anupama Bhagwat
- (b) Annapurna Devi
- (c) Roopa Panesar
- (d) Sahana Banerjee

**Q88.** The Guinness world record for the highest number of songs recorded in a day is held by an Indian Playback Singer. How many songs in a day were recorded?

- (a) 34
- (b) 26
- (c) 30
- (d) 28

**Q89.** Who among the following is NOT a part of the Union Executive?

- (a) The Prime Minister of India
- (b) The President of India
- (c) The Supreme Court of India
- (d) The council of ministers

**Q90.** Who among the following personalities received the Prestigious National Nritya Shiromani Award 2022?

- (a) Vedantam Ramalinga Sastry
- (b) Deepa Sashindran
- (c) KV Satyanarayana
- (d) Aparna Satheesan



**Q91.** Which group is on the second column from the right in the periodic table and contains fluorine (F), chlorine (Cl), bromine (Br), iodine (I), astatine (At) and tennessine (Ts)?

- (a) Group 16
- (b) Group 15
- (c) Group 13
- (d) Group 17

**Q92.** In the case of Mohammad Salimullah vs \_\_\_\_\_, the Supreme Court observed in 2021 that the 'Right not to be deported' is concomitant to Article 19 and available only to Indian citizens?

- (a) State of Maharashtra
- (b) Union of India
- (c) State of Tripura
- (d) Union Territory of Lakshadweep

**Q93.** The 13th ICC ODI Cricket World Cup will be organised by \_\_\_\_\_.

- (a) England
- (b) South Africa
- (c) West Indies
- (d) India

**Q94.** In July 2021, in which state/Union Territory did the Ministry of Social Justice and Empowerment of the Government of India launch the 'Samajik Adhikarita Shivar' for the distribution of assistive devices and aids to 'Divyangjan'?

- (a) Chhattisgarh
- (b) Delhi
- (c) Madhya Pradesh
- (d) Punjab

**Q95.** What type of forests are found north and south of the equator between 40° and 60° where rainfall is high, between 500-1500 mm in a year?

- (a) Taiga forests
- (b) Coniferous forests
- (c) Mediterranean forests
- (d) Temperate deciduous forests

**Q96.** What type of rocks were once igneous or sedimentary, but have metamorphosed as a result of intense heat and/or pressure within the Earth's crust?

- (a) Granite
- (b) Quartzite
- (c) Sandstone
- (d) Basalt



**Q97.** Who among the following is the author of 'Set the Boy Free'?

- (a) David Niven
- (b) Johnny Marr
- (c) Paul Kalanithi
- (d) Bill Browder

**Q98.** Which of the following artificial colouring agents is used in dietary supplements, sauces, soups and broths, bakery, dairy fats and oils, seafood, condiments, breath fresheners, desserts, convenience foods, and beverages?

- (a) Acid fuchsin
- (b) Orange G
- (c) Oil red O
- (d) Quinoline yellow

**Q99.** Launched in April 2021, the PM Umeed Scheme aims to provide skills training to around three lakh youths to become entrepreneurs. The tenure of this scheme is upto \_\_\_\_\_.

- (a) 2027-28
- (b) 2023-24
- (c) 2025-26
- (d) 2029-30

**Q100.** Aparna Satheesan, a US-based exponent of Bharatanatyam/Kuchipudi, won the prestigious Abhinandan Saroja National Award from the National Institute of Indian Classical Dance in which of the following years?

- (a) 2021
- (b) 2011
- (c) 2017
- (d) 2005

## (Solutions)

**S1. Ans.(a)**

**Sol.** The correct spelling is "**Informational**" which means 'relating to or characterized by facts about something'.

Meanings of other words are as follows:

**Personnel-** people employed in an organization or engaged in an organized undertaking such as military service.

**Informal-** having a relaxed, friendly, or unofficial style, manner, or nature.

**Personal-** belonging to or affecting a particular person rather than anyone else.

**S2. Ans.(a)**

**Sol.** Use 'carried me' instead of 'drove me' to improve the sentence.

**Carried me-** it is an idiomatic expression which means to support someone so they can achieve a desired result.

**S3. Ans.(c)**

**Sol. A hair's breadth-** a very small distance or amount. Used in a sentence- Her hands were within a hair's breadth from touching the alarm.

**S4. Ans.(c)**

**Sol. Zealot-** a person who is fanatical and uncompromising in pursuit of their religious, political, or other ideals.

Meanings of other words are as follows:

**Janissary-** a member of the Turkish infantry forming the Sultan's guard between the 14th and 19th centuries.

**Zionist-** a supporter of Zionism; a person who believes in the development and protection of a Jewish nation in what is now Israel.

**Healer-** a person who seeks to cure diseases or heal injuries by means other than conventional medical treatment.

**S5. Ans.(b)**

**Sol.** The correct spelling is "**Accomplishment**" which means 'something that has been achieved successfully.'

Meanings of other words are as follows:

**Enthusiasm-** intense and eager enjoyment, interest, or approval.

**Convenience-** the state of being able to proceed with something without difficulty.

**Auxiliary-** providing supplementary or additional help and support.

**S6. Ans.(c)**

**Sol.** The correct spelling of the word is 'Illegible' which means 'not clear enough to be read.'

**S7. Ans.(a)**

**Sol.** Substitute 'is doing' with 'has been doing' to correct the sentence.

The use of 'for' indicates an action continued from period of time in the past until present which means the sentence is in Present Perfect Continuous tense.



**S8. Ans.(a)****Sol. Hated-** feel intense dislike for.Synonyms-**loathe**, detest, abhor, despise.

Antonyms- love, like, admire.

Meanings of other words are as follows:

**Loathe-** feel intense dislike or disgust for.**Enhance-** intensify, increase, or further improve the quality, value, or extent of.**Revere-** feel deep respect or admiration for.**Embrace-** hold (someone) closely in one's arms, especially as a sign of affection.**S9. Ans.(d)****Sol. Perilous-** full of danger or risk.Synonyms-dangerous, hazardous, risky, **treacherous**.

Antonyms-calm, easy, safe, secure.

Meanings of other words are as follows:

**Reliable-** consistently good in quality or performance; able to be trusted.**Worthless-** having no real value or use.**Adventurous-** willing to take risks or to try out new methods, ideas, or experiences.**Treacherous-** guilty of or involving betrayal or deception.**S10. Ans.(c)****Sol. Active Voice:** In Active voice the subject is the one doing the action.**Passive Voice:** In Passive voice the subject is the recipient of the action.To convert active voice into passive voice the object becomes the subject and the subject becomes the object. Subject + verb + object → Object+3<sup>rd</sup> form of verb + by +Subject.

The object of the sentence is 'the library building', there is no subject in the sentence which means we can introduce the subject as per our convenience, the verb used is 'renovated'.

The sentence thus formed in active voice is: "They renovated the library building in 2020."

**S11. Ans.(b)****Sol. Active Voice:** In Active voice the subject is the one doing the action.**Passive Voice:** In Passive voice the subject is the recipient of the action.To convert active voice into passive voice the object becomes the subject and the subject becomes the object. Subject + verb + object → Object+3<sup>rd</sup> form of verb + by +Subject.

The subject of the sentence is 'you', object of the sentence is 'the assignment', the verb used is 'uploaded'.

The sentence thus formed in active voice is: "Have you uploaded the assignment?"

**S12. Ans.(b)****Sol. Active Voice:** In Active voice the subject is the one doing the action.**Passive Voice:** In Passive voice the subject is the recipient of the action.To convert active voice into passive voice the object becomes the subject and the subject becomes the object. Subject + verb + object → Object+3<sup>rd</sup> form of verb + by +Subject.

The subject of the sentence is 'me', object of the sentence is 'coffee', the verb used is 'sipped'.

The sentence thus formed in active voice is: "I sip coffee."

**S13. Ans.(c)****Sol.** The correct spelling is "**Privilege**" which means 'a special right, advantage, or immunity granted or available only to a particular person or group.'

Meanings of other words are as follows:

**Occurrence-** an incident or event.**Accommodation-** a room, group of rooms, or building in which someone may live or stay.**Erroneous-** wrong, incorrect.**S14. Ans.(b)****Sol. Liberal-** willing to respect or accept behavior or opinions different from one's own; open to new ideas.

Synonyms-tolerant, broad minded, open minded, unprejudiced.

Antonyms-**conservative**, bigoted, strict.

Meanings of other words are as follows:

**Ineffectual-** not producing any significant or desired effect.**Conservative-** averse to change or innovation and holding traditional values.**Central-** at the point or in the area that is in the middle of something.**Hysterical-** affected by or deriving from wildly uncontrolled emotion.**S15. Ans.(b)****Sol.** Use 'indulged, monetary' to fill in the blanks respectively.**Indulge-** allow oneself to enjoy the pleasure of.**Monetary-** relating to money or currency.

Out of all the options only option b is contextually correct.

**S16. Ans.(c)**

**Sol. Grease someone's palm-** to bribe someone.

Used in a sentence- I had to grease a few palms to get my approval of the project.

**S17. Ans.(d)**

**Sol.** The correct spelling is "**Embarrassment**" which means 'a feeling of self-consciousness, shame, or awkwardness.'

Meanings of other words are as follows:

**Consciousness-** the state of being aware of and responsive to one's surroundings.

**Euphemism-** a mild or indirect word or expression substituted for one considered to be too harsh or blunt when referring to something unpleasant or embarrassing.

**Encyclopaedia-** a book or set of books giving information on many subjects or on many aspects of one subject and typically arranged alphabetically.

**S18. Ans.(b)**

**Sol.** Replace 'educated' with 'more educated' to improve the sentence.

Use of comparative degree of comparison is required when we talk about two people.

**S19. Ans.(a)**

**Sol.** Option B is the most appropriate sentence to begin the sentence with.

Option D follows option B because it describes the character journey a little more.

Option A comes after option D because it adds more information about the character's story.

The correct order of sentences is BDAC.

**S20. Ans.(a)**

**Sol.** Replace 'how I am lucky to have' with 'how lucky I am' to improve the sentence.

'Lucky' is an adjective and thus always precedes a noun or noun phrase.

**S21. Ans.(d)**

**Sol. Alone-** having no one else present.

**Apart-** (of two or more people or things) separated by a specified distance in time or space.

**Change-** make (someone or something) different; alter or modify.

**Rather-** used to indicate one's preference in a particular matter.

According to their meanings 'alone' is the most appropriate choice to fill in the blank.

**S22. Ans.(c)**

**Sol. Originate-** have a specified beginning.

**Settle-** resolve or reach an agreement about.

**Come-** move or travel towards or into a place thought of as near or familiar to the speaker.

**Involve-** have or include (something) as a necessary or integral part or result.

According to their meanings 'originated' is the most appropriate choice to fill in the blank.

**S23. Ans.(b)**

**Sol. Technique-** a way of carrying out a particular task, especially the execution or performance of an artistic work or a scientific procedure.

**Sense-** a faculty by which the body perceives an external stimulus; one of the faculties of sight, smell, hearing, taste, and touch.

**Phase-** a distinct period or stage in a series of events or a process of change or development.

**Pursuit-** the action of pursuing someone or something.

According to their meanings 'techniques' is the most appropriate choice to fill in the blank.

**S24. Ans.(a)**

**Sol. Choose-** pick out (someone or something) as being the best or most appropriate of two or more alternatives.

**Familiarize-** give (someone) knowledge or understanding of something.

**Make-** form (something) by putting parts together or combining substances; create.

**Strike-** hit forcibly and deliberately with one's hand or a weapon or other implement.

According to their meanings 'choose' is the most appropriate choice to fill in the blank.

**S25. Ans.(c)**

**Sol. Merge-** to combine or join together, or to cause things to do this.

**Compete-** strive to gain or win something by defeating or establishing superiority over others.

**Progress-** forward or onward movement towards a destination.

**Mark-** a small area on a surface having a different color from its surroundings, typically one caused by damage or dirt.

According to their meanings 'merge' is the most appropriate choice to fill in the blank.

**S26. Ans.(c)**

**Sol.** By Option (c)  $\times, +, \div, -, =, \times, +$

$$41 \times 2 + 36 \div 6 - 57 = 7 \times 4 + 3$$

$$82 + 6 - 57 = 31$$

$$31 = 31$$

**S27. Ans.(c)**

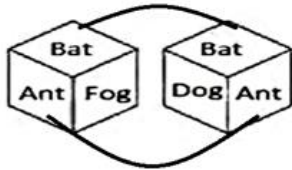
**Sol.** option (c)

$$78 \div 3 + 14 = 80 \div 2$$

$$40 = 40$$

**S28. Ans.(a)**

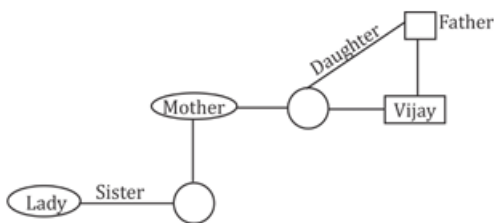
**Sol.**



Fog will be on the face opposite to the showing 'Dog'

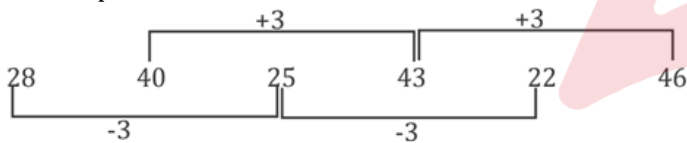
**S29. Ans.(b)**

**Sol.**



**S30. Ans.(b)**

**Sol.** The pattern is



**S31. Ans.(c)**

**S32. Ans.(d)**

$$\text{Sol. } 25 \div 5 - 10 + 2 \times 8 = 11$$

$$5 - 10 + 16 = 11$$

$$\Rightarrow 11 = 11$$

**S33. Ans.(c)**

**Sol.** Remaining days in 3 Feb 2019 = 0

Days March 2019 = 31

Days April 2019 = 30

Days May 2019 = 31

Days June 2019 = 30

Days July 2019 = 31

Days August 2019 = 31

Days September 2019 = 30

Days October 2019 = 31

Days November 2019 = 30

Days December 2019 = 31

Days January 2020 = 31

Days January 2020 = 29

Remaining day March 2020 = 3 days

Total days =  $366/7 = 2$  day

Then, 3<sup>rd</sup> February 2020 = Tuesday - 2 = Sunday

Hence on 3<sup>rd</sup> February 2020 held on Sunday.

**S34. Ans.(b)**

**Sol.** The pattern is

-4, +6, -8, +2

**S35. Ans.(b)**

**S36. Ans.(d)**

**Sol.**

Opposite

Cat Bat Egg

↓

↓

↓

Cat Bat Fog

**S37. Ans.(c)**

**Sol.** Opposite Order

**S38. Ans.(a)**

**Sol.** The pattern is

-5, -5, -5

The answer is CAZ

**S39. Ans.(d)**

**Sol.**



**S40. Ans.(d)**

**S41. Ans.(d)**

$$\text{Sol. I} \rightarrow (75, 25, 28) = (28 - 25) \times 25 = 75$$

$$\text{II} \rightarrow (136, 34, 38) = (38 - 34) \times 34 = 136$$

$$\text{Similarly, } (105, 35, 38) = (38 - 35) \times 35 = 105$$

**S42. Ans.(b)**

**Sol.** The pattern

+2, -2, +2, -2, +2

The answer is RMYCT

**S43. Ans.(d)**

**Sol.** By option (d)

$$96 \times 6 \div 24 = 49 - 25$$

$$24 = 24$$

**S44. Ans.(a)**

**Sol.**  $57 + 35 \div 7 - 14 \times 2 = 34$

$57 + 5 - 28 = 34$

$34 = 34$

**S45. Ans.(d)**

**Sol.** I  $\rightarrow (6 \times 7) - 3 = 39 \times 3 = 117 + 7 = 124$

II  $\rightarrow (8 \times 7) \times 3 = 53 \times 3 = 159 + 7 = 166$

III  $\rightarrow (11 \times 7) - 3 = 74 \times 3 = 222 + 7 = 229$

**S46. Ans.(c)**

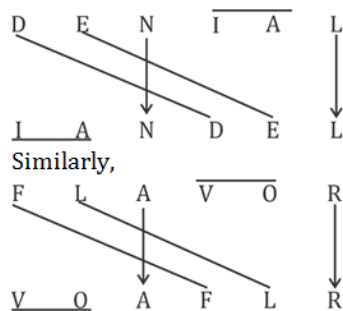
**Sol.** I  $\rightarrow 3 \times 2 \times 5 = 30$

II  $\rightarrow 7 \times 5 \times 5 = 175$

III  $\rightarrow 4 \times 6 \times 5 = 120$

**S47. Ans.(a)**

**Sol.**



**S48. Ans.(d)**

**Sol.** Reverse pair

**S49. Ans.(b)**

**S50. Ans.(c)**

**S51. Ans.(c)**

**Sol.**

Ratio  $\rightarrow$

Cricket : Football      and      Football : Hockey  
27 : 13                      26 : 14  
   13 : 7

$\Rightarrow$  Cricket : Football : Hockey

27 : 13 : 7

Required Percentage  $= \frac{27}{47} \times 100 = 57.45\%$

**S52. Ans.(d)**

**Sol.** Less than 40 = 8, Less than 30 = 6

$\Rightarrow 8 - 6 = 2$

**S53. Ans.(a)**

**Sol.**

$\sec \theta = \frac{x}{14}$

$\sec \theta - \cos \theta = 14$

$\Rightarrow \sec \theta - \cos \theta = \frac{x}{\sec \theta}$

$\Rightarrow \sec^2 \theta - 1 = x$

$\Rightarrow x = \tan^2 \theta$

**S54. Ans.(a)**

**Sol.**

$x + \frac{1}{x} = -13, \quad x^4 + \frac{1}{x^4} = ?$

$x^2 + \frac{1}{x^2} = 167$

Again,

$x^4 + \frac{1}{x^4} = (167)^2 - 2$

$x^4 + \frac{1}{x^4} = 27887$

**S55. Ans.(a)**

**Sol.**

$x + \frac{1}{x} = 7.5$

$x^2 + \frac{1}{(x)^2} = (7.5)^2 - 2$   
 $= 54.25$

**S56. Ans.(c)**

**Sol.**

According to Question  $10\% = \frac{1}{10}$

2 crore  $\times \left(\frac{11}{10}\right)^3 = 2 \times 1.331 = 2.662$  crore

**S57. Ans.(c)**

**Sol.**

$20 + 40 - \frac{20 \times 40}{100} = 52$

Now, 52%, 75%  $\Rightarrow 52 + 75 - \frac{52 \times 75}{100}$

$= 88\%$

Single discount = 88%

**S58. Ans.(c)**

**Sol.** Sales of company 1 in 2016 = 50

Sales of company 2 and 3 =  $(40 + 60) = 100$

Sales of company 1 in 2016 =  $100/2 = 50$

**S59. Ans.(d)**

**Sol.**

Let Total = 100%

Officers	Workers
35%	65%

Let average salary of employees =  $x$

Average salary of officer =  $x + 39000$

Salary of workers =  $\frac{100x - 35(x + 39000)}{65}$

=  $x - 21000$

Required difference =  $x + 39000 - x + 21000$   
= 60,000

**S60. Ans.(c)**

**Sol.**

$$\frac{15}{2} \div \left\{ \frac{5}{4} - \frac{1}{2} \left[ \frac{5}{2} - \left( \frac{1}{4} - \frac{1}{6} \right) \right] \right\} \div \frac{25}{6}$$
$$\frac{15}{2} \div \left\{ \frac{5}{4} - \frac{29}{24} \right\} \times \frac{6}{25}$$
$$= \frac{15}{2} \times 24 \times \frac{6}{25} = 43.2$$

**S61. Ans.(d)**

**Sol.** According to question

Consumption for 18 days =  $6/24 \times 18 = 4.5$

**S62. Ans.(b)**

**Sol.** Capacity of the pond =  $l \times b \times h = 35 \times 2.5 \times 50 = 4375$   
 $m^3$

**S63. Ans.(c)**

**Sol.**

$$\frac{M_1 D_1}{W_1} = \frac{M_2 D_2}{W_2} \Rightarrow \frac{16 \times 45}{15} = \frac{20 \times x}{20}$$
$$\Rightarrow \text{Number of days} = 48$$

**S64. Ans.(a)**

**Sol.**

$$\text{Profit} = 16\% = \frac{4}{25}$$

CP	SP
25	29

6450

$\Rightarrow 1 \text{ Unit} = 258$

SP =  $258 \times 29 = 7482$

**S65. Ans.(a)**

**Sol.** Total Votes = 1500

According to Question,  $2x + x + x = 1500$

$\Rightarrow x = 375$

Winning candidate get the votes =  $2x = 750$

**S66. Ans.(a)**

**Sol.**

Two successive discount 10% and 15%

$$\Rightarrow 10 + 15 - \frac{10 \times 15}{100} = 25 - 1.5 = 23.5\%$$

Difference between 25% and 23.5%

$$= 25\% - 23.5\% = 1.5\%$$

$$\frac{2700 \times 1.5}{100} = 40.5$$

**S67. Ans.(b)**

**Sol.**

According to Question,

$$\frac{8675123 - 3485}{33611}$$

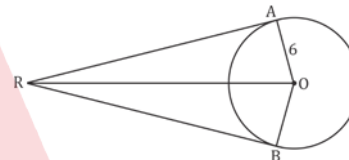
Divisor = 258

**S68. Ans.(b)**

**Sol.**

$$\angle ARB = 70^\circ$$

In  $\square ARBO$



$$\angle ARB + \angle AOB = 180^\circ$$

$$\Rightarrow \angle AOB = 180^\circ - 70^\circ$$

$$= 110^\circ$$

**S69. Ans.(c)**

**Sol.** In 2003 - 2005 = 267, and 2013 - 2015 = 267

**S70. Ans.(a)**

**Sol.**  $6a^2 = 96 \Rightarrow a = 4$

Volume of cube =  $(4)^3 = 64 \text{ cm}^3$

**S71. Ans.(d)**

**Sol.**  $2(lb + bh + hl)$

$$= 2(17 \times 8 + 8 \times 3 + 17 \times 3)$$

$$= 2(136 + 24 + 51) = 422 \text{ m}^2$$

**S72. Ans.(b)**

**Sol.** Earned Monday to Saturday

$$= 115 + 212 + 170 + 165 + 185 + 225 = 1072$$

Income for a week =  $180 \times 7 = 1260$

$$\Rightarrow \text{Sunday's Income} = 1260 - 1072 = 188$$

**S73. Ans.(b)**

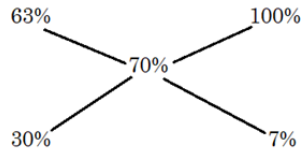
**Sol.**

$$\text{Time} = \frac{D}{S}$$

$$\Rightarrow \frac{180}{54 \times \frac{5}{18}} = \frac{180}{15} = 12 \text{ seconds}$$

**S74. Ans.(a)****Sol.**

According to Question



$$30 \rightarrow 49$$

$$7 \rightarrow \frac{49}{30} \times 7 = 11\frac{13}{30} \text{ litres}$$

**S75. Ans.(d)**

$$\text{Sol. } x^3 + y^3 + z^3 - 3xyz = (x + y + z)[x^2 + y^2 + z^2 - xy - yz - xz]$$

$$\Rightarrow x^3 + y^3 + z^3 - 3xyz = 0$$

**S76. Ans.(b)**

**Sol.** Indian poet Bankim Chandra Chattopadhyay was the composer of Vande Mataram.

- Vande Mataram has been written in highly Sanskritized Bengali, personifying Bengal as a mother goddess and inspiring activists during the Indian Independence Movement.
- He was also the author of the 1882 Bengali language novel 'Anandamath', which is one of the landmarks of modern Bengali and Indian literature.

**S77. Ans.(c)**

**Sol.** Carotenoid helps to trap light energy that is essential for photosynthesis.

- Carotenoids, also called tetraterpenoids, are yellow, orange, and red organic pigments that are produced by plants and algae, as well as several bacteria, and fungi.
- Carotenoids serve two key roles in plants and algae: they absorb light energy for use in photosynthesis, and they provide photoprotection via non-photochemical quenching.

**S78. Ans.(b)**

**Sol.** From the given options, A Suitable Boy is not written by Amitav Ghosh.

- Amitav Ghosh is an Indian writer. He won the 54th Jnanpith award in 2018, India's highest literary honor.
- His first novel The Circle of Reason was published in 1986. His other works are - The Shadow Lines and The Glass Palace etc.

**S79. Ans.(c)**

**Sol.** The foreign exchange reserves in India crossed the landmark of US\$ 600 billion in June 2021.

- In June 2021, India crossed the 600 Billion USD mark for the first time. The total forex reserves touched an all-time high of 642.453 billion US\$ on 8 September 2021. The reserves declined to \$573.9 billion by 29 July 2022.
- India's total foreign exchange (Forex) reserves stand at around US\$532.838 Billion on 07 Oct 2022.

**S80. Ans.(b)**

**Sol.** Reni Village in Garhwal is known for the Chipko movement, an environmental movement in 1970.

- The Chipko movement started in early 1970 in the Garhwal Himalayas of Uttarakhand (the then U.P.).
- The landmark event took place on 26 March 1974 when a group of peasant women of Reni village in the Chamoli district of Uttarakhand grouped to prevent the cutting of trees and reclaim their traditional forest rights.

**S81. Ans.(d)**

**Sol.** US-based Bharatanatyam/Kuchipudi exponent Aparna Satheesan won the prestigious Abhinandan Saroja National Award 2021 from the National Institute of Indian Classical Dance on November 15th, 2021.

- The Abhinandan Saroja National Award was started on the birthday of the legendary Guru Smt. Padma Bhushan Saroja Vaidyanathan for honoring the legacy in the field of Indian Classical Dance.
- The Abhinandan Saroja award is a national award given to eminent dancers for their notable excellence in choreography, performance, and contribution to promoting and preserving the traditional classical dance forms of India.

**S82. Ans.(b)**

**Sol.** Ribosomes are the cellular structures responsible for protein synthesis. When viewed through an electron microscope, free ribosomes appear as either clusters or single tiny dots floating freely in the cytoplasm.

**S83. Ans.(b)**

**Sol.** The equipment bolt is used in Mountaineering.

- Bolts are used in sport climbing as a backup to catch a fall, but not to aid ascent, whereas in aid climbing they can be used to aid ascent.

**S84. Ans.(b)**

**Sol.** Pt. Ravi Shankar is the first-ever Grammy award winner from India.

- He was an Indian sitarist and composer.
- He was the first Indian to win a Grammy Award for his album West Meets East in the 'Best Chamber Music Performance' category in 1968.



**S85. Ans.(b)**

**Sol.** Why I Am an Atheist is an essay written by Indian revolutionary Bhagat Singh in 1930 in Lahore Central Jail.

- The essay was a reply to his religious friends who thought Bhagat Singh became an atheist because of his vanity.

**S86. Ans.(b)**

**Sol.** Padma Shri awardee Guru Amubi Singh has been conferred the award for his significant contributions to the Indian classical dance form of Manipuri.

- He was honoured by the Government of India in 1970 with Padma Shri, the fourth highest Indian civilian award.

**S87. Ans.(b)**

**Sol.** Annapurna Devi was first trained in classical music under her father Ustad 'Baba' Allaiddin Khan, and established the Maihar-Senia Gharana with his help.

- She was an Indian surbahar (bass sitar) player of Hindustani classical music.
- The Maihar Gharana or Maihar-Senia Gharana is a Gharana or school of Hindustani classical music.
- The school was formed by Allaiddin Khan in the princely state of Maihar, now in the central Indian state of Madhya Pradesh.

**S88. Ans.(d)**

**Sol.** Kumar Sanu made a record in 1993 when he recorded 28 songs in a single day.

- Sanu was one of the most popular singers in the '90s with songs like Tujhe Dekha To (Dilwale Dulhania Le Jayenge), Ek Ladki Ko Dekha (1942: A Love Story), and Do Dil Mil Rahe Hain (Pardes) etc.

**S89. Ans.(c)**

**Sol.** From the given options, The Supreme Court of India is not a part of the Union Executive.

- The Union executive consists of the President, the Vice-President, and the Council of Ministers with the Prime Minister as the head to aid and advise the President.

**S90. Ans.(d)**

**Sol.** Aparna Satheesan, an exponent in Bharatanatyam and Kuchipudi, is honored with the prestigious National Nritya Shiromani award for her outstanding performance, extraordinary contribution, and excellent service to the promotion, preservation, and popularization of the heritage of Indian Performing Arts in the field of Kuchipudi dance across the world.

- The award was conferred on the week-long 13th Cuttack Mahotsav, an international festival for Dance and Music in January 2022, by the Utkal Yuva Sanskrutik Sangh, Odisha.

**S91. Ans.(d)**

**Sol.** Group 17 is on the second column from the right in the periodic table and contains

fluorine (F), chlorine (Cl), bromine (Br), iodine (I), astatine (At), and tennessine (Ts).

- Group 17 elements are collectively called halogens. The word "halogen" means "salt former".
- When halogens react with metals, they produce a wide range of salts, including calcium fluoride, sodium chloride (common table salt), etc.

**S92. Ans.(b)**

**Sol.** In the case of Mohammad Salimullah vs Union of India, the Supreme Court observed in 2021

that the 'Right not to be deported' is concomitant to Article 19 and available only to Indian citizens.

- Mohammad Salimullah v. Union of India, is a petition challenging the deportation of Rohingya Muslims who had taken refuge in India to escape persecution in Myanmar.
- The court, however, in an interim order rejected any relief and allowed their deportation subject to the proper procedure being followed.

**S93. Ans.(d)**

**Sol.** The 13th ICC ODI Cricket World Cup will be organized by India.

- The ICC Men's Cricket World Cup 2023 will be the 13th edition of the 50-over World Cup.

**S94. Ans.(c)**

**Sol.** In July 2021, in Madhya Pradesh, the Ministry of Social Justice and Empowerment of the Government of India launched the 'Samajik Adhikarita Shivar' for the distribution of assistive devices and aids to 'Divyangjan'.

- A 'Samajik Adhikarita Shivar' for the distribution of aids and assistive devices to 'Divyangjan' under the ADIP Scheme of the Ministry of Social Justice and Empowerment, Government of India was organized by the Department of Empowerment of Persons with Disabilities (DEPwD) in association with ALIMCO and District Administration Niwari in Madhya Pradesh.

**S95. Ans.(d)**

**Sol.** Temperate deciduous forests are found north and south of the equator between 40° and 60° where rainfall is high, between 500-1500 mm in a year.

- **Temperate deciduous forests** are located in the mid-latitude areas which means that they are found between the polar regions and the tropics.

**S96. Ans.(b)**

**Sol.** Quartzite Rocks were once igneous or sedimentary, but have metamorphosed as a result of intense heat and/or pressure within the Earth's crust.

- Quartzite is a hard, non-foliated metamorphic rock that was originally pure quartz sandstone. Sandstone is converted into quartzite through heating and pressure.

**S97. Ans.(b)**

**Sol.** Johnny Marr is the author of 'Set the Boy Free'.

- **Johnny Marr** is an English musician, songwriter, and singer.
- 'Set the Boy Free' is autobiography of Johnny marr.

**S98. Ans.(d)**

**Sol.** Quinoline yellow, an artificial colouring agent, is used in dietary supplements, sauces, soups, and broths, bakery, dairy fats and oils, seafood, condiments, breath fresheners, desserts, convenience foods, and beverages.

- Quinoline Yellow WS is a mixture of organic compounds derived from the dye Quinoline Yellow SS.
- It is a mixture of disulfonates, monosulfonates and trisulfonates of 2-indan-1,3-dione.

**S99. Ans.(c)**

**Sol.** Launched in April 2021, the "PM Umeed Scheme" aims to provide skills training to around three lakh youths to become entrepreneurs. The tenure of this scheme is up to 2025-26.

- UMEED is immensely helping women entrepreneurs to exhibit and market their products.
- The UMEED programme under JKRLM is a centrally sponsored scheme to encourage women to be self-dependent and self-sufficient.

**S100. Ans.(a)**

**Sol.** US-based Bharatanatyam/Kuchipudi exponent Aparna Satheesan won the prestigious Abhinandan Saroja National Award 2021 from the National Institute of Indian Classical Dance on November 15th, 2021.

- The Abhinandan Saroja National Award was started on the birthday of the legendary Guru Smt. Padma Bhushan Saroja Vaidyanathan for honoring the legacy in the field of Indian Classical Dance.

The Abhinandan Saroja award is a national award given to eminent dancers for their notable excellence in choreography, performance, and contribution to promoting and preserving the traditional classical dance forms of India.



**Q1.** Select the option that can be used as a one-word substitute for the group of words given in bold.

Ravi got the job easily because he **speaks many languages**.

- (a) Polyglot
- (b) Polynomial
- (c) Polycentric
- (d) Polysyllabic

**Q2.** Select the most appropriate synonym of the given word.

Loathe

- (a) Entrench
- (b) Abhor
- (c) Abjure
- (d) Meddle

**Q3.** From among the words given in bold, select the INCORRECTLY spelt word in the following sentence.

The popular **ridikule** of Puritanism in **burlesque** and **doggerel** is best **exemplified** in Butler's Hudibras.

- (a) exemplified
- (b) ridikule
- (c) burlesque
- (d) doggerel

**Q4.** Select the most appropriate meaning of the given idiom.

A snake in the grass

- (a) A timid person
- (b) A deceitful person
- (c) A wealthy person
- (d) A talkative person

**Q5.** Select the INCORRECTLY spelt word.

- (a) Guide
- (b) Geilty
- (c) Guard
- (d) Global

**Q6.** Select the most appropriate option to substitute the bold segment in the given sentence.

During the war, the comedian proved to be a **man of music**.

- (a) man of words
- (b) man of Mars
- (c) man of straw
- (d) man of grass

**Q7.** Select the denotation of the highlighted word.

The archer doesn't get **perturbed** easily.

- (a) Initiated
- (b) Agitated
- (c) Animated
- (d) Triumphed

**Q8.** Select the most appropriate option that can substitute the words in the given sentence in bold.

All his bones could be counted because his body was totally **shrivelled and wrinkled with age**.

- (a) wizened
- (b) shrunken
- (c) dried
- (d) bony

**Q9.** Select the most appropriate option to fill in the blank.

Asha was \_\_\_\_\_ made a fool by her friend.

- (a) insistently
- (b) unknowingly
- (c) innocently
- (d) deliberately

**Q10.** Select the option that expresses the given sentence in passive voice.

You never hear of a happy billionaire.

- (a) A happy billionaire is never heard of.
- (b) A happy billionaire never heard of.
- (c) A happy billionaire is never heard by you.
- (d) No one hears a happy billionaire.

**Q11.** Select the option that expresses the given sentence in passive voice.

The most recent studies on the human body are likely to alter the face of health sciences.

- (a) The most recent studies on the human body are likely to be altered by the face of health sciences.
- (b) The face of health sciences will be altering the most recent studies on the human body.
- (c) The face of health sciences is likely to be altered by the most recent studies on the human body.
- (d) The most face of health sciences is likely to alter the recent studies on the human body.

**Q12.** The following sentence has been split into four segments. Identify the segment that contains a grammatical error.

The river / flowed besides / the hillock / in our village.

- (a) in our village
- (b) the hillock
- (c) flowed besides
- (d) The river

**Q13.** Select the most appropriate meaning of the given idiom.

Tit for tat

- (a) Prepare to leave
- (b) A wild guess
- (c) Counter attack
- (d) Go smoothly

**Q14.** Select the most appropriate ANTONYM of the highlighted word in the following sentence.

Eventually the patient **succumbed** to her illness.

- (a) died
- (b) overcame
- (c) surrendered
- (d) advanced

**Q15.** Select the most appropriate option that can substitute the highlighted segment in the given sentence.

Show me **the better** dress in the shop.

- (a) a better
- (b) a good
- (c) the best
- (d) the good

**Q16.** Sentences of a paragraph are given below in jumbled order. Arrange the sentences in the correct order to form a meaningful and coherent paragraph.

- A. Their brother, John, is more blatantly hostile to Jane, reminding her that she is a poor dependent of his mother.
- B. Orphaned as an infant, Jane Eyre lives at Gateshead with her aunt, Sarah Reed, as the novel opens.
- C. Her female cousins, Georgiana, and Eliza, tolerate, but don't love her.
- D. Jane is ten years old, an outsider in the Reed family.

- (a) DCAB
- (b) DBCA
- (c) BDCA
- (d) BACD

**Q17.** Select the INCORRECTLY spelt word.

- (a) Beautycian
- (b) Mathematician
- (c) Musician
- (d) Technician

**Q18.** Select the most appropriate option that can substitute the highlighted segment in the given sentence. If there is no need to substitute it, select 'No substitution required'.

At the end of our first two weeks on the island, **we were informed** that our lawyers, Bram Fischer and Joel Joffe, were going to be visiting the following day.

- (a) we are informed
- (b) we get inform
- (c) No substitution required
- (d) we were inform

**Q19.** Select the most appropriate synonym of the given word.

Perilous

- (a) Dangerous
- (b) Stimulus
- (c) Secure
- (d) Impetus

**Q20.** Select the most appropriate synonym of the given word.

Serendipity

- (a) Sibillance
- (b) Godsend
- (c) Catastrophe
- (d) Surreptitious

**Directions (21-25):** In the following passage, some words have been deleted. Read the passage carefully and select the most appropriate option to fill in each blank.

Psychologists discovered that there are two routes (21) \_\_\_\_\_ achievement: conformity and originality. Conformity means following the crowd (22) \_\_\_\_\_ conventional paths and (23) \_\_\_\_\_ the status quo. Originality is taking the road (24) \_\_\_\_\_ travelled, championing a set of novel ideas that go against the grain but (25) \_\_\_\_\_ making things better.

**Q21.** Select the most appropriate option to fill in blank number 1.

- (a) against
- (b) on
- (c) off
- (d) to

**Q22.** Select the most appropriate option to fill in blank number 2.

- (a) down
- (b) beside
- (c) since
- (d) at

**Q23.** Select the most appropriate option to fill in blank number 3.

- (a) building
- (b) supplying
- (c) serving
- (d) maintaining

**Q24.** Select the most appropriate option to fill in blank number 4.

- (a) quietly
- (b) far
- (c) frequently
- (d) less

**Q25.** Select the most appropriate option to fill in blank number 5.

- (a) superficially
- (b) disinterestedly
- (c) advertently
- (d) ultimately

**Q26.** Select the option that is related to the fifth word in the same way as the second word is related to the first word and the fourth word is related to the third word. (The words must be considered as meaningful English words and must NOT be related to each other based on the number of letters/number of consonants/vowels in the word)

Nut and Bolt : Wrenches :: Screw : Screwdriver :: Nail : ?

- (a) Scissors
- (b) Pliers
- (c) Hammer
- (d) Axe

**Q27.** Which of the following numbers will replace the question mark (?) in the given series?

10, 20, 23, ?, 97, 582

- (a) 53
- (b) 78
- (c) 82
- (d) 92

**Q28.** In a certain code language, 'GREAT' is coded as '2015187', 'WORK' is coded as '11181523' and 'GOING' is coded as '7149157'. How will 'WELL' be coded in that language?

- (a) 1425431
- (b) 3231345
- (c) 1454321
- (d) 1212523

**Q29.** The second number in the given number pairs is obtained by performing certain mathematical operation(s) on the first number. The same operation(s) are followed in all the number pairs, EXCEPT one. Find that odd number pair.

- (a) 25 : 100
- (b) 22 : 66
- (c) 24 : 96
- (d) 18 : 72

**Q30.** Which of the following numbers will replace the question mark (?) in the given series?

11, 13, 29, 91, 369, ?

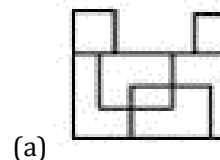
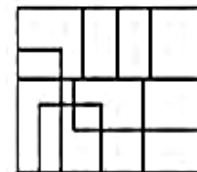
- (a) 1815
- (b) 1851
- (c) 1158
- (d) 1518

**Q31.** Select the option that is related to the third word in the same way as the second word is related to the first word. (The words must be considered as meaningful English words and must NOT be related to each other based on the number of letters/number of consonants/vowels in the word)

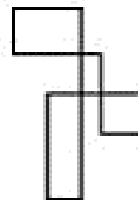
Car : Bonnet :: Boat : ?

- (a) Stern
- (b) Mast
- (c) Bow
- (d) Port

**Q32.** Select the option that is embedded in the given figure as its part (rotation is NOT allowed).

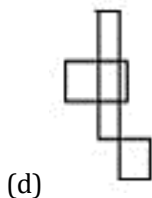
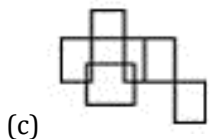


(a)



(b)





**Q33.** In a certain code language, "CLIENT" is written as "LCEITN", and "CLOSED" is written as "LCSODE". How will "FAMILY" be written in that language?

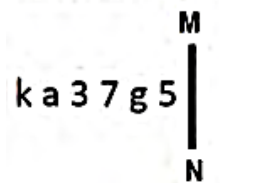
- (a) FAIMYL
- (b) AFIMYL
- (c) AFIMLY
- (d) AFMILY

**Q34.** Which of the following letter-clusters will replace the question mark (?) in the given series to make it logically complete?

WDV, TGS, QJP, NMM, ?

- (a) PJK
- (b) KPJ
- (c) JPK
- (d) JKP

**Q35.** Select the correct mirror image of the given combination when the mirror is placed at MN as shown below.



- (a) 2 g 7 ε 9 ɿ
- (b) 2 g 7 ε 6 ɿ
- (c) 2 g 7 ε 6 ɿ
- (d) 2 g 7 3 6 ɿ

**Q36.** Select the option that is related to the third term in the same way as the second term is related to the first term and the sixth term is related to the fifth term.

14 : 21 :: 34 : ? :: 47 : 87

- (a) 61
- (b) 57
- (c) 65
- (d) 53

**Q37.** Study the given pattern carefully and select the number that can replace the question mark (?) in it.

First row: 86, 72, 158

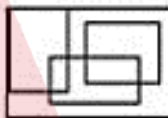
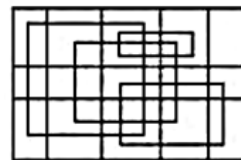
Second row: 98, 111, 209

Third row: 76, 65, ?

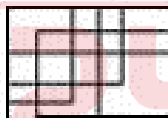
(NOTE: Operations should be performed on the whole numbers, without breaking down the number into its constituent digits. For example, 13 – Operations on 13 such as adding/deleting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

- (a) 148
- (b) 131
- (c) 141
- (d) 137

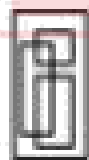
**Q38.** Select the option figure which is embedded in the given figure as its part (rotation is NOT allowed).



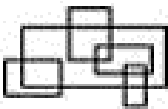
(a)



(b)



(c)



(d)

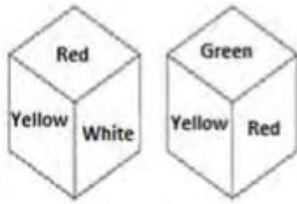
**Q39.** Select the correct combination of mathematical signs to replace the \* signs and to balance the given equation.

62\*17\*6\*81\*23\*2\*37

- (a) +, =, ÷, -, +, ×
- (b) -, ×, =, -, +, ×
- (c) =, -, ×, +, -, +
- (d) +, ×, -, =, ×, +

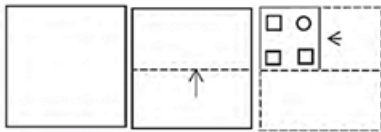


**Q40.** Two different positions of the same dice are shown. The six faces of which are coloured Red, Green, Blue, Yellow, Black, white. Select the colour that will be on the face opposite to the one coloured White.



- (a) Red
- (b) Green
- (c) Black
- (d) Blue

**Q41.** A paper is folded and cut as shown. How will it appear when unfolded?



- (a)
- (b)
- (c)
- (d)

**Q42.** Select the option that represents the correct order of the given words as they would appear in an English dictionary.

- 1. Sanitization
- 2. Sanctuary
- 3. Salvation
- 4. Salmon
- 5. Salesman
- (a) 5,3,4,1,2
- (b) 4,5,3,2,1
- (c) 5,4,3,2,1
- (d) 4,3,2,1,5

**Q43.** Select the option that represents the correct order of the given words as they would appear in an English dictionary.

- 1. Curator
- 2. Culminate
- 3. Curriculum
- 4. Culinary
- 5. Cucumber
- (a) 5,4,2,1,3
- (b) 4,3,2,1,5
- (c) 1,2,3,4,5
- (d) 5,4,3,2,1

**Q44.** Select the correct combination of mathematical signs to sequentially replace the \* signs and to balance the given equation.

$$25 * 5 * 10 * 2 * 4 * 10$$

- (a)  $\div, \times, +, -, =$
- (b)  $\times, \div, -, +, =$
- (c)  $+, -, \div, \times, =$
- (d)  $\div, \times, -, +, =$

**Q45.** Study the given pattern carefully and select the number that can replace the question mark (?) in it.

First row- 2, 57, 7

Second row- 6, 225, 3

Third row- 5, ?, 2

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding /deleting /multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is NOT allowed)

- (a) 192
- (b) 127
- (c) 172
- (d) 129

**Q46.** Three statements are given, followed by three conclusions numbered I, II and III.

Assuming the statements to be true, even if they seem to be at variance with commonly known facts, decide which of the conclusions logically follow(s) from the statements.

**Statements:**

All pencils are erasers.

All sharpeners are erasers.

All compasses are sharpeners.

### Conclusions:

- I. All compasses are erasers.
- II. Some compasses are pencils.
- III. Some erasers are compass.

- (a) Only conclusions I and III follow
- (b) Only conclusion I follows
- (c) Only conclusion II follows
- (d) Only conclusions I and II follow

**Q47.** Select the combination of letters that when sequentially placed in the blanks of the given series will complete the series.

A B Z \_ P A B \_ K P A B X K \_ A B \_ K P

- (a) A C B Z
- (b) A Y Z W
- (c) K Y P W
- (d) K C Z W

**Q48.** Which of the following numbers will replace the question mark (?) in the given series?

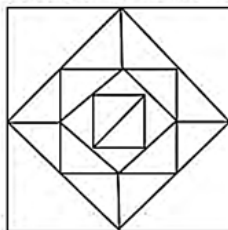
1724, 1716, 1689, 1625, 1500, ?

- (a) 1296
- (b) 1284
- (c) 1254
- (d) 1280

**Q49.** The second number in the given number pairs is obtained by performing certain mathematical operation(s) on the first number. The same operation(s) are followed in all the number pairs, EXCEPT one. Find that odd number pair.

- (a) 42 : 7
- (b) 36 : 6
- (c) 48 : 8
- (d) 24 : 8

**Q50.** How many triangles are there in the given figure?



- (a) 30
- (b) 24
- (c) 28
- (d) 26

**Q51.** The table below gives the numbers of students from five different colleges who participated in Olympiads of five different subjects during a given year.

Subjects	College A	College B	College C	College D	College E
Hindi	110	100	125	103	112
English	98	120	80	122	105
Maths	130	110	250	160	180
Science	100	100	150	200	80
GK	182	200	120	130	183

Find the difference between 'the range of the numbers of participants in the different Olympiads from College C' and 'the average number of participants per Olympiads from College E' during the given year.

- (a) 38
- (b) 13
- (c) 37
- (d) 36

**Q52.** The Group Leader of a group of 6 students reported that their average weight is 46 kg. When the members of the group were asked about their individual weights, 5 of them answered: 50 kg, 52 kg, 40 kg, 44 kg, 48 kg. The 6th member said, "I can't recall my weight". What is his weight?

- (a) 43 kg
- (b) 44 kg
- (c) 45 kg
- (d) 42 kg

**Q53.** What will be the smallest natural number to be filled in the blank for the number '23\_45678' to be divisible by 22?

- (a) 7
- (b) 1
- (c) 9
- (d) 3

**Q54.** If the cost price of 70 articles is equal to the selling price of 40 articles, what will be the profit percentage?

- (a) 75%
- (b) 65%
- (c) 60%
- (d) 70%

**Q55.** Kamal purchases 80 articles for Rs. 11,180 and sells them at a loss equal to the selling price of 6 articles. What will be the selling price of 1 article?

- (a) Rs. 130
- (b) Rs. 120
- (c) Rs. 135
- (d) Rs. 125

**Q56.** If  $a + b + c = 10$  and  $ab + bc + ca = 30$ , then the value of  $a^2 + b^2 + c^2$  is:

- (a) 40
- (b) 38
- (c) 30
- (d) 25

**Q57.** 700 grams of cane sugar solution has 60% of sugar in it. How much sugar should be added to make it 75% in the solution?

- (a) 320 gm
- (b) 480 gm
- (c) 380 gm
- (d) 420 gm

**Q58.** If the sum of two numbers is 25 and their product is 144, then what is the position difference between the two numbers?

- (a) 8
- (b) 7
- (c) 16
- (d) 9

**Q59.** A can do a piece of work in 24 days and B can do it in 80 days. B works alone for 2 days and A works alone on the 3rd day. This process continues till the work is completed. In how many days will the work be completed?

- (a) 42
- (b) 45
- (c) 48
- (d) 44

**Q60.** The difference between the simple interest and compound interest on Rs. 1,000 for 1 year at 20% per annum, compounded half-yearly, is:

- (a) Rs. 8
- (b) Rs. 5
- (c) Rs. 10
- (d) Rs. 12

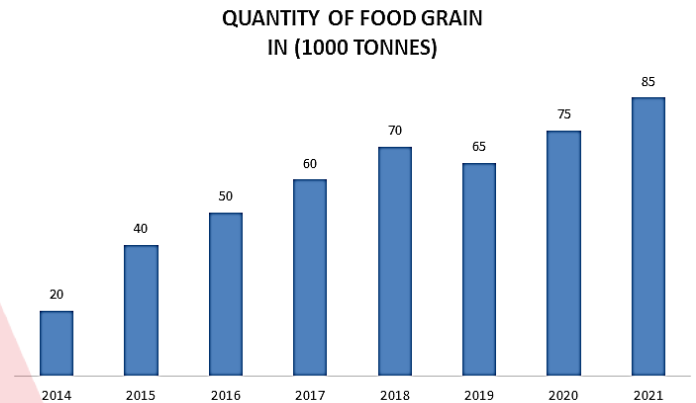
**Q61.** Find the volume of a hemisphere of radius 21 cm. (Use  $\pi = 22/7$ )

- (a)  $19400 \text{ cm}^3$
- (b)  $18440 \text{ cm}^3$
- (c)  $17404 \text{ cm}^3$
- (d)  $19404 \text{ cm}^3$

**Q62.** Rakesh runs  $4/3$  times as fast as Mukesh. In a race, if Rakesh gives a lead of 60 m to Mukesh, find the distance from the starting point where both of them will meet.

- (a) 232 m
- (b) 240 m
- (c) 264 m
- (d) 255 m

**Q63.** Study the given graph carefully and answer the question that follows. Production of food grains by a state over the years (1000 tonnes)



What was the percentage drop in the production of food grains from 2018 to 2019 (consider up to two decimals)?

- (a) 7.14%
- (b) 5.14%
- (c) 7.02%
- (d) 6.14%

**Q64.** If  $x^2 = b - ax$  and  $x^3(x^3 + c) = d$ , then which of the following can be the values of  $c$  and  $d$ ?

- (a)  $c = a^3 - 3ab$  and  $d = b^3$
- (b)  $c = -a^3 - 3ab$  and  $d = b^3$
- (c)  $c = a^3 + 3ab$  and  $d = b^3$
- (d)  $c = a^3 + 3ab$  and  $d = -b^3$

**Q65.** A bike is purchased for Rs. 50,000. Its rate depreciates at 10% annually. In how many years will its value be Rs. 36,450?

- (a) 3
- (b) 2
- (c) 5
- (d) 4

**Q66.** If  $2945 \div 19 - 11 \times 5 = 29 + a$ , find the value of  $a$ .

- (a) 90
- (b) 100
- (c) 69
- (d) 71

**Q67.** If 15 kg of sugar cost Rs. 600, what is the cost of 25 kg of sugar?

- (a) Rs. 1,100
- (b) Rs. 900
- (c) Rs. 1,000
- (d) Rs. 800

**Q68.** Nikhil suffers a loss of Rs. 140 when he sells a perfume at 20% discount. Find the marked price of the perfume if the cost price is Rs. 380.

- (a) Rs. 280
- (b) Rs. 300
- (c) Rs. 310
- (d) Rs. 290

**Q69.** A sphere passes through the eight corners of a cube of side 14 cm. Find the volume (in  $\text{cm}^3$ ) of the sphere.

Take  $\pi = 22/7$

- (a)  $4312\sqrt{3}$
- (b)  $4012\sqrt{3}$
- (c)  $4312\sqrt{2}$
- (d)  $4012\sqrt{2}$

**Q70.** If the height and slant height of a right circular cone are 8 cm and 10 cm, respectively, then the volume of the cone is (use  $\pi=22/7$ ): (correct the two decimal places)

- (a)  $200\text{ cm}^3$
- (b)  $301.71\text{ cm}^3$
- (c)  $258\text{ cm}^3$
- (d)  $299.45\text{ cm}^3$

**Q71.** A family spends Rs. 240 per month to buy sugar. A rise of 25% in the price of sugar compels the family to reduce the monthly consumption of sugar by 1.5 kg as it decides to spend the same amount of money on purchase of the commodity. What is the increased price per kg of sugar?

- (a) Rs. 32
- (b) Rs. 35
- (c) Rs. 40
- (d) Rs. 38

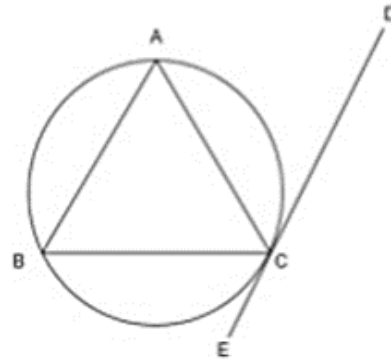
**Q72.** The table below gives the numbers of laptops of three different brands sold from four different multi-brands store in the city during a certain month.

Laptop	Dell	HP	Lenovo
Brands Stores			
A	30	45	50
B	25	32	40
C	25	35	38
D	45	29	45

The number of Lenovo Laptop sold by stores A during the given month is approximately what percentage more than the number of Dell laptops sold by Store D during the same month?

- (a) 12.4
- (b) 13.8
- (c) 11.1
- (d) 10.3

**Q73.** In the following figure,  $\triangle ABC$  is an inscribed triangle as shown and DE is a tangent to the circle at C. which of the angles from the given options is necessarily equal to  $\angle ACD$ ?



- (a)  $\angle BAC$
- (b)  $\angle BCE$
- (c)  $\angle ABC$
- (d)  $\angle BCA$

**Q74.**

If  $\frac{x - x \csc^2 30^\circ}{1 + \csc^2 30^\circ} = \cos^2 60^\circ + 4 \cot^2 45^\circ - \sec^2 60^\circ$ , then the value of x is \_\_\_\_\_.

- (a)  $\frac{5}{12}$
- (b)  $-\frac{5}{12}$
- (c)  $\frac{1}{5}$
- (d)  $-\frac{1}{12}$

**Q75.** By what percent the new price of the article must be increased to restore its former value, if the cost of the article is cut by 25% in the past?

- (a)  $34\frac{1}{4}\%$
- (b)  $33\frac{1}{3}\%$
- (c) 33%
- (d) 34%

**Q76.** Who wrote the autobiography entitled 'I am No Messiah'?

- (a) Sachin Tendulkar
- (b) Sonu Sood
- (c) Paramahansa Yogananda
- (d) APJ Abdul Kalam

**Q77.** Who wrote the famous novel "The Inheritance of Loss"?

- (a) Arundhati Roy
- (b) Kiran Desai
- (c) RK Narayan
- (d) Vikram Seth

**Q78.** India's men's hockey team beat Pakistan to win a bronze medal in December 2021 at the:

- (a) Asian Champions Trophy
- (b) Moinuddowla Gold Cup
- (c) ICC Champions Trophy
- (d) Ghulam Ahmed Trophy

**Q79.** \_\_\_\_\_ is the money which is accepted as a medium of exchange because of the trust between the payer and the payee.

- (a) Credit money
- (b) Fiduciary money
- (c) Fiat money
- (d) Full bodied money

**Q80.** In which sport are arrows used?

- (a) Fencing
- (b) Shooting
- (c) Boxing
- (d) Archery

**Q81.** Rajeev Janardan is an Indian classical \_\_\_\_\_ player of the Imdadkhani gharana.

- (a) tabla
- (b) flute
- (c) harmonium
- (d) sitar

**Q82.** Tulsidas Borkar, who was awarded with the Padma Shri in 2016, was a \_\_\_\_\_ player.

- (a) nadhaswaram
- (b) shehnai
- (c) bansuri
- (d) Harmonium

**Q83.** Dr. Tamilisai Soundararajan was given the additional charge of \_\_\_\_\_ and was sworn in as the Lt. Governor of this Union Territory in February 2021, apart from being the Governor of Telangana.

- (a) Delhi
- (b) Puducherry
- (c) Lakshadweep
- (d) Chandigarh

**Q84.** Aqua regia is an acidic, corrosive and oxidative mixture consisting of \_\_\_\_\_ volume/volumes of concentrated hydrochloric acid and one volume of concentrated nitric acid, often used to dissolve gold and platinum.

- (a) Two
- (b) Three
- (c) one
- (d) Four

**Q85.** Maithili Thakur and Lydian Nadhaswaram were bestowed with Sur Jyotsna National Music Awards \_\_\_\_\_.

- (a) 2021
- (b) 2020
- (c) 2019
- (d) 2018

**Q86.** Which compound has the chemical formula  $\text{CHCl}_3$  whose melting point is 209 K?

- (a) Carbon tetrachloride
- (b) Chlorophenol
- (c) Chloroform
- (d) Chloroethanol

**Q87.** Who was the runner-up of Yonex Swiss open 2021 women single badminton tournament?

- (a) Jwala Gutta
- (b) PV Sindhu
- (c) Saina Nehwal
- (d) Malvika Bansode

**Q88.** Who among the following Sadir dancer received the Padma Shri 2022?

- (a) Tsering Namgyal
- (b) Sulochna Chavan
- (c) R Muthukannammal
- (d) Thavil KongampattuavMurugaiyan

**Q89.** The famous Jhaveri sisters are associated with the \_\_\_\_\_ classical dance form.

- (a) Odissi
- (b) Bharatanatyam
- (c) Manipuri
- (d) Kathak

**Q90.** The Northern Plains of India are made of alluvial soil. They are formed by the interplay of which three rivers?

- (a) Ganga, Mahanadi, Indus
- (b) Indus, Ganga, Brahmaputra
- (c) Indus, Mahanadi, Brahmaputra
- (d) Brahmaputra, Mahanadi, Ganga

**Q91.** Which inorganic compound is used to manufacture soap, rayon, paper, explosives, dyes, and petroleum products?

- (a) NaOCl
- (b) NaOH
- (c) CaOCl<sub>2</sub>
- (d) NaHCO<sub>3</sub>

**Q92.** Pandit Bhimsen Guracharya Joshi was an Indian classical vocalist born in \_\_\_\_\_.

- (a) Karnataka
- (b) Madhya Pradesh
- (c) Rajasthan
- (d) Maharashtra

**Q93.** Which State Government will provide financial support to Indian wrestling till 2032 Olympics?

- (a) Uttar Pradesh
- (b) Bihar
- (c) Jharkhand
- (d) Karnataka

**Q94.** Which red-orange pigment found in plants and fruits, especially carrots and colourful vegetables, acts as a powerful antioxidant that can benefit our brain, skin, lungs, and eye health?

- (a) Beta-cryptoxanthin
- (b) Beta-carotene
- (c) Zeaxanthin
- (d) Lutein

**Q95.** 'Waiting for a Visa' is an autobiographical work of which of the following leaders of India?

- (a) Bhagat Singh
- (b) Bipin Chandra Pal
- (c) Bhimrao Ramji Ambedkar
- (d) Lala Lajpat Rai

**Q96.** Haleem Khan is associated with which of the following classical dances?

- (a) Mohiniyattam
- (b) Kathak
- (c) Kuchipudi
- (d) Bharatanatyam

**Q97.** What test is used where the elements present in the compound are converted from covalent form into the ionic form by fusing the compound with sodium metal?

- (a) Flame test
- (b) D-dimer test
- (c) Blood test
- (d) Lassaigne's test

**Q98.** Members of Public Accounts Committee are elected for a period of:

- (a) one year
- (b) two years
- (c) five years
- (d) three years

**Q99.** Guru Makar Dhawaja Darogha, was conferred the Padma Shri award for his contribution to which form of dance in India?

- (a) Panthi
- (b) Saila
- (c) Chhau
- (d) Raut Nacha

**Q100.** Which English ecologist was the first to describe the distinctive shape of the food web, which he called the pyramid of numbers?

- (a) Arthur Tansley
- (b) Eugene Odum
- (c) Charles Elton
- (d) Ernst Haeckel





## S1. Ans.(a)

**Sol. Polyglot-** Someone who speaks many languages.

Meanings of other words are as follows:

**Polynomial-** an expression of more than two algebraic terms, especially the sum of several terms that contain different powers of the same variable(s).

**Polycentric-** having more than one center.

**Polysyllabic-** having more than one syllable.

## S2. Ans.(b)

**Sol. Loathe-** to feel intense dislike or disgust for something.

Synonyms- despise, detest, **abhor**, hate.

Antonyms- love, like, admire, special.

Meanings of other words are as follows:

**Entrench-** establish so firmly that change is very difficult or unlikely.

**Abjure-** solemnly renounce.

**Meddle-** interfere in something that is not one's concern.

**Abhor-** regard with disgust and hatred.

## S3. Ans.(b)

**Sol.** The correct spelling of the word is "**Ridicule**" which means 'the subjection of someone or something to contemptuous and dismissive language or behavior'.

Meanings of other words are as follows:

**Exemplified-** be a typical example of.

**Burlesque-** an absurd or comically exaggerated imitation of something, especially in a literary or dramatic work; a parody.

**Doggerel-** comic verse composed in irregular rhythm.

## S4. Ans.(b)

**Sol. A snake in the grass-** a secretly unfaithful friend.

Used in a sentence- He's just a snake in the grass. You can't trust that guy.

## S5. Ans.(b)

**Sol.** The correct spelling of the word is "**Guilty**" which means 'culpable of or responsible for a specified wrongdoing'.

Meanings of other words are as follows:

**Guide-** a person who shows the way to others, especially one employed to show tourists around places of interest.

**Guard-** watch over in order to protect or control.

**Global-** relating to the whole world; worldwide.

## S6. Ans.(c)

**Sol. 'Man of straw'** is phrase of 'man' which means 'a person regarded as having no substance or integrity'.

## S7. Ans.(b)

**Sol. Perturbed-** feeling anxiety or concern.

Synonym- **agitated**, unsettled, upset, concerned.

Antonym- calm, unperturbed, composed, assured.

Meanings of other words are as follows:

**Animated-** full of life or excitement.

**Triumph-** achieve a victory; be successful.

**Initiated-** cause to begin.

**Agitate-** make (someone) troubled or nervous.

## S8. Ans.(a)

**Sol. Wizen-** shrivelled and wrinkled with age.

Meanings of other words are as follows:

**Shrunk-** having become or been made smaller in size.

**Dried-** free from liquid or moisture.

**Bony-** of or like bone.

## S9. Ans.(d)

**Sol.** Use 'deliberately' to fill in the blank.

Out of the four options only 'deliberately' fits in perfectly with the context of the sentence.

**Deliberately-** consciously and intentionally; on purpose.

Meanings of other words are as follows:

**Insistently-** in a continuous or repetitive way.

**Unknowingly-** without being aware of something.

**Innocently-** without guilt for a crime or offence.

## S10. Ans.(a)

**Sol. Active Voice:** In Active voice the subject is the one doing the action.

**Passive Voice:** In Passive voice the subject is the recipient of the action.

To convert active voice into passive voice the object becomes the subject and the subject becomes the object.  
Subject + verb + object → Object + 3<sup>rd</sup> form of verb + by + Subject.

The subject of the sentence is 'you', object of the sentence is 'A happy billionaire', the verb used is 'hear'.

The sentence thus formed in passive voice is: "A happy billionaire is never heard of."

## S11. Ans.(c)

**Sol. Active Voice:** In Active voice the subject is the one doing the action.

**Passive Voice:** In Passive voice the subject is the recipient of the action.

To convert active voice into passive voice the object becomes the subject and the subject becomes the object.  
Subject + verb + object → Object + 3<sup>rd</sup> form of verb + by + Subject.

The subject of the sentence is the phrase 'the most recent studies on the human body', the object of the sentence is 'the face of health sciences' and the verb used is 'alter'. Since the object is singular in nature it will take a singular verb 'is' instead of 'are'.

The sentence thus formed in passive voice is: "The face of health sciences is likely to be altered by the most recent studies on the human body."

**S12. Ans.(c)**

**Sol.** Use of 'besides' is wrong in the sentence.

**Beside-** at the side of; next to.

**Besides-** in addition to; apart from.

Though both of them sound similar they have different meanings and used in different context.

**S13. Ans.(c)**

**Sol. Tit for tat-** the infliction of an injury or insult in return for one that one has suffered.

Used in a sentence- I noticed she didn't send me a card, I think it was tit for tat because I forgot her birthday last year.

**S14. Ans.(b)**

**Sol. Succumb-** die from the effect of a disease or injury.

Synonym- yield, submit, surrender, capitulate.

Antonym- **overcame**, resist, conquer, withstand.

Meanings of other words are as follows:

**Die-** stop living.

**Surrender-** stop resisting to an enemy or opponent and submit to their authority.

**Advance-** move forwards in a purposeful way.

**Overcame-** to successfully deal with.

**S15. Ans.(c)**

**Sol.** Replace 'the better' with 'the best' to improve the sentence.

Use of comparative degree of comparison with the article 'the' is wrong.

Use of 'the' indicates that we are familiar with the person or thing that follows it and is only used with superlative degree of comparison.

**S16. Ans.(c)**

**Sol.** Option B is the most appropriate sentence to begin the sentence with.

Option D follows option B because it describes the character Jane a little further.

Option C comes after option D because it introduces three more characters related to Jane.

The correct order of sentences is BDCA.

**S17. Ans.(a)**

**Sol.** The correct spelling of the word is "Beautician" which means 'a person whose job is to give people beauty treatment'.

Meanings of other words are as follows:

**Mathematician-** A **mathematician** is someone who uses an extensive knowledge of mathematics in their work, typically to solve mathematical problems.

**Musician-** a person who plays a musical instrument, especially as a profession, or is musically talented.

**Technician-** a person employed to look after technical equipment or do practical work in a laboratory.

**S18. Ans.(c)**

**Sol.** There is no substitution required in the given sentence.

**S19. Ans.(a)**

**Sol. Perilous-** full of danger or risk.

Synonym- **dangerous**, hazardous, risky, serious.

Antonym- safe, harmless, beneficial, advantageous.

Meanings of other words are as follows:

**Dangerous-** able or likely to cause harm or injury.

**Stimulus-** a thing or event that evokes a specific functional reaction in an organ or tissue.

**Secure-** certain to remain safe and unthreatened.

**Impetus-** the force or energy with which a body moves.

**S20. Ans.(b)**

**Sol. Serendipity-** the occurrence and development of events by chance in a happy or beneficial way.

Synonyms- fluke, happenstance, blessing, **godsend**.

Antonyms- bad fortune, bad luck, misfortune, bane.

Meanings of other words are as follows:

**Sibilance-** a hissing quality of sound, or the hissing sound itself.

**Godsend-** something good that happens unexpectedly, especially at a time when it is needed.

**Catastrophe-** an event causing great and usually sudden damage or suffering, a disaster.

**Surreptitious-** kept secret, especially because it would not be approved of.

**S21. Ans.(d)**

**Sol.** Use 'to' to fill in the blank.

**To-** to indicate a goal or a direction of movement, as well as a place of arrival.

**S22. Ans.(a)**

**Sol.** Use 'down' to fill in the blank.

The phrase 'to go down that road', 'to go down that path' or 'to go down that route' mean to decide to do something in a particular way or to choose a plan of action.

**S23. Ans.(d)**

**Sol.** Use 'maintaining' to fill in the blank.

**Maintain-** cause or enable (a condition or situation) to continue.

**Meanings of other words are as follows:**

**Supply-** make (something needed or wanted) available to someone.

**Serve-** perform duties or services for (another person or an organization).

**Build-** construct (something) by putting parts or material together.

**S24. Ans.(d)**

**Sol.** Use 'less' to fill in the blank.

**The road less travelled** is a phrase which means to take an unconventional path.

**S25. Ans.(d)**

**Sol.** Use 'ultimately' to fill in the blank.

**Ultimately-** finally; in the end.

**Meanings of other words are as follows:**

**Superficially-** as to the outward appearance only; on the surface.

**Disinterestedly-** with no interest.

**Advertently-** in a careful deliberate manner.

**S26. Ans.(c)**

**Sol.** Hammer is used for striking and pulling the nail.

**S27. Ans.(d)**

**Sol.**  $10 \times 2 = 20$

$20 + 3 = 23$

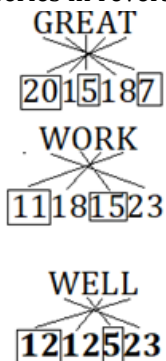
$23 \times 4 = 92$

$92 + 5 = 97$

$97 \times 6 = 582$

**S28. Ans.(d)**

**Sol.** Positioning of the Alphabets in the English alphabetical series in reverse order.

**S29. Ans.(b)**

**Sol.** Second number is four times of the first number, except in part (b).

**S30. Ans.(b)**

**Sol.**  $11 \times 1 + 2 = 13$ ,

$13 \times 2 + 3 = 29$ ,

$29 \times 3 + 4 = 91$ ,

$91 \times 4 + 5 = 369$ ,

$369 \times 5 + 6 = 1851$

**S31. Ans.(c)**

**Sol.** The front of a car is called the Bonnet, the front of a boat is called the bow, while the rear of a boat is called the stern.

**S32. Ans.(b)**

**Sol.**

**S33. Ans.(b)**

**Sol.**

CLIENT

X X X

LCEITN

FAMILY

X X X

AFIMYL

**S34. Ans.(b)**

**Sol.** -3, +3, -3 series

**S35. Ans.(b)**

**Sol.**

**S36. Ans.(a)**

**Sol.**  $14 \times 2 - 7 = 21$ ,

$34 \times 2 - 7 = 61$ ,

$47 \times 2 - 7 = 87$

**S37. Ans.(c)**

**Sol.**  $86 + 72 = 158$

$98 + 111 = 209$

$76 + 65 = 141$

**S38. Ans.(b)**

**Sol.**

**S39. Ans.(d)**

**Sol.**  $62 + 17 \times 6 - 81 = 23 \times 2 + 37 = 83$

**S40. Ans.(b)**

**Sol.** White is opposite to Green

**S41. Ans.(a)**

**S42. Ans.(c)**

**Sol.** 5-Salesman

4- Salmon

3- Salvation

2- Sanctuary

1-Sanitization

**S43. Ans.(a)**

**Sol.** 5 Cucumber,

4 Culinary,

2 Culminate,

1 Curator,

3 Curriculum

**S44. Ans.(c)**

**Sol.**  $25+5-10 \div 2 \times 4=10$

**S45. Ans.(d)**

**Sol.**

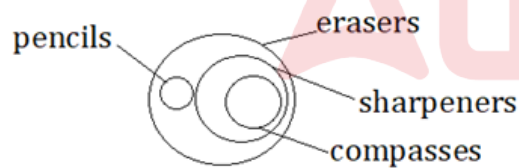
$$(2)^3 + (7)^2 = 57$$

$$(6)^3 + (3)^2 = 225$$

$$(5)^3 + (2)^2 = 129$$

**S46. Ans.(a)**

**Sol.**



**S47. Ans.(c)**

**Sol.** ABZKP/ ABYKP/ ABXKP/ ABWKP

**S48. Ans.(b)**

**Sol.**  $1724-8=1716$ , (8= cube of 2)

$1716-27=1689$ , (27 = cube of 3)

$1689-64=1625$ , (64= cube of 4)

$1625-125=1500$ , (125= cube of 5)

$1500-216= 1284$ (216= cube of 6)

**S49. Ans.(d)**

**Sol.** First number/6 = second number,

**S50. Ans.(d)**

**S51. Ans.(a)**

**Sol.** average number of participants per Olympiads from College E=  $(660)/5=132$

range of the numbers of participants in the different Olympiads from College C=  $250-80 = 170$

Difference =  $170-132= 38$

**S52. Ans.(d)**

**Sol.** Average weight of the group= 46kg

Total weight =  $46 \times 6=276$ kg

Total weight of 5 students=  $50+52+40+44+48= 234$ kg

6<sup>th</sup> student =  $276-234= 42$ kg

**S53. Ans.(a)**

**Sol.** 23a45678 is divisible by 22, means it is divisible by 11 also

$$3+4+6+8-(2+a+5+7)=0$$

$$21-14-a=7-a=0$$

$$a=7$$

**S54. Ans.(a)**

**Sol.**

$$70 \text{ CP} = 40 \text{ SP}$$

$$\frac{\text{SP}}{\text{CP}} = \frac{70}{40}$$

$$\text{Profit}\% = \frac{70-40}{40} \times 100 = 75\%$$

**S55. Ans.(a)**

**Sol.** Loss = CP-SP

Atq

$$6\text{SP} = 80\text{CP} - 80\text{SP}$$

$$86\text{SP} = 80\text{CP}$$

$$\text{SP/CP} = 80/86,$$

$$86 \text{-----} 11180$$

$$1 \text{-----} 130$$

$$80 \text{-----} 10400 = \text{SP of 80 articles}$$

$$\text{SP of 1 article} = 130 \text{ Rs.}$$

**S56. Ans.(a)**

**Sol.**

$$a + b + c = 10$$

$$ab + bc + ca = 30$$

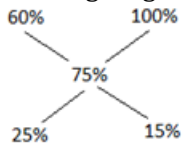
$$(a+b+c)^2 = a^2 + b^2 + c^2 + 2(ab + bc + ca)$$

$$100 = a^2 + b^2 + c^2 + 60$$

$$a^2 + b^2 + c^2 = 40$$

**S57. Ans.(d)**

**Sol.** Using alligation



5:3

5-----700 gm

3 -----420gm

**S58. Ans.(b)**

**Sol.**  $A + B = 25$

$AB = 144$

$(A+B)^2 = 625 = A^2 + B^2 + 2AB$

$2AB = 288$

$4AB = 576$

$A^2 + B^2 - 2AB = A^2 + B^2 + 2AB - 4AB = 625 - 576 = 49$

$(A-B)^2 = 49,$

$A-B = 7$

**S59. Ans.(b)**

**Sol.** LCM of (24, 80) = 240 units of work

Efficiency of A = 10 units per day

Efficiency of B = 3 units per day

B works alone for 2 days and A works alone on the 3rd day

$2 \times 3 + 10 = 16$  units

$240/16 = 15$

$15 \times 3 = 45$

**S60. Ans.(c)**

**Sol.**

SI for 1 year at 20% =

$1000 \times 20/100 = 200$  Rs

CI for 1 year compounded half yearly =  $1000 \times \frac{110}{100} \times \frac{110}{100} = 1210$

Interest = 210 Rs

Difference between CI and SI = 10 Rs.

**S61. Ans.(d)**

**Sol.**

$$Volume = \frac{2}{3} \pi r^3$$

$$= \frac{2}{3} \times \frac{22}{7} \times 21 \times 21 \times 21 = 19404 \text{ cm}^3$$

**S62. Ans.(b)**

**Sol.**

Rakesh speed =  $4x$

Mukesh speed =  $3x$

Relative speed =  $4x - 3x = x$

Time after which they will meet =  $60/x$

Distance =  $60 \times \frac{4x}{x} = 240m$

**S63. Ans.(a)**

**Sol.**

$$\frac{70 - 65}{70} \times 100 = 7.14\%$$

**S64. Ans.(c)**

**Sol.**

Cubing,  $x^2 + ax = b$ , we get

$$(x^2 + ax)^3 = (b)^3 = d$$

$$\Rightarrow x^6 + 3ax^5 + 3x^4a^2 + x^3a^3 = (b)^3$$

$$\Rightarrow x^3(x^3 + 3ax^2 + 3xa^2 + a^3) = (b)^3$$

$$\Rightarrow c = 3ax^2 + 3xa^2 + a^3$$

$$\Rightarrow c = 3a(x^2 + xa) + a^3$$

$$\Rightarrow c = 3ab + a^3$$

$$d = b^3$$

**S65. Ans.(a)**

**Sol.**

$$50000(1 - 10/100)^n = 36450$$

$$(0.9)^n = 0.729$$

$$n = 3$$

**S66. Ans.(d);**

**Sol.**

$$2945 \div 19 - 11 \times 5 = 29 + a$$

$$100 - 29 = 71$$

**S67. Ans.(c);**

**Sol.** 15---600

25----1000Rs

**S68. Ans.(b);**

**Sol.** Let the marked price =  $5x$

Selling price =  $4x = (20\% \text{ of } 5x)$

$$CP = 4x + 140$$

ATQ,

$$4x + 140 = 380$$

$$x = 60$$

$$MP = 5x = 5 \times 60 = 300 \text{ Rs}$$

**S69. Ans.(a)**

**Sol.**

Diagonal of the cube =  $\text{side} \sqrt{3}$

$\Rightarrow$  Diagonal of the cube = Diameter of the sphere

$\Rightarrow 14\sqrt{3} = 2 \text{ radius of sphere}$

Radius =  $7\sqrt{3} \text{ cm}$

$$\text{volume} = \frac{4}{3} \pi r^3 = \frac{4}{3} \pi (7\sqrt{3})^3 = 4312 \sqrt{3} \text{ cm}^3$$

**S70. Ans.(b)**

**Sol.**

$$\text{Radius of cone} = \sqrt{(10)^2 - (8)^2} = 6\text{cm}$$

$$\text{Volume of the cone} = \frac{1}{3}\pi r^2 h$$

$$\frac{1}{3} \times \frac{22}{7} \times 6 \times 6 \times 8 = 301.71 \text{ cm}^3$$

**S71. Ans.(c)**

**Sol.**  $25\% = \frac{1}{4}$

Rise of  $25\%$  means =

Price  $4x \rightarrow 5x$

Reduction in consumption

$5 \rightarrow 4$

$1 \rightarrow 1.5$

Initial consumption = 7.5 kg

Final consumption = 6kg

Increased price =  $240/6 = 40 \text{ Rs/kg}$

**S72. Ans.(c)**

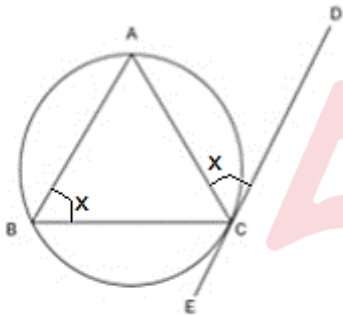
**Sol.**

$$\frac{50-45}{45} \times 100 = 11.1\%$$

**S73. Ans.(c)**

**Sol.**

$\angle ACD = \angle ABC$



**Alternate segment theorem**

**S74. Ans.(b)**

**Sol.**

$$\frac{x - x \csc^2 30^\circ}{1 + \csc^2 30^\circ} = \cos^2 60^\circ + 4 \cot^2 45^\circ - \sec^2 60^\circ$$
$$\frac{x(1-4)}{1+4} = \frac{1}{4} + 4 - 4$$
$$x = -\frac{5}{12}$$

**S75. Ans.(b)**

**Sol.**

Initial =  $100x$

Decrement of  $25\% = 75x$

$$\text{Restore its former} = \frac{100x - 75x}{75x} \times 100 = \frac{25x}{75x} \times 100 = 33\frac{1}{3}\%$$

**S76. Ans.(b)**

**Sol.** Sonu Sood wrote the autobiography entitled 'I am No Messiah'.

Sonu Sood is an Indian actor, film producer, model, humanitarian, and philanthropist who works predominantly in Hindi, Telugu, Tamil, and Kannada films. In June 2022, he launched his social media app called Explurger.

**S77. Ans.(b)**

**Sol.** Kiran Desai, an Indian Author, wrote the famous novel 'The Inheritance of Loss'.

Her novel 'The Inheritance of Loss' won the 2006 Man Booker Prize and the National Book Critics Circle Fiction Award.

**S78. Ans.(a)**

**Sol.** India's men's hockey team beat Pakistan to win a bronze medal in December 2021 at the Asian Champions Trophy Hockey 2021 in Dhaka.

The 2021 Men's Asian Champions Trophy was the sixth edition of the Men's Asian Champions Trophy.

South Korea won the Trophy for the first time by defeating Japan in the finals.

**S79. Ans.(b)**

**Sol.** Fiduciary money is money that is accepted as a medium of exchange because of the trust between the payer and the payee.

The value of fiduciary money is determined by the expectation that it will be widely accepted as a medium of exchange. It is not declared legal tender by the government, unlike fiat money, which means that people are not required by law to accept it as a form of payment.

**S80. Ans.(d)**

**Sol.** In the Game of Archery, arrows are used. Archery is the sport, practice, or skill of using a bow to shoot arrows.

Indian Archers: Dola Banerjee, Atanu Das, Abhishek Verma, Bombayla Devi, Laishram, Jayanta Talukdar, Limba Ram, and Deepika Kumari.

**S81. Ans.(d)**

**Sol.** Rajeev Janardan is an Indian classical sitar player of the Imdadkhani gharana.

Imdadkhani Gharana has been named after Imdad Khan, the founder of this Gharana.

This Gharana is also known as Etawah Gharana. The Etawah Gharana is a North Indian school of sitar and surbahar music named after a small town close to Agra where Imdad Khan lived.



**S82. Ans.(d)**

**Sol.** Tulsidas Borkar was an Indian composer and harmonium player. The Government of India awarded him the civilian honour of the Padma Shri in 2016. He died at the age of 83 on 29 September 2018.

**S83. Ans.(b)**

**Sol.** Dr. Tamilisai Soundararajan was given the additional charge of Puducherry and was sworn in as the Lt. Governor of this Union Territory in February 2021, apart from being the Governor of Telangana. Tamilisai Soundararajan is an Indian politician serving as the 2nd and current Governor of Telangana and is the Lieutenant Governor of Puducherry (Additional charge) since 18 February 2021.

**S84. Ans.(b)**

**Sol.** Aqua regia is an acidic, corrosive, and oxidative mixture consisting of three volumes of concentrated hydrochloric acid and one volume of concentrated nitric acid often used to dissolve gold and platinum. Aqua regia is a mixture of nitric acid and hydrochloric acid, optimally in a molar ratio of 1:3. It was named by alchemists because it can dissolve the noble metals gold and platinum, though not all metals.

**S85. Ans.(a)**

**Sol.** Maithili Thakur and Lydian Nadhaswaram were bestowed with Sur Jyotsna National Music Awards 2021. The Sur Jyotsna National Music Awards are aimed at singers and instrumentalists between the ages of 12 and 25 years. The Awards for 2021 were selected by the very talented jury members Roopkumar Rathod, Sunali Rathod, and Shashi Vyas.

**S86. Ans.(c)**

**Sol.** Chloroform also known as **trichloromethane** is an organic compound with the formula  $\text{CHCl}_3$ . It is a powerful anesthetic, euphoriant, anxiolytic, and sedative when inhaled or ingested.

**S87. Ans.(b)**

**Sol.** PV Sindhu was the runner-up of Yonex Swiss open 2021 women's single badminton Tournament. Carolina Marin was the Champion. The 2021 Swiss Open (officially known as the Yonex Swiss Open 2021) was a badminton tournament in St. Jakobshalle in Basel, Switzerland, from 2 to 7 March 2021.

**S88. Ans.(c)**

**Sol.** R Muthukannammal is a seventh-generation veteran Sadir dancer from the Indian State of Tamil Nadu. She is the only surviving person among the 32 Devadasis who served the deity at the Viralmalai Murugan temple. She is the last woman to have the ceremony pottukkattutal of dedicating oneself to God performed at the Viralmalai temple. In the year 2022, Govt of India honoured Muthukannammal by conferring the Padma Shri award for her contributions to the field of art.

**S89. Ans.(c)**

**Sol.** The famous Jhaveri sisters are associated with the Manipuri classical dance form. Jhaveri sisters – Nayana, Ranjana, Suverna, and Darshana. Darshana Jhaveri the youngest of the four Jhaveri sisters, is a leading Indian exponent of Manipuri dance.

**S90. Ans.(d)**

**Sol.** The Northern Plains of India are made of alluvial soil. They are formed by the interplay of the three major river systems, the Indus, Ganga, and the Brahmaputra. The Northern Plains of India are also known as the Indo-Gangetic Plain.

**S91. Ans.(b)**

**Sol.** Sodium hydroxide ( $\text{NaOH}$ ) is used to manufacture soap, rayon, paper, explosives, dyes, and petroleum products. Sodium hydroxide, also known as lye and caustic soda, is an inorganic compound with the formula  $\text{NaOH}$ .

**S92. Ans.(a)**

**Sol.** Pandit Bhimsen Guracharya Joshi was an Indian classical vocalist born in Karnataka. He is known for the *khayal* form of singing, as well as for his popular renditions of devotional music (*bhajans* and *abhangs*). Joshi belongs to the Kirana Gharana tradition of Hindustani Classical Music. He received the Bharat Ratna, India's highest civilian honour, in 2009.

**S93. Ans.(a)**

**Sol.** To boost Indian wrestling, the Uttar Pradesh government has adopted the sport and is expected to pump in an investment of Rs 170 crore in infrastructure and support to the wrestlers till the 2032 Olympics. In a similar way, Odisha Government is supporting Hockey.

**S94. Ans.(b)**

**Sol.** Beta-carotene, a red-orange pigment found in plants and fruits, especially carrots and colourful vegetables acts as a powerful antioxidant that can benefit our brain, skin, lungs, and eye Health.

The name beta-carotene is derived from the Latin name for carrot. It gives yellow and orange fruits and vegetables their rich hues. Beta-carotene is also used to color foods such as margarine.

**S95. Ans.(c)**

**Sol.** Waiting for a Visa is a 20-page autobiographical life story of B. R. Ambedkar written in the period of 1935–36. It consists of reminiscences drawn by Ambedkar, related to his experiences with untouchability, in his own handwriting.

**S96. Ans.(c)**

**Sol.** Haleem Khan is an Indian Kuchipudi dancer, performer, and movie actor, from Andhra Pradesh and presently lives in Hyderabad.

Haleem has performed more than 800 dance shows across the world, as well conducted Kuchipudi workshops overseas.

**S97. Ans.(d)**

**Sol.** The sodium fusion test, or Lassaigne's test, is used in elemental analysis for the qualitative determination of the presence of foreign elements, namely halogens, nitrogen, and sulfur, in an organic compound.

It was developed by J. L. Lassaigne.

**S98. Ans.(a)**

**Sol.** Members of the Public Accounts Committee are elected for a period of one year.

The Public Accounts Committee is a committee of selected members of parliament, constituted by the Parliament of India, for the purpose of auditing the revenue and the expenditure of the Government of India.

The Public Accounts Committee consists of not more than twenty-two members, fifteen elected by Lok Sabha, the lower house of the Parliament, and not more than seven members of Rajya Sabha, the upper house of the Parliament.

**S99. Ans.(c)**

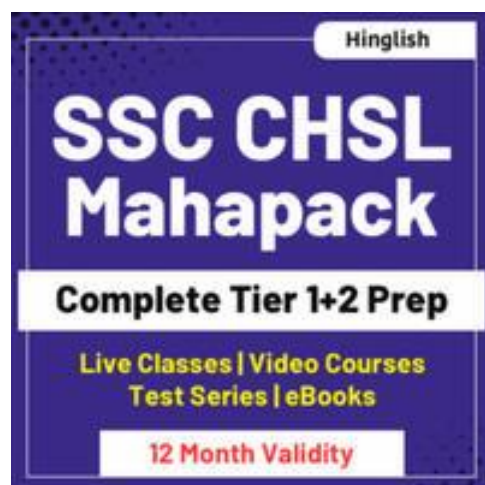
**Sol.** Guru Makar Dhwaja Darogha, was conferred the Padma Shri award in 2011, for his contribution to Chhau dance in India.

Makar Dhwaja Darogha was an Indian classical dancer and guru, known for his expertise in the classical dance form of Chhau. He died on 17 February 2014 at his residence in Saraikela in Jharkhand.

**S100. Ans.(b)**

**Sol.** Charles Elton, an English ecologist, was the first to describe the distinctive shape of the food web, which he called the pyramid of numbers.

He is associated with the development of population and community ecology, including studies of invasive organisms.



**Q1.** Select the sentence which has no spelling error.

- (a) I was licking my lips for delicoius ice cream.
- (b) There was deleceous aroma coming from the kitchen.
- (c) My mother prepares delicious chocolate cakes.
- (d) Granny said that red apples are very dilicious.

**Q2.** Select the INCORRECTLY spelt word.

- (a) Nuptial
- (b) Decaffinated
- (c) Supplementary
- (d) Noticeable

**Q3.** Select the option that expresses the given sentence in active voice.

The lock has not yet been repaired by the locksmith.

- (a) The locksmith does not repairs the lock.
- (b) The locksmith has not repaired the lock yet.
- (c) The locksmith is not repairing the lock yet.
- (d) The locksmith had not repaired the lock till then.

**Q4.** Select the most appropriate meaning of the given idiom.

A fly on the wall

- (a) A vigilant security guard
- (b) An unperceived observer
- (c) Very intelligent person
- (d) An unwelcome guest

**Q5.** Select the most appropriate option to substitute the underline segment in the given sentence.

If we do nothing to curb this pollution, I guarantee we will face the wall in the future.

- (a) face the wind
- (b) face the music
- (c) face the dark
- (d) face the stick

**Q6.** Select the most appropriate synonym of the given word.

Amble

- (a) Bustle
- (b) Stare
- (c) Wander
- (d) Trot

**Q7.** Select the most appropriate synonym of the given word.

Benevolence

- (a) Severity
- (b) Malevolence
- (c) Compassion
- (d) Impassion

**Q8.** Select the most appropriate option to fill in the blank.  
Everyone knows that the future of all life on earth will be \_\_\_\_\_ if people don't control the contamination of the environment.

- (a) dangerous
- (b) endangered
- (c) dangered
- (d) danger

**Q9.** Select the option that will improve the underlined part of the given sentence.

Do you mind me to being here while you are working?

- (a) you can mind me to be
- (b) you mind me to be
- (c) you mind me being
- (d) you will mind me to being

**Q10.** Select the most appropriate synonym of the given word.

Renounce

- (a) Condone
- (b) Hamper
- (c) Prevent
- (d) Forsake

**Q11.** Select the option that will improve the underlined part of the given sentence.

Peter is studying hard to have score in the exams.

- (a) to scoring
- (b) to have scored
- (c) to score
- (d) to scores

**Q12.** The following sentence has been split into four segments. Identify the segment that contains a grammatical error.

Each member / of the team / receive a memorabilia / after the match is over.

- (a) of the team
- (b) Each member
- (c) receive a memorabilia
- (d) after the match is over

**Q13.** Select the most appropriate option to fill in the blanks.

Besides being \_\_\_\_\_ multifaceted artist, he was \_\_\_\_\_ poet, novelist, and a painter.

- (a) a, an
- (b) an, an
- (c) a, a
- (d) an, the

**Q14.** Select the INCORRECTLY spelt word.

- (a) Xylophone
- (b) Oligopoly
- (c) Robbust
- (d) Zenith

**Q15.** The following sentence has been split into four segments. Identify the segment that contains a grammatical error.

Even though / we are quite different from each other / in our food preferences, / we both loves South Indian delicacies.

- (a) Even though
- (b) we are quite different from each other
- (c) we both loves South Indian delicacies
- (d) in our food preferences

**Q16.** Select the INCORRECTLY spelt word.

- (a) Nosy
- (b) Vennison
- (c) Yearn
- (d) Ruminare

**Q17.** Sentences of a paragraph are given below in jumbled order. Arrange the sentences in the correct order to form a meaningful and coherent paragraph.

- A. Because the educational institution's teaching staff is actively involved.
- B. Curricular or academic activities refer to activities that cover the specified courses of study.
- C. These exercises are an essential component of the overall educational curriculum.
- D. In layman's terms, 'curricular activities' are activities that take place within the classroom.

- (a) CDBA
- (b) BDCA
- (c) DABC
- (d) DBCA

**Q18.** Select the most appropriated option to fill in the blank.

The \_\_\_\_\_ crowd gave their newly elected leader a magnificent welcome.

- (a) noisy
- (b) jubilant
- (c) troublesome
- (d) melancholic

**Q19.** Select the most appropriate synonym of the highlighted word.

The equivocal nature of his comments was criticised by the officials.

- (a) certain
- (b) ambiguous
- (c) manageable
- (d) vicious

**Q20.** Select the most appropriate meaning of the given idiom.

In the same boat

- (a) To go in the same direction as someone else
- (b) To be in the same difficult situation as someone else
- (c) To share profits with someone else
- (d) To gain undue advantage with others

**Directions (21-25):** In the following passage, some words have been deleted. Fill in the blanks with the help of the options given. Select the most appropriate option for each blank.

Human beings have three basic needs: food, shelter, and (1)\_\_\_\_. All of these requirements can be met satisfactorily only if an individual has money, and for earning this money, the individual must be employed, i. e., have a/an (2)\_\_\_\_ profession. (3)\_\_\_\_, there are a lot of people throughout the globe who have been unable to obtain a job. As a direct (4)\_\_\_\_, they have a/an (5)\_\_\_\_ amount of income, and unemployment is the term used to describe this condition of joblessness.

**Q21.** Select the most appropriate option to fill in blank No.1.

- (a) power
- (b) water
- (c) clothing
- (d) money

**Q22.** Select the most appropriate option to fill in blank No.2.

- (a) suitable
- (b) authoritative
- (c) decent
- (d) temporary

**Q23.** Select the most appropriate option to fill in blank No.3.

- (a) Rightfully
- (b) Regressively
- (c) Repressively
- (d) Regrettably

**Q24.** Select the most appropriate option to fill in blank No.4.

- (a) attack
- (b) consequence
- (c) sequence
- (d) confrontation

**Q25.** Select the most appropriate option to fill in blank No.5.

- (a) average
- (b) plentiful
- (c) meagre
- (d) minor

**Q26.** In a certain code language, 'APPROACH' is written as '116161815138' and 'APPROVAL' is written as '11616181522112'. How will 'POOL' be written in that language?

- (a) 16141412
- (b) 16171712
- (c) 16151512
- (d) 16131312

**Q27.** Select the correct combination of mathematical signs to replace the \* signs and to balance the given equation.

$$14 * 5 * 41 * 76 * 35$$

- (a)  $\times, -, =, +$
- (b)  $\times, +, -, =$
- (c)  $-, +, =, \times$
- (d)  $+, \times, =, -$

**Q28.** Select the correct combination of mathematical signs to replace the \* signs and to balance the given equation.

$$78 * 3 * 12 * 5 * 59 * 17 * 44$$

- (a)  $\div, +, \times, -, +, =$
- (b)  $+, =, -, +, \times, \div$
- (c)  $\div, -, =, +, \times, -$
- (d)  $=, -, \times, +, -, \times$

**Q29.** Which of the following numbers will replace the question mark (?) in the given series?

78, 112, 64, ?, 50, 140

- (a) 134
- (b) 126
- (c) 108
- (d) 116

**Q30.** In a certain code language, "ARE" is coded as "87", and "NOT" is coded as "4197". How will "CAT" be coded in that language?

- (a) 54
- (b) 60
- (c) 57
- (d) 63

**Q31.** Select the correct combination of mathematical signs to replace the \* signs and to balance the given equation.

$$13 * 5 * 3 * 3 * 2$$

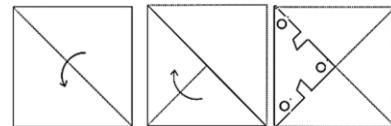
- (a)  $-, =, +, -$
- (b)  $=, +, +, \times$
- (c)  $\times, =, \times, \times$
- (d)  $+, =, \times, \times$

**Q32.** Select the option that is related to the third word in the same way as the second word is related to the first word. (The words must be considered as meaningful English words and must NOT be related to each other based on the number of letters/number of consonants/vowels in the word)

Courage : Bravery :: Sinister : ?

- (a) Auspicious
- (b) Benevolent
- (c) Ominous
- (d) Kind

**Q33.** A paper is folded and cut as shown. How will it appear when unfolded?



- (a)
- (b)
- (c)
- (d)

**Q34.** Which of the following numbers will replace the question mark (?) in the given number series?

458, 462, 446, 482, ?, 518

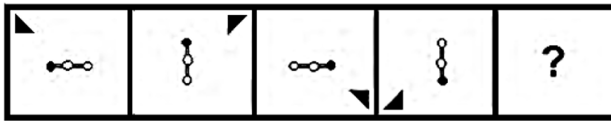
- (a) 428
- (b) 432
- (c) 546
- (d) 418



**Q35.** Select the option that represents the correct order of the given words as they would appear in an English dictionary.

1. Potential
  2. Posthumous
  3. Postbox
  4. Polymer
  5. Popular
- (a) 5,4,3,2,1  
(b) 4,5,2,3,1  
(c) 4,5,3,2,1  
(d) 1,2,3,4,5

**Q36.** Select the figure from among the given options that can replace the question mark (?) in the following series.



- (a)
- (b)
- (c)
- (d)

**Q37.** Select the option that represents the correct order of the given words as they would appear in an English dictionary.

1. Sourced
  2. Sorrow
  3. Soulful
  4. Soaking
  5. Somewhere
- (a) 5,4,3,2,1  
(b) 4,5,2,3,1  
(c) 5,4,1,2,3  
(d) 4,5,3,2,1

**Q38.** Select the correct combination of mathematical signs to sequentially replace the \* signs and to balance the given equation.

$$57*35*44*11*13*40$$

- (a) +, -, ×, ÷, =  
(b) ×, +, -, ÷, =  
(c) -, +, ×, ÷, =  
(d) +, -, ÷, ×, =

**Q39.** Two statements are given followed by two conclusions numbered I and II. Assuming the statements to be true, even if they seem to be at variance with commonly known facts, decide which of the conclusions logically follow(s) from the statements.

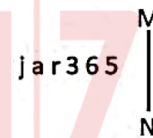
**Statements:**

Some potatoes are onions.  
Some onions are tomatoes.

**Conclusions:**

- I. Some tomatoes are potatoes.  
II. No tomato is a potato.  
(a) Only conclusion II follows  
(b) Only conclusion I follows  
(c) Either conclusion I or II follows  
(d) Both conclusions I and II follow

**Q40.** Select the correct mirror image of the given combination when the mirror is placed at MN as shown.



- (a) 50365!  
(b) 5631e!  
(c) 2931e!  
(d) 20365!

**Q41.** Which of the following letter-clusters will replace the question mark (?) in the given series to make it logically complete?

XUR, WTQ, VSP, URO, ?

- (a) TRP  
(b) TQN  
(c) SQO  
(d) SPM



**Q42.** Select the option that is related to the third number in the same way as the second number is related to the first number and the sixth number is related to the fifth number.  
 $10 : 0 :: 12 : ? :: 16 : 3$

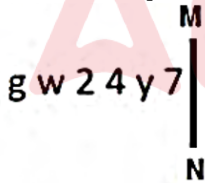
- (a) 4
- (b) 5
- (c) 3
- (d) 1

**Q43.** Select the option figure that will replace the question mark (?) in the figure given below to complete the pattern.



- (a)
- (b)
- (c)
- (d)

**Q44.** Select the correct mirror image of the given combination when the mirror is placed at MN as shown.



- (a)  $\angle \vee \nabla \Sigma w g$
- (b)  $\angle \vee \nabla \Sigma w g$
- (c)  $\nabla \vee \nabla \Sigma w g$
- (d)  $\angle \vee \nabla \Sigma w g$

**Q45.** Which of the following numbers will replace the question mark (?) in the given series?

11, 20, 43, 94, 187, 336, 555, ?

- (a) 777
- (b) 888
- (c) 858
- (d) 758

**Q46.** Study the given pattern carefully and select the number that can replace the question mark (?) in it.

First row: 73, 52, 75

Second row: 64, 41, 63

Third row: 68, 47, ?

(NOTE: Operations should be performed on the whole numbers, without breaking down the number into its constituent digits. For example, 13 – Operations on 13 such as adding/deleting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

- (a) 71
- (b) 69
- (c) 63
- (d) 65

**Q47.** Which letter cluster will replace the question mark (?) to complete the given series?

ANGE, DSBB, GXWY, ?

- (a) JBRV
- (b) JCSV
- (c) JBSV
- (d) JCRV

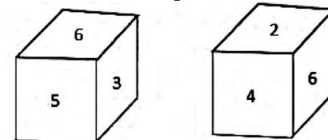
**Q48.** In a certain code language, 'RAIN' is written as '182915' and 'SUN' is written as '192214'. How will 'MOON' be written in that language?

- (a) 13161415
- (b) 13161616
- (c) 13161515
- (d) 13161414

**Q49.** The second number in the given number pairs is obtained by performing the certain mathematical operation(s) on the first number. The same operation(s) are followed in all the number pairs, EXCEPT one. Find that odd number pair.

- (a) 21 : 431
- (b) 15 : 225
- (c) 13 : 169
- (d) 12 : 144

**Q50.** Two different positions of the same dice are shown, the six faces of which are numbered from 1 to 6. Select the number that will be on the top if the dice is resting on '6'.



- (a) 3
- (b) 2
- (c) 1
- (d) 4

**Q51.** Production of different types of cars (in thousands) in a company of r years 1992 to 1996 is as follows:

Year	Type of Car				
	A	B	C	D	e
1992	160	60	84	100	76
1993	210	90	32	80	48
1994	130	30	44	95	85
1995	190	85	69	125	115
1996	260	95	120	80	120

What was the percentage of production of type A car I 1995 to its total production over the years?

- (a) 18%
- (b) 20%
- (c) 24%
- (d) 15%

**Q52.** If the volume of a sphere is  $972\pi \text{ cm}^3$ , then find its radius.

- (a) 7 cm
- (b) 6 cm
- (c) 9 cm
- (d) 8 cm

**Q53.** 15 boys and a certain number of girls appeared for a test. The average score of the boys was 26; the average score of the girls was 36, while the combined average score was 30. How many girls appeared for the test?

- (a) 10
- (b) 8
- (c) 12
- (d) 9

**Q54.** A metallic solid cuboid of dimensions  $36 \text{ cm} \times 18 \text{ cm} \times 12 \text{ cm}$  is melted and recast in the form of cubes of side 6 cm. Find the number of cubes so formed.

- (a) 38
- (b) 40
- (c) 34
- (d) 36

**Q55.** A pillar 11 m in radius is 21 m high. How much material was used to construct it? (Use  $\pi=22/7$ )

- (a)  $7996 \text{ m}^3$
- (b)  $7886 \text{ m}^3$
- (c)  $7989 \text{ m}^3$
- (d)  $7986 \text{ m}^3$

**Q56.** From the following numbers, find the number which is exactly divisible by 42.

- (a) 25232
- (b) 25242
- (c) 25244
- (d) 25212

**Q57.** Simplify  $9 - [10 - \{20 - (15 - 9 - 3)\}]$ .

- (a) 10
- (b) 8
- (c) 7
- (d) 12

**Q58.** A man purchased a cell phone for Rs.24,500 and sold it at a gain of 12.5% calculated on the selling price. The selling price of the cell phone was:

- (a) Rs.25,000
- (b) Rs.28,000
- (c) Rs.27,500
- (d) Rs.25,500

**Q59.** The foot of a ladder 25 m long is 7 m from the base of the building. If the top of the ladder slips by 4 m, then by how much distance will the foot of the ladder slide?

- (a) 9 m
- (b) 7 m
- (c) 6 m
- (d) 8 m

**Q60.** What is the third proportion to 15 and 24?

- (a)  $38\frac{4}{5}$
- (b)  $37\frac{2}{5}$
- (c)  $38\frac{2}{5}$
- (d)  $37\frac{4}{5}$

**Q61.** Simplify the expression

$$(36p^2 + 49q^2)(6p + 7q)(6p - 7q)$$

- (a)  $1296p^4 + 2401q^4$
- (b)  $36p^4 - 49q^4$
- (c)  $1296p^4 - 2401q^4$
- (d)  $36p^4 + 49q^4$

**Q62.** A retailer offers a discount scheme on shirts, that is, buy 3, get 2 free. What is the discount percentage?

- (a) 35%
- (b) 50%
- (c) 30%
- (d) 40%

**Q63.** A can complete a piece of work in 12 days, and B can complete the same work in 36 days. In how many days will both, together, complete the work?

- (a) 7
- (b) 8
- (c) 6
- (d) 9

**Q64.** A pupil multiplied a figure by  $\frac{3}{5}$  rather than  $\frac{5}{3}$ . What is the percentage error in the calculation?

- (a) 64
- (b) 47
- (c) 58
- (d) 52

**Q65.** If  $x + y + z = 0$ , then what will be the value of

$$\left(\frac{x^2}{yz}\right) + \left(\frac{y^2}{zx}\right) + \left(\frac{z^2}{xy}\right)?$$

- (a)  $\frac{3(x^2+y^2+z^2)}{xyz}$
- (b)  $x^2 + y^2 + z^2$
- (c)  $\frac{x^2y^2z^2}{x}$
- (d) 3

**Q66.** The marked price of every item being sold by a wholesaler was Rs.300. The wholesaler was offering a stock-clearance sale under which, for every three items paid for, one item was being given free. In addition to this, a further 10% discount on the amount payable on the 'Buy 3, Get 1 free' scheme price was being offered to anyone making purchases worth more than Rs.10,000. Ramesh made purchases for which this amount payable was Rs.18,000. What was the effective percentage discount that was offered to Ramesh during this transaction?

- (a) 32%
- (b) 31.5%
- (c) 32.5%
- (d) 32.75%

**Q67.** The average age of a group is increased by 4 years when a person of whose age is 32 years was replaced by a person whose age is 56. Find the number of people in the group.

- (a) 6
- (b) 7
- (c) 8
- (d) 9

**Q68.**

If  $mx^m - nx^n = 0$  then what is the value of  $\frac{1}{x^m+x^n} + \frac{1}{x^m-x^n}$  in terms of  $x^n$ ?

- (a)  $\frac{2mn}{x^n(n^2+m^2)}$
- (b)  $\frac{2m}{x^n(m^2-n^2)}$
- (c)  $\frac{2mn}{x^n(n^2-m^2)}$
- (d)  $\frac{2mn}{x^n(m^2-n^2)}$

**Q69.** 70% of students in a class are girls and 70% of the girls have chosen soccer as their favourite sport. If 98 girls have chosen soccer as their favourite sport, what is the total number of students in the class?

- (a) 180
- (b) 225
- (c) 175
- (d) 200

**Q70.** Study the given table carefully to answer the question that follows.

The following table gives the information about the populations of five different cities in the year 2020.

City	Total Population	% of Men	% of Women	% of Children
P	46800	45%	35%	20%
Q	45400	35%	50%	15%
R	42000	48%	42%	10%
S	39250	42%	42%	16%
T	46200	40%	45%	15%

In city R, among the children, the ratio of boys to girls was 2 : 3 and in city P, among

the children, the ratio of boys to girls was 5 : 4. What was the total number of girls

(among the children) in city P and city R together?

- (a) 6680
- (b) 4160
- (c) 6860
- (d) 4610

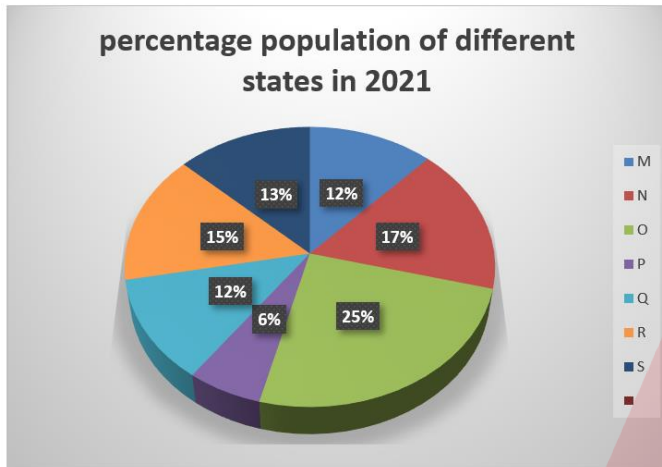
**Q71.** A loan of Rs. 8,925 is to be paid back in two equal half-yearly instalments. How much is each instalment if the interest is compounded half-yearly at 8% per annum?

- (a) Rs.4,372
- (b) Rs.4,732
- (c) Rs.4,654
- (d) Rs.4,564

**Q72.** Ramesh drives from his home at a speed of 40 km/h and reaches his college 25 minutes late. The next day he increases his speed by 10 km/h, yet he is late by 10 minutes. How far is his college from his home?

- (a) 50 km
- (b) 55 km
- (c) 45 km
- (d) 60 km

**Q73.** The following pie chart shows the percentage population of different states in the year 2021. The total population of the given states is 4879000.



The following table shows the sex wise population ratio of different states:

State	Male	Female
M	5	3
N	2	4
O	3	2
P	4	5
Q	2	3
R	4	5
S	4	5

Study the above data and answer the following question:  
What is the ratio of number of females in state P to the number of females in state S?

- (a) 2 : 7
- (b) 3 : 5
- (c) 6 : 11
- (d) 6 : 13

**Q74.** In a triangle ABC, if the three sides are  $a=5$ ,  $b=7$  and  $c=3$ , what is angle B?

- (a)  $120^\circ$
- (b)  $60^\circ$
- (c)  $90^\circ$
- (d)  $150^\circ$

**Q75.** In a class, there are 29 boys and 21 girls. The average score of boys in Maths is 89, whereas the average score of girls in maths is 91. What is the average of the whole class in maths?

- (a) 91
- (b) 89
- (c) 91.84
- (d) 89.84

**Q76.** Which of the following dances is dedicated to temples and was earlier known as Sadir?

- (a) Bharatanatyam
- (b) Kathakali
- (c) Kathak
- (d) Manipuri

**Q77.** Which level of the food chain includes millipedes, springtails, woodlice, dung flies, and slugs that feed on dead or decaying plants or animals?

- (a) Carnivores
- (b) Detritivores
- (c) Omnivores
- (d) Herbivores

**Q78.** Which of the following metals having atomic number 3 is a soft, silvery metal with very low density that reacts vigorously with water and corrodes quickly in the air?

- (a) Potassium
- (b) Sodium
- (c) Lithium
- (d) Rubidium

**Q79.** The Article of the Indian Constitution that deals with all the executive powers of the Governor is \_\_\_\_.

- (a) Article 150
- (b) Article 157
- (c) Article 154
- (d) Article 156

**Q80.** Which water body covers an area of 1,55,58,000 km<sup>2</sup> and makes up only 4.3% of the global ocean?

- (a) Atlantic Ocean
- (b) Arctic Ocean
- (c) Southern Ocean
- (d) Indian Ocean

**Q81.** In May 2021, in the MR Vijaya Bhaskar vs \_\_\_\_\_ case, the Supreme Court observed that freedom of speech and expression also extends to reporting the proceedings that happen in courts, including oral observations made by judges.

- (a) Comptroller and Auditor General
- (b) Chairperson of the Union Public Service Commission
- (c) Chief Election Commissioner
- (d) Speaker of the Lok Sabha

**Q82.** In February 2022, who was appointed as director of the National Council of Educational Research and Training (NCERT)?

- (a) Professor Hrushikesh Senapaty
- (b) Professor Dinesh Prasad Saklani
- (c) Professor MC Sharma
- (d) Professor J S Rajput

**Q83.** The Nooran Sisters are renowned for which of the following genres of Indian Music?

- (a) Qawwali
- (b) Sufi
- (c) Ghazals
- (d) Hindustani Classical

**Q84.** Muriatic acid is another name of which compound used in the production of chlorides, fertilisers, and dyes, in electroplating, and in the photographic, textile and rubber industries?

- (a) Perchloric Acid
- (b) Sulfuric acid
- (c) Hydrochloric acid
- (d) Nitric acid

**Q85.** Who among the following Indian Players wrote the Autobiography named 'Playing to Win'?

- (a) Sania Mirza
- (b) P V Sindhu
- (c) Saina Nehwal
- (d) Karnam Malleshwari

**Q86.** Yog Sunder Desai, a pioneer who ventured into the world of Indian Dance in the pre- independence era, was born on July 16, 1921 in \_\_\_\_\_.

- (a) Maharashtra
- (b) Rajasthan
- (c) Madhya Pradesh
- (d) Gujarat

**Q87.** \_\_\_\_\_ along with his wife, herself a dancer, and their son built Srjan in 1993.

- (a) Pankaj Charan Das
- (b) Kelucharan Mohapatra
- (c) Raghunath Dutta
- (d) Deba Prasad Das

**Q88.** What happens when an acid or a base is mixed with water?

- (a) Decrease in the concentration of ions ( $H_2O+/OH^-$ ) per unit volume
- (b) Decrease in the concentration of ions ( $H_3O+/OH^-$ ) per liter volume
- (c) increase in the concentration of ions ( $H_3O+/OH^-$ ) per unit volume
- (d) Decrease in the concentration of ions ( $H_3O+/OH^-$ ) per unit volume

**Q89.** As per CBI submission in Supreme Court in November 2021, eight Indian states have withdrawn their 'general consent' to the CBI for conducting investigations in their territory. Which of the following states is NOT one of them?

- (a) Kerala
- (b) Mizoram
- (c) Jharkhand
- (d) Karnataka

**Q90.** Nartthaki Nataraj, \_\_\_\_\_, becomes the first trans person to receive Padma Shri.

- (a) Kathak dancer
- (b) Odissi dancer
- (c) Manipuri dancer
- (d) Bharatanatyam dancer

**Q91.** Which of the following may be called as fiscal deficit?

- (a) Revenue expenditure – Revenue receipts
- (b) Capital expenditure – Capital receipts
- (c) Total expenditure – Total receipts other than borrowings
- (d) Revenue expenditure + Capital expenditure – Revenue receipts

**Q92.** Who is the author of the controversial novel 'Lajja'?

- (a) Arundhati Roy
- (b) Taslima Nasrin
- (c) Shobhaa De
- (d) Kiran Bedi

**Q93.** A card of which colour is used to warn a player in Football?

- (a) Red
- (b) Blue
- (c) Green
- (d) Yellow

**Q94.** Who among the following is the recipient of the top four civilian awards namely, Padma Shri, Padma Bhushan, Padma Vibhushan, and Bharat Ratna?

- (a) Ustad Bade Ghulam Ali Khan
- (b) Ustad Bismillah Khan
- (c) Pandit Ravi Shankar
- (d) Pandit Bhimsen Joshi

**Q95.** 'Train to Pakistan' was written by \_\_\_\_\_, who also served as a member of the Rajya Sabha.

- (a) Mulk Raj Anand
- (b) Anita Desai
- (c) Khushwant Singh
- (d) Vikram Seth



**Q96.** What is the dimension of the Hockey field?

- (a)  $91.4 \times 55$  m
- (b)  $100 \times 55$  m
- (c)  $90 \times 50$  m
- (d)  $100.3 \times 50$  m

**Q97.** Which vegetable contains a chemical called anthocyanin that turns pink/reddish in the presence of an acid, turns purple when neutral, and turns blue or green when mixed with alkaline substances?

- (a) Pomegranate
- (b) Red leaf lettuce
- (c) Radish
- (d) Red cabbage

**Q98.** Which of the following Hindustani vocalists from Allahabad, along with her famed contemporary Gauhar Jaan, had the privilege of performing for Emperor George V at the Delhi Darbar in 1911?

- (a) Shobha Abhyankar
- (b) Annupamaa
- (c) Allah Jilai Bai
- (d) Janki Bai

**Q99.** Mame Khan is an Indian playback and folk singer from \_\_\_\_\_.

- (a) Rajasthan
- (b) Uttar Pradesh
- (c) Kerala
- (d) Andhra Pradesh

**Q100.** In which state of India is the Seshachalam biosphere reserve located?

- (a) Tamil Nadu
- (b) Karnataka
- (c) Kerala
- (d) Andhra Pradesh





## Solutions

### S1. Ans.(c)

**Sol.** The correct spelling is, "delicious".

- **Delicious** - highly pleasant to the taste.

### S2. Ans.(b)

**Sol.** The correct spelling is 'Decaffeinated.'

Meaning of the given words:

- **Nuptial**- relating to marriage or weddings.
- **Decaffeinated**- (of coffee or tea) having had most or all of the caffeine removed.
- **Supplementary**- completing or enhancing something.
- **Noticeable**- easily seen or noticed; clear or apparent.

### S3. Ans.(b)

**Sol. Active Voice**- It denotes that the noun or pronoun that acts as the subject in the sentence is the doer of the action.

In other words, the subject performs the action or acts upon the verb.

**Passive Voice**- represents that the subject is one acted upon by the action or verb in the sentence. It can also be said that the passive voice indicates that the subject in the sentence is no longer active but passive.

- The sentence is an example of passive voice having form:
- Obj. + has/have + been + V<sub>3</sub> + by + sub.
- When it is converted into active voice, following rule must be followed:
- Sub + has/have + V<sub>3</sub> + obj.

### S4. Ans.(b)

**Sol. A fly on the wall**- an unnoticed observer of a particular situation.

**Use in a sentence**- I'd love to be a fly on the wall when those two get home!

### S5. Ans.(b)

**Sol.** Face the wall is an idiomatic expression which means euphemism to die which makes the given sentence contextually incorrect.

Replace 'face the wall' with 'face the music' which is the correct idiomatic expression that can be used.

**Face the music**- to accept responsibility for something you have done.

**Use in a sentence**- If she lied to me, then she'll just have to face the music.

### S6. Ans.(c)

**Sol. Amble**- walk or move at a slow, relaxed pace.

- **Antonyms** – go direct, run.
- **Synonyms**– **Wander**, mall, saunter, promenade, stroll, perambulation.
- Option (c) gives the same meaning as of the given word.

**Meaning of given words:**

- **Bustle**- move in an energetic and busy manner.
- **Stare**- look fixedly or vacantly at someone or something with one's eyes wide open.
- **Wander**- walk or move in a leisurely or aimless way.
- **Trot**- (with reference to a horse or other four-legged animal) proceed or cause to proceed at a pace faster than a walk, lifting each diagonal pair of legs alternately.

### S7. Ans.(c)

**Sol. Benevolence**- the quality of being well meaning; kindness.

- **Synonyms**– **Compassion**, munificence, philanthropy, sympathy, unselfishness.
- **Antonyms** – niggardliness, self-seeking, selfishness, stinginess, unkindness.
- Option (c) gives the same meaning as of the given word.

**Meaning of other words:**

- **Severity**- the fact or condition of being severe.
- **Malevolence** - the state or condition of being malevolent; hostility.
- **Compassion** - sympathetic pity and concern for the sufferings or misfortunes of others.
- **Impassion** - make passionate.

### S8. Ans.(b)

**Sol.** The word to be filled in the blank is 'endangered'.

- Endangered means (of a species) seriously at risk of extinction.
- All the other given words have different meaning and do not fit in the context of the sentence.
- Danger means the possibility of harm or death to someone.

### S9. Ans.(c)

**Sol.** Remove preposition 'to' from the sentence as given in option (c) to make the sentence grammatically and contextually correct.

- The given preposition is unnecessary.

**S10. Ans.(d)**

**Sol. Renounce-** formally declare one's abandonment of (a claim, right, or possession).

- **Synonyms-** Forsake, disinherit, relinquish, abdicate, renounce.
- **Antonyms** – maintain, own, proclaim, retain, uphold, vindicate.
- Option (d) gives the same meaning as of the given word.

**Meaning of other words:**

- **Condone** - accept (behavior that is considered morally wrong or offensive).
- **Hamper** - a basket with a carrying handle and a hinged lid, used for food, cutlery, and plates on a picnic.
- **Prevent** - keep (something) from happening.
- **Forsake** - abandon or leave.

**S11. Ans.(c)**

**Sol.** 'To have score' is a phrasal verb which means to win or get a point, goal, etc. in a competition, sport, or game. Remove the word 'have' in the given sentence to make the sentence grammatically and contextually correct.

**S12. Ans.(c)**

**Sol.** Given sentence is in simple past tense, hence V3 form of the verb will be used.

Replace 'receive' with 'received' to make the given sentence grammatically and contextually correct.

**S13. Ans.(c)**

**Sol.** The words to be filled in the blanks are 'a' and 'a' respectively.

The indefinite article (a) is used before a noun that is general or when its identity is not known.

**S14. Ans.(c)**

**Sol.** The correct spelling is 'Robust'.

Meaning of the given words:

- **Xylophone** - a musical instrument played by striking a row of wooden bars of graduated length with one or more small wooden or plastic beaters.
- **Oligopoly** - a state of limited competition, in which a market is shared by a small number of producers or sellers.
- **Robust**- strong and healthy; vigorous.
- **Zenith** - the time at which something is most powerful or successful.

**S15. Ans.(c)**

**Sol.** Replace 'loves' with 'love' to make the given sentence grammatically and contextually correct.

Subject verb agreement rule means if the subject is singular, the verb and any pronouns referring to the subject should be singular; if the subject is plural, the verb and any pronouns referring to the subject should be plural.

**S16. Ans.(b)**

**Sol.** The correct spelling is 'Venison'.

Meaning of the given words:

- **Nosy**- showing too much curiosity about other people's affairs.
- **Venison** - meat from a deer.
- **Yearn** - have an intense feeling of longing for something, typically something that one has lost or been separated from.
- **Ruminate** - think deeply about something.

**S17. Ans.(b)**

**Sol.** The proper arrangement is – BDCA.

When we look at the context of the jumbled sentence, the paragraph will start with the subject which is introduced in the statement B about which other statements are made.

So, statement B will be the first statement of the jumbled sentences.

Option B sentence is the further explanation of the subject in the statement B. Hence, will be next in the order.

Option C statement starting with a pronoun for the subject will be next in order.

Option A statement will be the last in order as it is the further explanation of the statement C.

**S18. Ans.(b)**

**Sol. Jubilant-** feeling or expressing great happiness and triumph.

The word to be filled in the blank is 'jubilant'.

**Noisy**- making or given to making a lot of noise.

**Troublesome**- causing difficulty or annoyance.

**Melancholic**- feeling or expressing pensive sadness.

All the other given words have different meaning and do not fit in the context of the sentence.

**S19. Ans.(b)**

**Sol. Criticised-** indicate the faults of (someone or something) in a disapproving way.

- **Synonyms-** ambiguous, blame, blast, censure, chide.
- **Antonyms** – praise, forgive, laud.
- Option (b) gives the same meaning as of the given word.

**Meaning of other words:**

- **Certain** - able to be firmly relied on to happen or be the case.
- **Ambiguous** - open to more than one interpretation; not having one obvious meaning.
- **Manageable** - able to be controlled or dealt with without difficulty.
- **Vicious** - deliberately cruel or violent.

**S20. Ans.(b)**

**Sol.** In the same boat- be in the same difficult circumstances as others.

**Use in a sentence-** She's always complaining that she doesn't have enough money, but we're all in the same boat.

**S21. Ans.(c)**

**Sol.** The word that can be filled in the blank is 'clothing'.

- Clothing means the things you wear to cover your body.
- As per the context, the word 'clothing' fits in very well & hence, it is the correct option.

**Meaning of other words:**

- **Power-** the ability or capacity to do something or act in a particular way.
- **Money-** a current medium of exchange in the form of coins and banknotes; coins and banknotes collectively.
- **Water-** a colorless, transparent, odorless liquid that forms the seas, lakes, rivers, and rain and is the basis of the fluids of living organisms.
- Thus, all the other given words have different meaning and do not fit in the context of the sentence.

**S22. Ans.(a)**

**Sol.** The word that can be filled in the blank is 'suitable' to make the sentence grammatically and contextually correct.

- Suitable means right or appropriate for a particular person, purpose, or situation.
- As per the context, the word 'suitable' fits in very well & hence, it is the correct option.

**Meaning of other words:**

- **Authoritative** - able to be trusted as being accurate or true; reliable.
- **Decent** - conforming with generally accepted standards of respectable or moral behavior.
- **Temporary** - lasting for only a limited period of time; not permanent.
- Thus, all the other given words have different meaning and do not fit in the context of the sentence.

**S23. Ans.(d)**

**Sol.** The word that can be filled in the blank is 'Regrettably' to make the sentence grammatically and contextually correct.

- Regrettably means unfortunately (used to express apology for or sadness at something).
- As per the context, the word 'Regrettably' fits in very well & hence, it is the correct option.

**Meaning of other words:**

- **Rightfully** - in accordance with a legitimate right or claim to property, position, or status.
- **Regressively** - returning to a previous and less advanced or worse state or way of behaving.
- **Repressively** - controlling what people do, especially by using force.
- Thus, all the other given words have different meaning and do not fit in the context of the sentence.

**S24. Ans.(b)**

**Sol.** The word that can be filled in the blank is 'consequence' to make the sentence grammatically and contextually correct.

- Consequence means a result or effect, typically one that is unwelcome or unpleasant.
- As per the context, the word 'consequence' fits in very well & hence, it is the correct option.

**Meaning of other words:**

- **Attack** - take aggressive military action against (a place or enemy forces) with weapons or armed force.
- **Sequence** - a particular order in which related things follow each other.
- **Confrontation** - a hostile or argumentative situation or meeting between opposing parties.
- Thus, all the other given words have different meaning and do not fit in the context of the sentence.

**S25. Ans.(c)**

**Sol.** The word that can be filled in the blank is 'meagre' to make the sentence grammatically and contextually correct.

- Meagre means (of something provided or available) lacking in quantity or quality.
- As per the context, the word 'meagre' fits in very well & hence, it is the correct option.

**Meaning of other words:**

- **Average** - of the usual or ordinary amount, standard, level, or rate.
- **Plentiful** - existing in or yielding great quantities; abundant.
- **Minor** - lesser in importance, seriousness, or significance.
- Thus, all the other given words have different meaning and do not fit in the context of the sentence.

**S26. Ans.(c)**

**Sol.**

16151512

Logic letters are coded according to their place value

A	P	P	R	O	A	C	H
1	16	16	18	15	1	3	8

A	P	P	R	O	V	A	L
1	16	16	18	15	22	1	12

Similarly,

P	O	O	L
16	15	15	12

**S27. Ans.(b)**

**Sol.**

$\times, +, -, =$

By using BODMAS rule and checking given options one by one:

Option B:

$$14 \times 5 + 41 - 76 = 35$$

Hence, correct option is (b)

**S28. Ans.(a)**

**Sol.**

$\div, +, \times -, + =$

Option A:

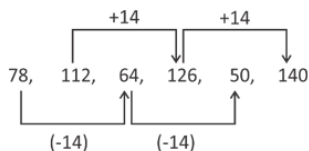
By using BODMAS rule & checking given options one by one:

$$78 \div 3 + 12 \times 5 - 59 + 17 = 44$$

Hence, correct option is (a)

**S29. Ans.(b):**

**Sol.**



**S30. Ans.(c)**

**Sol.**

'ARE' is coded as 87 and, 'NOT' is coded as '4197'

$$\Rightarrow A(1), R(18), E(5) \Rightarrow N(14), O(15), T(20)$$

$$\Rightarrow 1 \times 18 \times 5 \Rightarrow 14 \times 15 \times 20$$

$$\Rightarrow 90 - 3 = 87 \Rightarrow 4200 - 3 = 4197$$

Similarly,

'CAT' is coded as

$$\Rightarrow C(3), A(1), T(20)$$

$$\Rightarrow 3 \times 1 \times 20$$

$$\Rightarrow 60 - 3 = 57$$

**S31. Ans.(d)**

**Sol.**  $+, =, \times, \times$

By using BODMAS rule & checking given options one by one:

Option D:

$$13 \times 5 \times 3 \times 3 \times 2$$

$$\Rightarrow 13 + 5 = 3 \times 3 \times 2$$

$$\Rightarrow 18 = 18$$

$$\Rightarrow \text{LHS} = \text{RHS}$$

**S32. Ans.(c)**

**Sol.** Courage : Bravery  $\rightarrow$  courage is the synonyms of bravery

Similarly,

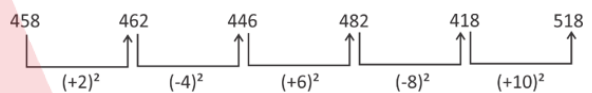
Sinister : Ominous  $\rightarrow$  sinister is the synonyms of ominous

**S33. Ans.(b)**

**S34. Ans.(d)**

**Sol.**

The pattern followed here is :



**S35. Ans (c)**

**Sol.** According to sequence in dictionary

4. Polymer
5. Popular
3. postbox
2. posthumous
1. potential

**S36. Ans.(d)**

**S37. Ans.(b)**

**Sol.** According to sequence in dictionary

4. Soaking
5. Somewhere
2. Sorrow
3. Soulful
1. Sourced

**S38. Ans.(d)**

**Sol.** By using BODMAS rule & checking given options one by one:

Option D:

$$57 \times 35 \times 44 \div 11 \times 13 \times 40$$

$$\Rightarrow 57 + 35 - 44 \div 11 \times 13 = 40$$

$$\Rightarrow 57 + 35 - 4 \times 13 = 40$$

$$\Rightarrow 92 - 52 = 40$$

$$\Rightarrow 40 = 40$$

**S39. Ans.(c)**

**Sol.**

Either conclusions I or II follows



Conclusions:

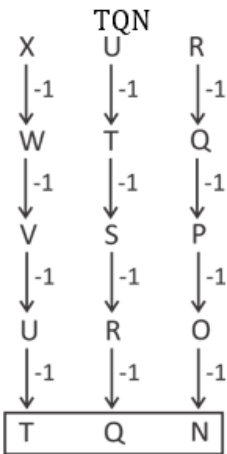
I. False

II. Can't be say

**S40. Ans.(d)**

**S41. Ans (b)**

**Sol.**



**S42. Ans.(d)**

**Sol.**

1 logic: factors of first number, then total number of 2 present in factor -1 = second no.  
10 : 0

$\Rightarrow 5 \times 2 = 10$  (number of 2 is one)

$\Rightarrow$  Then,  $1 - 1 = 0$

And,

16 : 3

$\Rightarrow 2 \times 2 \times 2 \times 2 = 16$  (no. of 2 is four)

$\Rightarrow$  then,  $4 - 1 = 3$

Similarly,

$\Rightarrow 12 : ?$

$\Rightarrow 2 \times 2 \times 3 = 12$  (No. of 2 is 2)

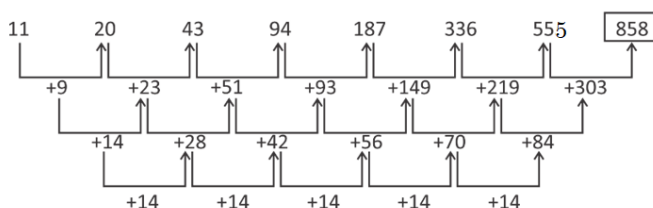
$\Rightarrow 2 - 1 = 1$

**S43. Ans.(b)**

**S44. Ans.(c)**

**S45. Ans.(c)**

**Sol.**



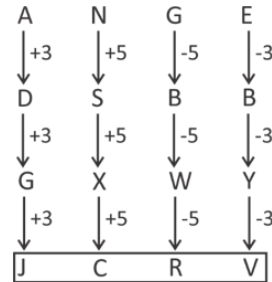
**S46. Ans.(b)**

**Sol.**

$$\begin{array}{lcl} 73, 52, 75 & \longrightarrow & 73 + 52 + 75 = 200 \\ 64, 41, 63 & \longrightarrow & 64 + 41 + 63 = 168 \\ 68, 47, 69 & \longrightarrow & 68 + 47 + 69 = 184 \end{array} \left\{ \begin{array}{l} -32 \\ +16 \end{array} \right.$$

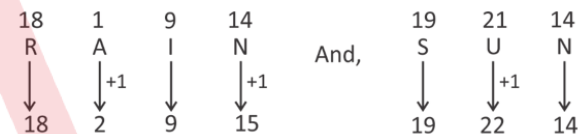
**S47. Ans.(d)**

**Sol.**



**S48. Ans.(c)**

**Sol.**



Similarly,



**S49. Ans.(a)**

**Sol.**

Logic : (First number)<sup>2</sup> = Second Number

a)  $21 : 431 \rightarrow (21)^2 = 441$

b)  $15 : 225 \rightarrow (15)^2 = 225$

c)  $13 : 169 \rightarrow (13)^2 = 169$

d)  $12 : 144 \rightarrow (12)^2 = 144$

**S50. Ans.(c)**

**Sol.**

Opposite pairs;

$3 \rightarrow 4$

$5 \rightarrow 2$

$6 \rightarrow 1$

**S51. Ans.(b)**

**Sol.**

Required result =  $\frac{190}{950} \times 100 = 20\%$

**S52. Ans.(c)****Sol.**

$$\text{Volume of sphere} = \frac{4}{3}\pi r^3$$

$$\Rightarrow \frac{4}{3}\pi r^3 = 972\pi$$

$$\Rightarrow \frac{4}{3}r^3 = 972$$

$$\Rightarrow r^3 = 729$$

$$\Rightarrow r = 9$$

So, radius = 9 cm

**S53. Ans.(a)****Sol.**

Let the number of girls be x

Then,

$$15 \times 26 + x \times 36 = 30(15 + x)$$

$$\Rightarrow 390 + 36x = 450 + 30x$$

$$\Rightarrow 6x = 60 \Rightarrow x = 10$$

So, number of girls = 10

**S54. Ans.(d)****Sol.**

Volume of cuboid = L × B × H

Volume of cube =  $a^3$

Volume of cuboid = n × volume of each cube

So,

$$36 \times 18 \times 12 = n(6)^3$$

$$\Rightarrow n = \frac{36 \times 18 \times 12}{216}$$

$$\Rightarrow n = 36$$

∴ the number of cubes so formed is 36

**S55. Ans.(d)****Sol.**

Volume of a cylinder =  $\pi r^2 h$

$$\text{Material used} = \frac{22}{7} \times 11^2 \times 21$$

$$= 22 \times 121 \times 3 = 7986$$

∴ 7986 m<sup>3</sup> material was used to construct it.

**S56. Ans.(b)****Sol.**

$$42 = 2 \times 3 \times 7$$

So, the number which is divisible by 42 is also divisible by 2, 3, 7

Now, by checking given options one by one:

25242 is divisible by 2, 3, 7

So, the number should be 25242

**S57. Ans.(a)****Sol.**

$$9 - [10 - \{20 - (15 - 9 - 3)\}]$$

By using BODMAS rule:

$$\Rightarrow 9 - [10 - \{20 - (15 - 6)\}]$$

$$\Rightarrow 9 - [10 - \{20 - 9\}]$$

$$\Rightarrow 9 - [10 - 11]$$

$$\Rightarrow 9 - [-1]$$

$$\Rightarrow 9 + 1$$

$$\Rightarrow 10$$

**S58. Ans.(b)****Sol.**

Let S.P. = x

∴ Profit = x of 12.5%

$$\Rightarrow P = 0.125x$$

$$SP = CP + P$$

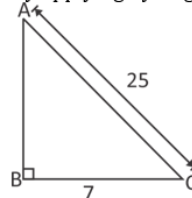
$$x = 24500 + 0.125x$$

$$\Rightarrow 0.875x = 24500$$

$$\Rightarrow x = 28000$$

**S59. Ans.(d)****Sol.**

By applying Pythagoras theorem



$$AC^2 = AB^2 + BC^2$$

$$\Rightarrow 25^2 = AB^2 + 7^2$$

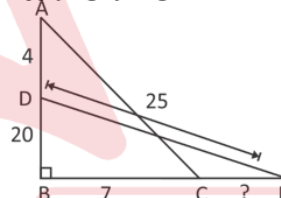
$$\Rightarrow AB^2 = 625 - 49$$

$$\Rightarrow AB = 24$$

Now, after the ladder slips by 4m

New length = 24 - 4 = 20 cm

Applying Pythagoras theorem in  $\triangle DBE$



$$DE^2 = DB^2 + BE^2$$

$$\Rightarrow 25^2 = 20^2 + BE^2$$

$$\Rightarrow BE^2 = 625 - 400$$

$$\Rightarrow BE = 15$$

So, distance slide by the ladder =  $CE = 15 - 7 = 8\text{m}$

**S60. Ans.(c)****Sol.**

let third proportion to 15 and 24 be x

$$\Rightarrow \frac{15}{24} = \frac{24}{x}$$

$$\Rightarrow x = \frac{24 \times 24}{15}$$

$$\Rightarrow x = \frac{192}{5} = 38\frac{2}{5}$$

**S61. Ans.(c)****Sol.**

$$(36p^2 + 49q^2)(6p + 7q)(6p - 7q)$$

$$= (36p^2 + 49q^2)^2 (36p^2 - 49q^2)$$

$$= (1296p^4 - 2401q^4)$$



**S62. Ans.(d)****Sol.**

Let the selling price of each shirt be  $x$   
 So, selling price of 5 =  $5x$   
 Actual amount which seller got =  $3x$   
 Discount amount =  $5x - 3x = 2x$   
 Discount % =  $\frac{2x}{5x} \times 100 = 40\%$

**S63. Ans.(d)****Sol.**

LCM of 12 and 36 = 36 (Total work)  
 Efficiency =  $\frac{\text{Total work}}{\text{Time Taken}}$   
 Efficiency of A =  $\frac{36}{12} = 3$  units/day  
 Efficiency of B =  $\frac{36}{36} = 1$  unit/day  
 Total efficiency of A & B =  $(3 + 1) = 4$  units/day  
 Required time =  $\frac{36}{4} = 9$  days

**S64. Ans.(a)****Sol.**

let the figure be  $x$   
 So, the wrong number after multiplying =  $x \times \frac{3}{5} = \frac{3x}{5}$   
 Current number =  $x \times \frac{5}{3} = \frac{5x}{3}$   
 Difference of error =  $\frac{5x}{3} - \frac{3x}{5} = \frac{25x - 9x}{15} = \frac{16x}{15}$   
 % of error =  $\left( \frac{\frac{16x}{15}}{\frac{3x}{5}} \right) \times 100 = \frac{16}{25} \times 100 = 64\%$

**S65. Ans.(d)****Sol.**

When  $x + y + z = 0$   
 $x^3 + y^3 + z^3 = 3xyz$   
 $\therefore \left( \frac{x^2}{yz} \right) + \left( \frac{y^2}{zx} \right) + \left( \frac{z^2}{xy} \right)$   
 $= \left( \frac{x^3 + y^3 + z^3}{xyz} \right)$   
 $= \left( \frac{3xyz}{xyz} \right) = 3$

**S66. Ans.(c)****Sol.**

Seller gives 4 items in price of 3 items  
 $\therefore$  SP of 4 items =  $300 \times 3 = 900$   
 SP of 1 item =  $\frac{900}{4} = 225$   
 Discount =  $300 - 225 = 75$   
 Discount % =  $\frac{75}{300} \times 100 = 25\%$   
 Now, for purchases above 10000, extra 10% discount is given  
 Ramesh paid Rs 18000  
 Actual price to pay =  $18000 \times \left( \frac{100}{90} \right) = 20000$   
 Actual amount without buy 3 get 1 free scheme =  $20000 \times \left( \frac{100}{75} \right) = 26666.67$  (approx)  
 $\therefore$  overall discount =  $26666.67 - 18000 = 8666.67$   
 Discount % =  $\frac{8666.67}{26666.67} \times 100 = 32.499\% = 32.50\%$

**S67. Ans.(a)****Sol.**

Let the number of people in the group be  $x$  and average be  $y$   
 Then,  
 $x(y + 4) = xy - 32 + 56$   
 $\Rightarrow xy + 4x = xy + 24$   
 $\Rightarrow 4x = 24$   
 $\Rightarrow x = 6$   
 So, number of people = 6

**S68. Ans.(c)****Sol.**

Given :  $mx^m - nx^n = 0$   
 $\Rightarrow mx^m = nx^n$   
 $\Rightarrow \frac{m}{n} = \frac{x^n}{x^m}$   
 So,  $m = x^n$  and  $n = x^m$   
 Now,  
 $\frac{1}{x^m + x^n} + \frac{1}{x^m - x^n} = \frac{1}{n+m} + \frac{1}{n-m}$   
 $= \frac{(n+m) + (n-m)}{(n+m)(n-m)}$   
 $= \frac{2n}{(n^2 - m^2)} [\because (a+b)(a-b) = a^2 - b^2]$   
 Value of  
 $\frac{1}{x^m + x^n} + \frac{1}{x^m - x^n}$  in terms of  $n$   
 $= \frac{2n}{(n^2 - m^2)} \times \frac{x^n}{x^n}$   
 $= \frac{2nx^n}{x^n(n^2 - m^2)} = \frac{2nm}{x^n(n^2 - m^2)} [\because x^n = m]$   
 $\therefore$  required answer is  $\frac{2mn}{x^n(n^2 - m^2)}$

**S69. Ans.(d)****Sol.**

Total girls =  $98 \times \left( \frac{100}{70} \right) = 140$   
 Total students =  $140 \times \left( \frac{100}{70} \right) = 200$

**S70. Ans.(a)****Sol.**

Number of girls in city R =  $(42000 \times 10\%) \times \left( \frac{3}{5} \right) = 2520$   
 Number of girls in city P =  $(46800 \times 20\%) \times \frac{4}{9} = 4160$   
 $\therefore$  total number of girls =  $2520 + 4160 = 6680$

**S71. Ans.(b)****Sol.**

Installments in compound interest is  
 $P = \frac{x}{\left(1 + \frac{r}{100}\right)} + \frac{x}{\left(1 + \frac{r}{100}\right)^2} + \dots + \frac{x}{\left(1 + \frac{r}{100}\right)^n}$   
 $8925 = \frac{x}{\left(1 + \frac{4}{100}\right)} + \frac{x}{\left(1 + \frac{4}{100}\right)^2}$   
 $\Rightarrow 8925 = \frac{x}{\left(\frac{26}{25}\right)} + \frac{x}{\left(\frac{676}{625}\right)}$   
 $\Rightarrow 8925 = \frac{25x}{26} + \frac{625x}{676}$   
 $\Rightarrow 8925 = \frac{1275x}{676}$   
 $\Rightarrow x = \frac{676}{1275} \times 8925$   
 $\Rightarrow x = 4732$   
 So, each installment = Rs 4732

**S72. Ans.(a)****Sol.**Distance = Time  $\times$  speed

According to question,

$$\frac{D}{40} = t + 25 \dots (i)$$

$$\frac{D}{50} = t + 10 \dots (ii)$$

By subtracting eq (ii) from eq (i) we get,

$$\frac{D}{40} - \frac{D}{50} = 15$$

$$\Rightarrow \frac{5D - 4D}{200} = \frac{1}{4} \quad (\because 1 \text{ hour} = 60 \text{ minutes})$$

$$\Rightarrow D = 50$$

So, distance = 50 km

**S73. Ans.(d)****Sol.**

Number of females in state P

$$= (4879000 \times 6\%) \times \left(\frac{5}{9}\right)$$

$$= 292740 \times \left(\frac{5}{9}\right)$$

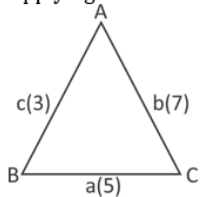
Number of females in state S

$$= (4879000 \times 13\%) \times \frac{5}{9}$$

$$= 634270 \times \left(\frac{5}{9}\right)$$

$$\text{So, ratio} = (4879000 \times 6\%) \times \left(\frac{5}{9}\right) : (4879000 \times 13\%) \times \frac{5}{9}$$

$$= 6 : 13$$

**S74. Ans.(a)****Sol.**Applying cosine formula in  $\triangle ABC$ 

$$\cos B = \left[ \frac{(5^2 + 3^2 - 7^2)}{2 \times 5 \times 3} \right]$$

$$\Rightarrow \cos B = \left[ \frac{25 + 9 - 49}{30} \right]$$

$$\Rightarrow \cos B = -\left(\frac{1}{2}\right)$$

$$\Rightarrow \cos B = \cos 120^\circ$$

$$\text{So, } B = 120^\circ$$

**S75. Ans.(d)****Sol.**

Average of the whole class in maths

$$= \frac{(29 \times 89) + (21 \times 91)}{(29 + 21)}$$

$$= \frac{2581 + 1911}{50} = \frac{4492}{50} = 89.84$$

**S76. Ans.(a)****Sol.** Bharatanatyam of Tamil Nadu in southern India has grown out of the art of dancers dedicated to temples and was earlier known as Sadir or Dasi Attam.

- It is the first of India's traditional dances to be refashioned as theatre artists and to be exhibited widely both at home and abroad.
- It is one of the eight widely recognized Indian classical dance forms, and expresses South Indian religious themes and spiritual ideas, particularly of Shaivism and in general of Hinduism.

**S77. Ans.(b)****Sol.** Detritivorous animals include millipedes, springtails, woodlice, dung flies, slugs, many terrestrial worms, sea stars, sea cucumbers, and fiddler crabs.

- Detritivores are heterotrophs that obtain nutrients by consuming detritus (decomposing plant and animal parts as well as feces).

**S78. Ans.(c)****Sol.** Lithium is a soft, silvery metal, with a very low density, which reacts vigorously with water, and quickly tarnishes in the air.**S79. Ans.(c)****Sol.** The Article of the Indian Constitution that deals with all the executive powers of the Governor is Article 154.

- Article 154 states that the executive power of the State shall be vested in the Governor and shall be exercised by him either directly or through officers subordinate to him in accordance with the Constitution.

**S80. Ans.(b)****Sol.** The Arctic Ocean is the smallest of all oceans and covers an area of 1,55,58,000 km<sup>2</sup> and makes up only 4.3% of the global ocean.

- The Arctic Ocean is the smallest and shallowest of the world's five major oceans and is known as the coldest of all the oceans.
- The Arctic Ocean is surrounded by the land masses of Eurasia (Russia and Norway), North America (Canada and the U.S. state of Alaska), Greenland, and Iceland.

**S81. Ans.(c)****Sol.** In May 2021, in the MR Vijayabhaskar vs the Chief Election Commissioner case, the Supreme Court observed that freedom of speech and expression also extends to reporting the proceedings that happen in courts, including oral observations made by judges.

**S82. Ans.(b)**

**Sol.** In February 2022, Professor of history, Dinesh Prasad Saklani was appointed as the new director of the National Council of Educational Research and Training (NCERT).

- The Central government has appointed Dinesh Prasad Saklani as director of NCERT for a period of five years or till he attains the age of 65 years.

**S83. Ans.(b)**

**Sol.** The Nooran Sisters, Sultana Nooran and Jyoti Nooran are renowned Sufi Singers.

- Born in Hoshiarpur, Punjab, to a family of Sufi musicians, they perform Sham Chaurasia Gharana classical music.
- The Nooran sisters released their first album Yaar Gariban Da in 2015.

**S84. Ans.(c)**

**Sol.** Muriatic acid is another name for Hydrochloric acid, used in the production of chlorides, fertilizers, and dyes, in electroplating, and in the photographic, textile, and rubber industries

- Hydrochloric acid, also known as muriatic acid, is an aqueous solution of hydrogen chloride.

**S85. Ans.(c)**

**Sol.** Saina Nehwal wrote the Autobiography named 'Playing to Win'.

- Saina Nehwal is an Indian professional badminton player.

**S86. Ans.(d)**

**Sol.** Yog Sunder Desai, a pioneer who ventured into the world of Indian Dance in the pre-independence era, was born on July 16, 1921, in Limbdi, Gujarat into a princely family in Gujarat.

- Yog Sunder founded his dance ensemble in 1948 in Calcutta and called it the *Indian Revival Group*.

**S87. Ans.(b)**

**Sol.** Guru Kelucharan Mohapatra along with his wife, herself a dancer, and their son built Srjan in 1993.

- Kelucharan Mohapatra is a legendary Indian classical dancer, guru, and exponent of Odissi dance, who is credited with the revival and popularizing of this classical dance form in the 20th century.
- He is the first person to receive the Padma Vibhushan from Odisha.
- Odissi is a major ancient Indian classical dance that originated in the temples of Odisha.

**S88. Ans.(d)**

**Sol.** "Mixing an acid or base with water results in a decrease in the concentration of ions( $H_3O^+/OH^-$ ) per unit volume". Such a process is called dilution.

- The process of dissolving an acid or a base in water is highly exothermic.

**S89. Ans.(d)**

**Sol.** As per CBI submission in Supreme Court in November 2021, eight Indian states have withdrawn their 'general consent' to the CBI for conducting investigations in their territory. Karnataka is NOT one of them.

- West Bengal, Maharashtra, Kerala, Punjab, Rajasthan, Jharkhand, Chhattisgarh, and Mizoram have withdrawn consent to the CBI for launching investigations in their territory.

**S90. Ans.(d)**

**Sol.** Nartaki Nataraj is a Bharatanatyam dancer. In 2019, she was awarded the Padma Shri, making her the first transgender woman to be awarded India's fourth-highest civilian award.

- Nartaki Nataraj was born in Madurai, Tamil Nadu.
- She specializes in the Tanjore-based Nayaki Bhava tradition.

**S91. Ans.(c)**

**Sol.** The difference between the total revenue and total expenditure of the government is termed fiscal deficit. It is an indication of the total borrowings needed by the government.

- While calculating the total revenue, borrowings are not included.
- Fiscal deficit = Total expenditure – Total receipts other than borrowings

**S92. Ans.(b)**

**Sol.** Lajja is a novel in Bengali by Taslima Nasrin, a writer from Bangladesh.

- The book was first published in 1993 in Bengali and was subsequently banned in Bangladesh.
- Lajja has been translated into many languages including French, Dutch, German, English, Spanish, Italian, Persian, Arabic, Assamese, Kannada, Hindi, Urdu, Marathi, Telugu, Tamil, Punjabi, Nepali Malayalam, and Sinhalese, etc.

**S93. Ans.(d)**

**Sol.** In the game of Football, a yellow card is shown by the referee to indicate that a player has been officially cautioned.

- The player's details are then recorded by the referee in a small notebook; hence a caution is also known as a "booking".
- A player who has been cautioned may continue playing in the game; however, a player who receives a second caution in a match is sent off (shown the yellow card again, and then a red card), meaning that they must leave the field immediately and take no further part in the game.

**S94. Ans.(b)**

**Sol.** Ustad Bismillah Khan is the recipient of the top four civilian awards namely, Padma Shri, Padma Bhushan, Padma Vibhushan, and Bharat Ratna.

- Bismillah Khan was an Indian musician credited with popularizing the shehnai.

**S95. Ans.(c)**

**Sol.** Khushwant Singh was an Indian author, lawyer, diplomat, journalist, and politician who wrote the well-known novel *Train to Pakistan* in 1956.

- Between 1980 and 1986 he served as a Member of Parliament in Rajya Sabha, the upper house of the Parliament of India.

**S96. Ans.(a)**

**Sol.** The dimension of the Hockey field pitch is  $91.4 \text{ m} \times 55 \text{ m}$  ( $100.0 \text{ yds} \times 60.1 \text{ yds}$ ) rectangular field. At each end is a goal of  $2.14 \text{ m}$  ( $7 \text{ ft}$ ) high and  $3.66 \text{ m}$  ( $12 \text{ ft}$ ) wide.

**S97. Ans.(d)**

**Sol.** Red cabbage contains a chemical called anthocyanin that turns pink/reddish in the presence of an acid, turns purple when neutral, and turns blue or green when mixed with alkaline substances.

- Anthocyanins are water-soluble vacuolar pigments that, depending on their pH, may appear red, purple, blue, or black.
- Food plants rich in anthocyanins include blueberry, raspberry, black rice, and black soybean.

**S98. Ans.(d)**

**Sol.** In December 1911, Gauhar Jaan was famously invited to perform at the coronation of King George V at Delhi Durbar, where she sang a duet, *Ye Hai Tajposhi Ka Jalsa*, *Mubarak Ho Mubarak Ho*, with Jankibai of Allahabad.

- Gauhar Jaan was an Indian singer and dancer from Kolkata.
- She is credited with popularising Hindustani classical music such as thumri, Dadra, kajri, and tarana during the period.
- In her lifetime, she recorded more than 600 songs from 1902 to 1920, in more than ten languages.

**S99. Ans.(a)**

**Sol.** Mame Khan is an Indian playback and folk singer from Rajasthan. Mame Khan was born in Satto, a small village near Jaisalmer in Rajasthan. He belongs to the Manganiyar community of Rajasthan.

- His father, Ustad Rana Khan was also a Rajasthani folk singer.

**S100. Ans.(d)**

**Sol.** The Seshachalam Biosphere Reserve (SLBR), designated in 2011, is located in the Seshachalam Hill-ranges of Eastern Ghats in Southern Andhra Pradesh.



**Q1.** Select the most appropriate meaning of the idiom given in bold in the following sentence.

At supper, everyone was **in high spirits**.

- (a) cheerful
- (b) drunk
- (c) nervous
- (d) anxious

**Q2.** Select the option that will improve the underlined part of the given sentence.

One's family plays a very major role to continue the trends and age-old traditions.

- (a) passive role in making the trends
- (b) futile part in making trends
- (c) significant role in enduring the trends
- (d) docile part in enduring trends

**Q3.** Select the most appropriate ANTONYM of the underlined word in the following sentence.

I felt terribly jaded after working all weekend.

- (a) glutton
- (b) refreshed
- (c) spent
- (d) vigorous

**Q4.** Select the correctly spelt word to fill in the blank.

The people from sub-continent are very \_\_\_\_\_.

- (a) superstitios
- (b) superstitious
- (c) supersticious
- (d) supersctitious

**Q5.** Select the denotation of the highlighted word.

The **guile** of the businessman is well known to his contemporaries.

- (a) Courage
- (b) Shyness
- (c) Gentleness
- (d) Slyness

**Q6.** Select the option that expresses the given sentence in active voice.

A trip to the village temple was made by Bhavani yesterday.

- (a) Bhavani was going to make a trip to the temple yesterday.
- (b) Bhavani made a trip to the village temple yesterday.
- (c) Bhavani tripped to the village temple yesterday.
- (d) Bhavani is going to make a trip to the temple today.

**Q7.** Select the most appropriate option that can substitute the underlined segment in the given sentence.

He dreams big then his friends.

- (a) bigger
- (b) more big
- (c) biggest
- (d) most big

**Q8.** Select the option that can be used as a one-word substitute for given group of words.

Unable to speak distinctly or express oneself clearly

- (a) Inane
- (b) Inapt
- (c) Inarch
- (d) Inarticulate

**Q9.** Select the most appropriate synonym of the word given in the brackets to fill in the blanks.

The university team won the match in the end with a \_\_\_\_\_(cunning) move.

- (a) brilliant
- (b) slick
- (c) random
- (d) quick

**Q10.** Select the most appropriate meaning of the given idiom.

Gear up for

- (a) Start off
- (b) Pass into
- (c) Get ready for
- (d) put on

**Q11.** Sentences of a paragraph are given below in jumbled order. Arrange the sentences in the correct order to form a meaningful and coherent paragraph.

A. The first time that I was seated behind a curtain in a during car, I felt as if the curtain had been dropped on my selfhood and could never adjust to the separate waiting rooms, separate eating places, separate rest rooms, partly because the separate was always unequal. And partly because the very idea of separation did something to my sense of dignity and self-respect.

B. One Sunday, we went to church in Simsbury, and we were the only Negroes there and on Sunday mornings I was the religious leader and spoke on any text I wanted to 107 boys.

C. Just before going to college, I went to Simsbury, Connecticut, and worked for a whole summer on a tobacco farm to earn a little school money to supplement what my parents were doing.



D. After that summer Connecticut, it was a bitter feeling going back to segregation and it was hard to understand why I could ride wherever I pleased on the train from New York to Washington and then had to change to a Jim Crow car at the nation's capital in order to continue the trip to Atlanta.

- (a) ADBC
- (b) BCDA
- (c) CBDA
- (d) CDBA

**Q12.** Select the most appropriate meaning of the given idiom.

Call upon

- (a) To adjust
- (b) To stop
- (c) To follow
- (d) To order

**Q13.** Select the option that expresses the given sentence in passive voice.

The boy kicked the ball high into the air.

- (a) The ball will be kicked high into the air by the boy.
- (b) The ball was kicked high into the air by the boy.
- (c) the boy kicks the ball high into the air
- (d) The boy had kicked the ball high into the air.

**Q14.** Select the most appropriate option to fill in the blank.

A wise king's wisdom \_\_\_\_\_ the land like the sun.

- (a) illuminates
- (b) darkens
- (c) dims
- (d) spreads

**Q15.** Select the option that can be used as a one-word substitute for the given group of words.

A small organised dissenting group within a larger one

- (a) Band
- (b) Set
- (c) Faction
- (d) Cluster

**Q16.** select the most appropriate synonym of the given word.

abundant

- (a) Abysmal
- (b) Ephemeral
- (c) Scarce
- (d) Plentiful

**Q17.** Select the option that expresses the given sentence in passive voice.

Kiara will sign all the documents tomorrow.

- (a) Kiara was to be signed by tomorrow for all the documents.
- (b) Tomorrow Kiara will be signed by all the document.
- (c) All the documents will be signed by Kiara tomorrow.
- (d) Kiara would have been signed tomorrow by all the documents.

**Q18.** Select the most appropriate ANTONYM of the highlighted word.

The **malice** he developed for all caused a lot of damage.

- (a) avarice
- (b) grace
- (c) sympathy
- (d) oppression

**Q19.** Select the INCORRECTLY spelt word.

- (a) Efficient
- (b) Layer
- (c) Committee
- (d) Feeld

**Q20.** Select the INCOTTECTLY spelt word.

- (a) Martinet
- (b) Congenital
- (c) Phlegmatic
- (d) Occular

**Directions (21-25):** In the following passage, some words have been deleted. Read the passage carefully and select the most appropriate option to fill in each blank.

Novelists when they write novels tend to take an almost god-like attitude Q(21). \_\_\_\_\_ their subject, pretending to a total comprehension of the story, a man's life, Q (22). \_\_\_\_\_ they can therefore recount as God Himself might, nothing standing between them and the naked truth, the entire story meaningful in Q(23). \_\_\_\_\_ detail. I am as little able to do this as the novelist is even though my story is more important to me than any novelist's is to him-for this is my story; it is the story of a man, not of an invented, or possible, or idealised or otherwise Q(24). \_\_\_\_\_ figure, but of a unique Q(25). \_\_\_\_\_ of flesh and blood.

**Q21.** Select the most appropriate option to fill in blank number 21.

- (a) despite
- (b) under
- (c) through
- (d) towards



**Q22.** Select the most appropriate option to fill in blank number 22.

- (a) whose
- (b) whom
- (c) who
- (d) which

**Q23.** Select the most appropriate option to fill in blank number 23.

- (a) every
- (b) self
- (c) last
- (d) present

**Q24.** Select the most appropriate option to fill in blank number 24.

- (a) callous
- (b) absent
- (c) ordinary
- (d) profuse

**Q25.** Select the most appropriate option to fill in blank number 25.

- (a) organism
- (b) being
- (c) cripple
- (d) stance

**Q26.** Select the correct combination of mathematical signs to sequentially replace the \* signs and to balance the given equation.

$$25 * 5 * 10 * 2 * 8 * 60$$

- (a)  $\div, \times, +, -, =$
- (b)  $\div, \times, -, +, =$
- (c)  $\times, \div, -, +, =$
- (d)  $-, +, \div, \times, =$

**Q27.** Select the correct combination of mathematical signs to replace the \* signs and to balance the given equation.

$$42 * 4 * 69 * 3 * 29 * 60 * 5$$

- (a)  $+, =, -, \times, \div, -$
- (b)  $\times, -, =, \times, +, \div$
- (c)  $+, \div, =, -, \times, +$
- (d)  $-, =, \times, +, \times, \div$

**Q28.** Which of the following numbers will replace the question mark (?) in the given series?

286, 303, 320, 371, 422, 507, ?

- (a) 626
- (b) 592
- (c) 602
- (d) 582

**Q29.** Select the option that represents the correct order of the given words as they would appear in an English dictionary.

- 1. Dish
- 2. Disease
- 3. Discuss
- 4. Disjoin
- 5. Disgrace

- (a) 2, 3, 1, 5, 4,
- (b) 2, 3, 5, 1, 4
- (c) 3, 2, 5, 1, 4
- (d) 3, 2, 1, 5, 4

**Q30.** Select the correct mirror image of the given combination when the mirror is placed at 'PQ' as shown.



- (a)
- (b)
- (c)
- (d)

**Q31.** Select the option that is related to the fifth term in the same way as the second term is related to the first term and the fourth term is related to the third term.

DETAILS : TEDASLI :: EMPATHY : PMEAYHT :: FORMULA : ?

- (a) ROFMALU
- (b) RFMALUO
- (c) RFOMALU
- (d) ALUMROF

**Q32.** In a certain code language, 'WORTH' is written as 'ZRRWK' and 'TRACK' is written as 'WUAFN' how will 'FAITH' be written in that language?

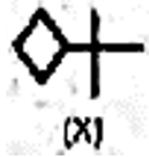
- (a) JDIWK
- (b) HDIWL
- (c) KCIVK
- (d) IDIWK

**Q33.** Select the option that is related to the fifth number in the same way as the second number is related to the first number and the fourth number is related to the third number.

52 : 5 :: 100 :: 7 :: 164 : ?

- (a) 7
- (b) 8
- (c) 11
- (d) 9

**Q34.** Select the option figure in which the given figure (X) is embedded as its part.



- (a)
- (b)
- (c)
- (d)

**Q35.** Select the option that represents the letters that, when placed from left to right in the blanks, will complete the letter series.

S \_ O Z Q T L O \_ Q U \_ O \_ Q V L O Z \_

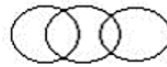
- (a) L Z L Z Q
- (b) Z L Z Q L
- (c) Z L Q L Z
- (d) L Z Q Z L

**Q36.** Select the Venn diagram that best represents the relationship between the following classes.  
Bed, Bedroom, House

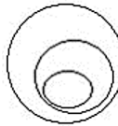
(a)



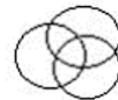
(b)



(c)



(d)



**Q37.** In a certain code language, 'SAMPLE' is written as 'RYJLGY' and 'MAPLE' is written as 'LYMHZ'. How will 'PEOPLE' be written in that language?

- (a) OCLLGL
- (b) GCLLGY
- (c) OBGLGY
- (d) OCLLGY

**Q38.** Select the correct combination of mathematical signs to replace the \* signs and to balance the given equation.

91 \* 15 \* 5 \* 18 \* 37

- (a) =, ÷, ×, +
- (b) +, =, ×, -
- (c) +, -, =, ×
- (d) -, =, +, -

**Q39.** Select the correct combination of mathematical signs to replace the \* signs and to balance the given equation.

37 \* 3 \* 21 \* 79 \* 18 \* 4 \* 19

- (a) -, =, ×, +, ÷
- (b) ×, +, -, =, ×, -
- (c) +, ×, -, =, +, -
- (d) =, -, ×, +, -, ×

**Q40.** Select the correct combination of mathematical signs to sequentially replace the \* signs and to balance the given equation.

25 \* 5 \* 10 \* 2 \* 8 \* 44

- (a) ÷, ×, +, -, =
- (b) ×, ÷, -, +, =
- (c) ÷, ×, -, +, =
- (d) -, +, ÷, ×, =

**Q41.** Which letter-cluster will replace the question mark (?) to complete the given series?

DRBZ, ABKX, ?, UVCT, RFLR

- (a) YDMC
- (b) YDBE
- (c) XUIV
- (d) XLTV

**Q42.** The second number in the given number-pairs is obtained by performing certain mathematical operation(s) on the first number. The same operation(s) are followed in all the number-pairs EXCEPT one. Find that odd number-pair.

- (a) 169 : 14
- (b) 225 : 18
- (c) 196 : 17
- (d) 256 : 19

**Q43.** Select the correct combination of mathematical signs to sequentially replace the \* signs and to balance the given equation.

$$16 * 4 * 8 * 10 * 2 * 24$$

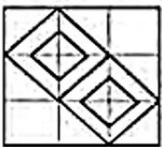
- (a)  $\div, \times, - + =$
- (b)  $-, \div, +, \times, =$
- (c)  $\times, \div, -, +, =$
- (d)  $\div, +, \times, -, =$

**Q44.** Select the option that represents the correct order of the given words as they would appear in an English dictionary.

1. Negotiation
2. Negate
3. Networking
4. Negligible
5. Newspaper

- (a) 4,2,1,3,5
- (b) 2,4,1,3,5
- (c) 2,1,4,3,5
- (d) 4,1,2,3,5

**Q45.** How many squares are there in the given figure?



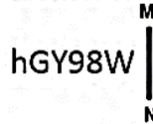
- (a) 24
- (b) 9
- (c) 12
- (d) 18

**Q46.** Select the correct combination of mathematical signs to sequentially replace the \* signs and balance the given equation.

$$57 * 35 * 44 * 11 * 13 * 74$$

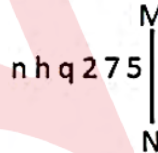
- (a)  $+, -, \times, \div, =$
- (b)  $+, -, \div, \times, =$
- (c)  $\times, +, \div, -, =$
- (d)  $-, +, \div, \times, =$

**Q47.** Select the correct mirror image of the given combination when the mirror is placed at MN as shown.



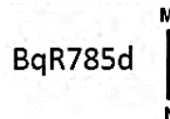
- (a) 8eY9d
- (b) W8eY9
- (c) W8eY9d
- (d) 8WeY9d

**Q48.** Select the correct mirror image of the given combination when the mirror is placed at MN as shown.



- (a) 5 7 2 p d n
- (b) 2 7 2 p q u
- (c) 2 7 2 p d n
- (d) 2 7 2 p q u

**Q49.** Select the correct mirror image of the given combination when the mirror is placed at MN as shown.



- (a) 287RpB
- (b) 2b87RpB
- (c) b287RpB
- (d) b287Rp

**Q50.** Select the option that is related to the fifth term in the same way as the second term is related to the first term and the fourth term is related to the third term.

AMOUNT : MOUNT :: BRIDGE : RIDGE :: BRIGHT : ?

- (a) RIGHT
- (b) SIGHT
- (c) KIGHT
- (d) NIGHT

**Q51.** If the volume of a cube is  $27m^3$  find its surface area (in  $m^2$ ).

- (a) 9
- (b) 27
- (c) 54
- (d) 24

**Q52.** A trader marks his goods at 45% above the cost price. He offers a discount of 21% to his customers. What is his percentage profit (rounded off to the nearest integer)?

- (a) 12%
- (b) 18%
- (c) 14%
- (d) 15%

**Q53.** Which of the following numbers is divisible by 7?

- (a) 3739
- (b) 3661
- (c) 3659
- (d) 3915

**Q54.** A new mobile is introduced into the market and is marked at 25% above its original cost price. What discount should be given on the marked price to gain a profit of 20%?

- (a) 2.50%
- (b) 5%
- (c) 4%
- (d) 10%

**Q55.** If  $2a + b = 10$ ,  $2ab = 9$ , and  $2a > b$ , then find the value of  $2a - b$ .

- (a) 12
- (b) 6
- (c) 8
- (d) 10

**Q56.** Find the mean proportion of 3 and 27.

- (a) 5
- (b) 10
- (c) 6
- (d) 9

**Q57.** Shovik purchases two types of sugar: the first type at Rs.45 per kg and the second type at Rs.80 per kg. In what ratio should Shovik blend the first type of sugar with the second type so that, by selling each kg of the blended sugar at Rs.72 per kg, he makes a profit of 20%?

- (a) 4 : 3
- (b) 5 : 4
- (c) 3 : 4
- (d) 3 : 2

**Q58.** Find the volume of a hemisphere whose diameter is 6 cm. (Take  $\pi = 22/7$ )

- (a)  $144\pi \text{ cm}^3$
- (b)  $48\pi \text{ cm}^3$
- (c)  $18\pi \text{ cm}^3$
- (d)  $36\pi \text{ cm}^3$

**Q59.** The value of  $11 \div [1 + 1 \div \{1 + 1 \div (1 + 1 \div 3)\}]$  is:

- (a) 1
- (b) 7
- (c) 9
- (d) 11

**Q60.** If  $a + b = 12$  and  $ab = 35$ , find the value of  $a^4 + b^4 - 10^3$ ?

- (a) 2226
- (b) 2026
- (c) 2126
- (d) 1226

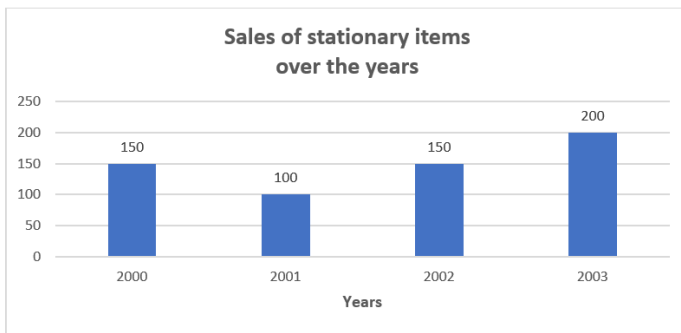
**Q61.** The table below gives the numbers of seats won in the local body elections in a state by different political parties in the years 2019 and 2014.

Name of the Party	Result in 2019	Result in 2014
AGP	303	282
Con Party	52	43
CMK	23	0
AICT	22	34
Kanta Dal	16	2
Shiv party	18	18

Find the ratio of the total number of seats won by Con party in 2014, Kanta Dal in 2019, and the Shiv Party in 2019 taken together to the number of seats won by AGP in 2014.

- (a) 77 :: 282
- (b) 77 : 141
- (c) 283 : 77
- (d) 145 : 77

**Q62.**



Find the approximate percentage increase in sales from 2002 to 2003?

- (a) 33.3%
- (b) 19.4%
- (c) 54%
- (d) 24.45%

**Q63.** Inside a triangle ABC, a straight line parallel to BC intersects AB and AC at the points P and Q, respectively. If  $AB = 6PB$ , then  $PQ : BC$  is \_\_\_\_\_.

- (a) 2 : 6
- (b) 3 : 4
- (c) 5 : 4
- (d) 5 : 6

**Q64.** The heights of 48 students of a class are shown in the following table.

Heigh (in cm)	No. of students
Up to 150	12
Up to 155	16
Up to 160	18
Up to 165	33
Up to 170	48

What is the percentage of students whose height is more than 160 cm?

- (a) 37.5%
- (b) 66.6%
- (c) 33.3%
- (d) 62.5%

**Q65.** Simplify:

$$3p - [3p - \overline{p + q} - \{3p - (p - \overline{q - p})\}]$$

- (a)  $3p - q$
- (b)  $p + 2q$
- (c)  $3p + 2q$
- (d)  $2p + 2q$

**Q66.** In a test, the average score of 50 students is 66. Out of the total students, 40% are girls and the rest are boys. The average score of the boys is 20% less than that of the girls. What is the average score of the girls?

- (a) 70
- (b) 80
- (c) 75
- (d) 65

**Q67.** If base radius and height of a cylinder are 4 cm and 5 cm, respectively, then find the curved surface area of the cylinder [use  $\pi = 3.14$ ].

- (a)  $125.6 \text{ cm}^2$
- (b)  $138 \text{ cm}^2$
- (c)  $129.8 \text{ cm}^2$
- (d)  $119.6 \text{ cm}^2$

**Q68.**  $\sin(-A) = ?$

- (a)  $\cos A$
- (b)  $-\cos A$
- (c)  $-\sin A$
- (d)  $\sin A$

**Q69.** The population of a village is 9,000. If the annual birth rate is 12.5% and the annual death rate is 2.5%, calculate the population after three years.

- (a) 12256
- (b) 11979
- (c) 10959
- (d) 10755

**Q70.** In an election between two candidates, Ravi gets 65% of total valid votes. If total votes were 6000, what is the number of valid votes that the other candidate Sushil gets, if 25% of total votes were invalid?

- (a) 1775
- (b) 1625
- (c) 1575
- (d) 1525

**Q71.** Find the average of the following data:

1, 2, 3, 5, 17, 21 and 28

- (a) 13
- (b) 11
- (c) 9
- (d) 12

**Q72.** A and B together can do a piece of work in 12 days, while A alone can complete the same work in 18 days. How long will B alone take to complete the work?

- (a) 6 days
- (b) 12 days
- (c) 24 days
- (d) 36 days

**Q73.** A man can row 5 km/h in still water. If the speed of the current is 2.5 km/h, it takes 4 hours more in upstream than in the downstream for the same distance. The distance is:

- (a) 10.5 km
- (b) 15 km
- (c) 7.5 km
- (d) 12 km

**Q74.** A man P purchased a land for Rs. 4,32,000 on the outskirts of a city. Due to some reason, its value depreciated at 25% per annum and he sold it to Q after 2 years. At this time, the city expanded and new projects of infrastructures started coming up. As a result of the expansion, there was an appreciation of real estate prices at the rate of 50%. What would be the value (in Rs.) of the land after 2 years, from the time Q bought the land from P?

- (a) Rs. 5,46,750
- (b) Rs. 5,57,450
- (c) Rs. 5,76,450
- (d) Rs. 6,05,070

**Q75.** A shopkeeper marks up his goods by 30% and then gives a discount of 10% on the marked price. Apart from this, he uses a faulty balance which reads 1 kg for 870g. What is his net profit percentage?

- (a) 38.42%
- (b) 34.84%
- (c) 34.48%
- (d) 38.24%

**Q76.** Dr. Sunanda Nair is recognized as a \_\_\_\_\_ performer, teacher, and proponent.

- (a) Mohiniyattam
- (b) Kathak
- (c) Kuchipudi
- (d) Kathakali

**Q77.** Which of the following books is NOT written by Arundhati Roy?

- (a) Capitalism
- (b) Private Life of An Indian Prince
- (c) The God of Small Things
- (d) An Ordinary Person's Guide to Empire

**Q78.** Which of the following has launched the 'DBT-Star College Mentorship Programme' in November 2021?

- (a) Ministry of Science and Technology
- (b) Ministry of Tourism
- (c) Ministry of Heavy Industries and Public Enterprises
- (d) Ministry of Shipping

**Q79.** Isopentane, also called \_\_\_\_\_, is a branched-chain saturated hydrocarbon with the chemical formula  $C_5H_{12}$ .

- (a) dimethylbutane
- (b) isobutane
- (c) 2-methyl butane
- (d) butadiene

**Q80.** Which of the following countries will jointly organize the FIH Women's Hockey World Cup from 1 to 17 July 2022?

- (a) Spain and Germany
- (b) Spain and Netherlands
- (c) India and Sri Lanka
- (d) India and Pakistan

**Q81.** Who among the following won Arjuna Award 2021 in Kabaddi discipline?

- (a) Ajay Thakur
- (b) Tejaswini Bai V
- (c) Sandeep Narwal
- (d) Jasvir Singh

**Q82.** Padma Shri awardee Gopal Prasad Dubey was awarded for his contribution to which of the following dances?

- (a) Sattriya
- (b) Panthi
- (c) Chhau
- (d) Mohiniyattam

**Q83.** Where is sodium located on the periodic table?

- (a) Bottom of the table
- (b) Top period
- (c) On the right side
- (d) On the left side

**Q84.** Recently, some mail channels have been introduced to facilitate quick delivery of mail in large towns and cities in India. Which of the following is NOT a part of these mail channels?

- (a) State Channel
- (b) Rajdhani Channel
- (c) Metro Channel
- (d) Green Channel



**Q85.** Who is the first Indian musician to win the Oscar award for Best Original Score?

- (a) Bhanu Athaiya
- (b) Resul Pookutty
- (c) Mehboob Khan
- (d) A.R. Rahman

**Q86.** What is the position of non-metals in the periodic table?

- (a) Bottom of the table
- (b) On the right side
- (c) On the left side
- (d) Top period

**Q87.** Which of the following is the youngest percussionist to be awarded Padma Shri and Padma Bhushan awards by the Government of India?

- (a) T H Vinakram
- (b) Sivamani
- (c) Sarvar Sabri
- (d) Zakir Hussain

**Q88.** Which cell theory proved that the quasi-fluid nature of lipids enables lateral movement of proteins within the overall bilayer?

- (a) Cell theory
- (b) Fluid mosaic model
- (c) Model of Golgi bodies
- (d) Vacuole theory

**Q89.** Identify the correct statement in relation to ampere.

- (a) One ampere is constituted by the flow of one coulomb of charge per minute
- (b) One ampere is constituted by the flow of two coulomb of charge per second
- (c) One ampere is constituted by the flow of one coulomb of charge per second
- (d) One ampere is constituted by the flow of a half coulomb of charge per second

**Q90.** In the absence of the Speaker and the Deputy Speaker of Lok Sabha, who presides the joint sitting of the two houses of Parliament?

- (a) Chairman of Rajya Sabha
- (b) Any senior member of Rajya Sabha
- (c) Deputy Chairman of Rajya Sabha
- (d) Any senior member of Lok Sabha

**Q91.** Shamshad Begum, one of the first women to sing playback for Hindi movies, was conferred with the prestigious OP Nayyar Award for her contribution to Hindi film Music in the year \_\_\_\_.

- (a) 2001
- (b) 2009
- (c) 2012
- (d) 2005

**Q92.** Who among the following Indian classical musicians was the very first to be presented with the Bharat Ratna, India's highest civilian honour?

- (a) Madurai Shanmukhavadivu Subbulakshmi
- (b) Bismillah Khan
- (c) Lata Mangeshkar
- (d) Ravi Shankar

**Q93.** The Health Minister relaunched the intensified version 4.0 of the largest global inoculation drive in February 2022. What is the name of this Mission which covers crores of pregnant women and children?

- (a) Mission Arogya
- (b) Mission Shakti
- (c) Mission Indradhanush
- (d) Mission Suraksha

**Q94.** Which of the following Marathi writers was the author of the autobiography 'Majya Jalmachi Chittarkatha'?

- (a) Kusumagraj
- (b) Sunita Deshpande
- (c) Shivaji Sawant
- (d) Shantabai Krushnaji Kamble

**Q95.** Usually, which year of a series of years in an economic index is called the base year?

- (a) First year
- (b) Twentieth year
- (c) Tenth year
- (d) Last year

**Q96.** Identify the terrestrial planet from among the following.

- (a) Uranus
- (b) Jupiter
- (c) Mercury
- (d) Neptune

**Q97.** Meenakshi Srinivasan received the Ustad Bismillah Khan Yuva Puraskar 2011 for which of the following dance forms?

- (a) Sattriya
- (b) Mohiniyattam
- (c) Kuchipudi
- (d) Bharatanatyam

**Q98.** When was the Sri Shanmukhananda National Eminence Award set up?

- (a) 2001
- (b) 2002
- (c) 2000
- (d) 2003

**Q99.** 'The God of Small Things', a winner of the 1997 Booker Prize, is the debut novel of which of the following Indian writers?

- (a) Jhumpa Lahiri
- (b) Kiran Desai
- (c) Anita Desai
- (d) Arundhati Roy

**Q100.** What is the name of the track and field event in the following given figure:



- (a) Discus Throw
- (b) Javelin Throw
- (c) Putting the Shot
- (d) Hammer Throw



## Solutions

### S1. Ans.(a)

**Sol. In high spirits** - lively and cheerful behavior or mood.

- **Use in a sentence**- The team returned in high spirits

### S2. Ans.(c)

**Sol.** Out of all the given options, only option (c) improves the underlined part. All other options are changing the context of the given sentence.

### S3. Ans.(b)

**Sol. Jaded**- bored or lacking enthusiasm, typically after having had too much of something.

- **Synonyms**- exhausted, fatigued, wearied.
- **Antonyms**- **refreshed**, insatiable, unsatiable, insatiate, rested.
- Option (b) gives the opposite meaning as of the given word.

#### Meaning of given words:

- **Glutted** - supply or fill to excess.
- **Refreshed** - having regained strength or energy.
- **Spent** - having been used and unable to be used again.
- **Vigorous** - strong, healthy, and full of energy.

### S4. Ans.(b)

**Sol.** The correct spelling is, "superstitious".

- **Superstitious** - having or showing a belief in superstitions.

### S5. Ans.(d)

**Sol. Guile**- sly or cunning intelligence.

- **Synonyms**- ruse, stratagem, subterfuge, trick, wile, slyness.
- **Antonyms** - openness, simplicity, sincerity, truth.
- Option (d) portrays the same meaning as that of the given group of words & hence it is the correct choice.

#### Meaning of other words:

- **Courage** - the ability to do something that frightens one; bravery.
- **Shyness** - the quality or state of being shy.
- **Gentleness** - the quality of being kind, tender, or mild-mannered.
- **Slyness** - behavior that is clever in order to deceive people and get what you want.

### S6. Ans.(b)

**Sol. Active Voice**- It denotes that the noun or pronoun that acts as the subject in the sentence is the doer of the action. In other words, the subject performs the action or acts upon the verb.

**Passive Voice**- represents that the subject is one acted upon by the action or verb in the sentence. It can also be said that the passive voice indicates that the subject in the sentence is no longer active but passive.

- The sentence is an example of passive voice having form:
- Obj. + was/were + V3 + by + obj.
- When it is converted into active voice, following rule must be followed:
- Sub + V<sub>2</sub> + obj.

### S7. Ans.(a)

**Sol.** Comparative degree of 'big' that is 'bigger' will be used in the given sentence to make it grammatically and contextually correct.

- The comparative degree is the first level of comparison that can be used to evaluate and differentiate the similar quality or qualities possessed by the subjects in a particular context.

### S8. Ans.(d)

**Sol. Meaning of the given words:**

- **Inane**- lacking sense or meaning; silly.
- **Inapt**- not suitable or appropriate in the circumstances.
- **Inarch**- graft (a plant) by connecting a growing branch without separating it from its parent stock.
- **Inarticulate** - unable to express one's ideas or feelings clearly or easily.
- Option (d) portrays the same meaning as that of the given group of words & hence it is the correct choice.

### S9. Ans.(b)

**Sol. Cunning**- having or showing skill in achieving one's ends by deceit or evasion.

- **Synonyms**- ruse, stratagem, subterfuge, trick, **slick**.
- **Antonyms** - innocence, openness, simplicity, sincerity, truth.
- Option (b) portrays the same meaning as that of the given group of words & hence it is the correct choice.

#### Meaning of other words:

- **Brilliant**- exceptionally clever or talented.
- **Slick**- done or operating in an impressively smooth and efficient way.
- **Random**- made, done, or happening without method or conscious decision.
- **Quick**- moving fast or doing something in a short time.

**S10. Ans.(c)****Sol. Gear up for-** To get ready for something.

- **Use in a sentence-** The investors geared up for the merger of the two companies.

**S11. Ans.(c)****Sol.** The proper arrangement is – CBDA.

- When we look at the context of the jumbled sentence, the paragraph will start with the subject which is introduced in the statement C about which other statements are made.
- So, statement C will be our first statement of the jumbled sentences.
- Option B sentence starts with 'we' which is a pronoun used for the subject in the statement D and is the further extension of the statement C. So, will be next in the order.
- Option A will be the last in order.
- Option (c) fits perfectly in context and makes the jumbled sentences grammatically correctly. Therefore, the correct arrangement would be CBDA.

**S12. Ans.(d)****Sol. Call upon-** to formally invite or ask somebody to speak, etc.

- **Use in a sentence-** I now call upon the chairman to address the meeting.

**S13. Ans.(b)****Sol. Active Voice-** It denotes that the noun or pronoun that acts as the subject in the sentence is the doer of the action. In other words, the subject performs the action or acts upon the verb.**Passive Voice-** represents that the subject is one acted upon by the action or verb in the sentence. It can also be said that the passive voice indicates that the subject in the sentence is no longer active but passive.

- The sentence is an example of active voice having form:
- Sub. + V2 + obj.
- When it is converted into passive voice, following rule must be followed:
- Passive sub + was/were + V3 + by + passive obj.

**S14. Ans.(a)****Sol.** The word to be filled in the blank is 'illuminates.'

- Illuminates means make (something) visible or bright by shining light on it; light up.
- Hence, while comprehending the given sentence option (a) makes the sentence grammatically and contextually correct.
- All the other given words have different meaning and do not fit in the context of the sentence.

**S15. Ans.(c)****Sol. Meaning of the given words:**

- **Band-** a flat, thin strip or loop of material, used as a fastener, for reinforcement, or as decoration.
- **Set-** put, lay, or stand (something) in a specified place or position.
- **Fraction-** a small or tiny part, amount, or proportion of something.
- **Cluster-** a group of similar things or people positioned or occurring closely together.
- Option (c) portrays the same meaning as that of the given group of words & hence it is the correct choice.

**S16. Ans.(d)****Sol. Abundant-** relating to matters of fact or practical affairs often to the exclusion of intellectual or artistic matters.

- **Synonyms-** exuberant, profuse, ample, liberal, plentiful, **plentiful**.
- **Antonyms** – scarce, rare.
- Option (d) portrays the same meaning as that of the given group of words & hence it is the correct choice.

**Meaning of other words:**

- **Abysmal** - extremely bad; appalling.
- **Ephemeral** - lasting for a very short time.
- **Scarce** - (especially of food, money, or some other resource) insufficient for the demand.
- **Plentiful** - existing in or yielding great quantities; abundant.

**S17. Ans.(c)****Sol. Active Voice-** It denotes that the noun or pronoun that acts as the subject in the sentence is the doer of the action. In other words, the subject performs the action or acts upon the verb.**Passive Voice-** represents that the subject is one acted upon by the action or verb in the sentence. It can also be said that the passive voice indicates that the subject in the sentence is no longer active but passive.

- The sentence is an example of active voice having form:
- Sub + shall/will + V1 + obj.
- When it is converted into passive voice, following rule must be followed:
- Obj + shall/will + be+ V3 + by + sub.

**S18. Ans.(c)****Sol. Malice-** the desire to harm someone; ill will.

- **Synonyms-** malevolence, malignity, rancour, spite.
- **Antonyms-** kindness, kindness, regard, **sympathy**.
- Option (c) gives the opposite meaning as of the given word.

### Meaning of given words:

- **Avarice**- extreme greed for wealth or material gain.
- **Grace**- smoothness and elegance of movement.
- **Sympathy**- feelings of pity and sorrow for someone else's misfortune.
- **Oppression**- prolonged cruel or unjust treatment or exercise of authority.

### S19. Ans.(d)

**Sol.** The correct spelling is 'Field'.

Meaning of the given words:

- **Efficient** - (of a system or machine) achieving maximum productivity with minimum wasted effort or expense.
- **Layer** - a sheet, quantity, or thickness of material, typically one of several, covering a surface or body.
- **Committee** - a group of people appointed for a specific function by a larger group and typically consisting of members of that group.
- **Field**- an area of open land, especially one planted with crops or pasture, typically bounded by hedges or fences.

### S20. Ans.(d)

**Sol.** The correct spelling is 'Oscular'.

Meaning of the given words:

- **Martinet** - a person who demands complete obedience; a strict disciplinarian. **Congenital** - (of a disease or physical abnormality) present from birth.
- **Phlegmatic** - (of a person) having an unemotional and stolidly calm disposition.
- **Oscular** - relating to kissing.

### S21. Ans.(d)

**Sol.** The word that can be filled in the blank is 'towards'.

- Towards means in the direction of.
- As per the context, the word 'towards' fits in very well & hence, it is the correct option.

**Meaning of other words:**

- **Despite** - without being affected by; in spite of.
- **Under** - extending or directly below.
- **Through** - moving in one side and out of the other side of (an opening, channel, or location).
- Thus, all the other given words have different meaning and do not fit in the context of the sentence.

### S22. Ans.(d)

**Sol.** The word that can be filled in the blank is 'which' to make the sentence grammatically and contextually correct.

- Which is used for asking for information specifying one or more people or things from a definite set.
- As per the context, the word 'which' fits in very well & hence, it is the correct option.

**Meaning of other words:**

- **Whose** - belonging to or associated with which person.
- **Whom** - used instead of 'who' as the object of a verb or preposition.
- **Who** - what or which person or people.
- Thus, all the other given words have different meaning and do not fit in the context of the sentence.

### S23. Ans.(a)

**Sol.** The word that can be filled in the blank is 'every' to make the sentence grammatically and contextually correct.

- Every is used before a singular noun to refer to all the individual members of a set without exception.
- As per the context, the word 'every' fit in very well & hence, it is the correct option.

**Meaning of other words:**

- **Self** - a person's essential being that distinguishes them from others, especially considered as the object of introspection or reflexive action.
- **Present** - existing or occurring now.
- Thus, all the other given words have different meaning and do not fit in the context of the sentence.

### S24. Ans.(b)

**Sol.** The word that can be filled in the blank is 'absent' to make the sentence grammatically and contextually correct.

- Absent means not present in a place, at an occasion, or as part of something.
- As per the context, the word 'absent' fits in very well & hence, it is the correct option.

**Meaning of other words:**

- **Callous** - showing or having an insensitive and cruel disregard for others.
- **Ordinary** - with no special or distinctive features; normal.
- **Profuse** - (especially of something offered or discharged) very plentiful; abundant.
- Thus, all the other given words have different meaning and do not fit in the context of the sentence.



**S25. Ans.(b)**

**Sol.** The word that can be filled in the blank is 'being' to make the sentence grammatically and contextually correct.

- Being means the nature or essence of a person.
- As per the context, the word 'being' fits in very well & hence, it is the correct option.

**Meaning of other words:**

- **Organism** - an individual animal, plant, or single-celled life form.
- **Cripple** - cause severe and disabling damage to; deprive of the ability to function normally.
- **Stance** - the way in which someone stands, especially when deliberately adopted (as in cricket, golf, and other sports); a person's posture.
- Thus, all the other given words have different meaning and do not fit in the context of the sentence.

**S26. Ans.(d)**

**Sol.**

By using BODMAS Rule and Checking given option one by one:

$$\begin{aligned}
 & 25 * 5 * 10 * 2 * 8 * 60 \\
 \Rightarrow & 25 - 5 + 10 \div 2 \times 8 = 60 \\
 \Rightarrow & 25 - 5 + 5 \times 8 = 60 \\
 \Rightarrow & 25 - 5 + 40 = 60 \\
 \Rightarrow & 65 - 5 = 60 \\
 \Rightarrow & \text{LHS} = \text{RHS}
 \end{aligned}$$

**S27. Ans.(b)**

**Sol.**

By using BODMAS Rule and Checking given options one by one:

$$\begin{aligned}
 & 42 * 4 * 69 * 3 * 29 * 60 * 5 \\
 \Rightarrow & 42 \times 4 - 69 = 3 \times 29 + 60 \div 5 \\
 \Rightarrow & 168 - 69 = 87 + 12 \\
 \Rightarrow & 99 = 99 \\
 \Rightarrow & \text{LHS} = \text{RHS}
 \end{aligned}$$

**S28. Ans.(b)**

**Sol.**

Logic : Multiples of 18 are added twice to get next term.

**S29. Ans.(c)**

**Sol.**

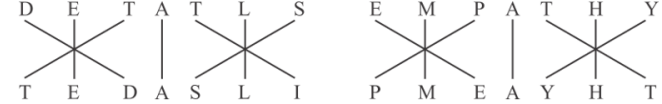
According to sequence in dictionary:

3. Discuss
2. Disease
5. Disgrace
1. Dish
4. Disjoin

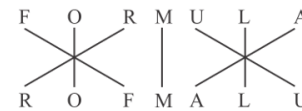
**S30. Ans.(a)****S31. Ans.(a)**

**Sol.**

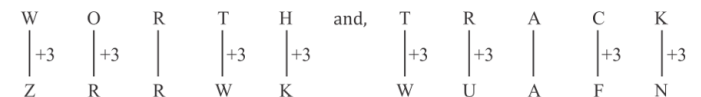
The pattern is



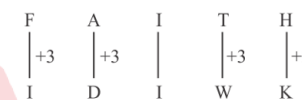
Similarly,

**S32. Ans.(d)**

**Sol.**



Similarly,

**S33. Ans.(d)**

**Sol.**

$$\begin{aligned}
 52 : 5 & \rightarrow (5)^2 \times 2 + 2 : 5 \rightarrow 52 : 5 \\
 100 : 7 & \rightarrow (7)^2 \times 2 + 2 : 7 \rightarrow 100 : 7 \\
 \text{Similarly,} \\
 164 : 9 & \rightarrow (9^2) \times 2 + 2 : 9 \rightarrow 164 : 9
 \end{aligned}$$

**S34. Ans.(b)****S35. Ans.(a)**

**Sol.**

S \_ OZQTLO \_ QU \_ O \_ QVLOZ \_

Checking given options one by one:

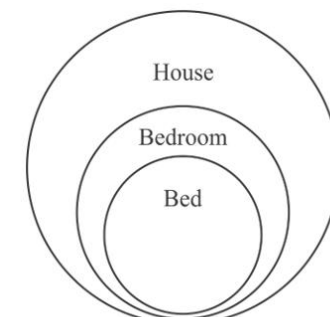
Option A:

S \_ LOZQTLOZ \_ QU \_ LOZ \_ QVLOZ \_  
S / LOZQT / LOZQU / LOZQV / LOZQ

Hence, option A is correct answer.

**S36. Ans.(c)**

**Sol.**



Hence, option C is correct answer.



**S37. Ans.(d)**

**Sol.**

S	A	M	P	L	E	and,	M	A	P	L	E
$\begin{vmatrix} -1 \\ -2 \\ R \end{vmatrix}$	$\begin{vmatrix} -2 \\ -3 \\ Y \end{vmatrix}$	$\begin{vmatrix} -3 \\ -4 \\ J \end{vmatrix}$	$\begin{vmatrix} -4 \\ -5 \\ L \end{vmatrix}$	$\begin{vmatrix} -5 \\ -6 \\ G \end{vmatrix}$	$\begin{vmatrix} -6 \\ -1 \\ Y \end{vmatrix}$		$\begin{vmatrix} -1 \\ -2 \\ L \end{vmatrix}$	$\begin{vmatrix} -2 \\ -3 \\ Y \end{vmatrix}$	$\begin{vmatrix} -3 \\ -4 \\ M \end{vmatrix}$	$\begin{vmatrix} -4 \\ -5 \\ H \end{vmatrix}$	$\begin{vmatrix} -5 \\ -6 \\ Z \end{vmatrix}$

Similarly,

P	E	O	P	L	E
$\begin{vmatrix} -1 \\ -2 \\ O \end{vmatrix}$	$\begin{vmatrix} -2 \\ -3 \\ C \end{vmatrix}$	$\begin{vmatrix} -3 \\ -4 \\ L \end{vmatrix}$	$\begin{vmatrix} -4 \\ -5 \\ L \end{vmatrix}$	$\begin{vmatrix} -5 \\ -6 \\ G \end{vmatrix}$	$\begin{vmatrix} -6 \\ -1 \\ Y \end{vmatrix}$

**S38. Ans.(a)**

**Sol.**

By using BODMAS Rule & checking given options one by one:

$$\begin{aligned} & 91 * 15 * 5 * 18 * 37 \\ \Rightarrow & 91 = 15 \div 5 \times 18 + 37 \\ \Rightarrow & 91 = 3 \times 18 + 37 \\ \Rightarrow & 91 = 54 + 37 \\ \Rightarrow & 91 = 91 \\ \Rightarrow & \text{LHS} = \text{RHS} \end{aligned}$$

**S39. Ans.(b)**

**Sol.**

By using BODMAS Rule & checking given options one by one:

$$\begin{aligned} & 37 * 3 * 21 * 79 * 18 * 4 * 19 \\ \Rightarrow & 37 \times 3 + 21 - 79 = 18 \times 4 - 19 \\ \Rightarrow & 111 + 21 - 79 = 72 - 19 \\ \Rightarrow & 53 = 53 \\ \Rightarrow & \text{LHS} = \text{RHS} \end{aligned}$$

**S40. Ans.(a)**

**Sol.**

By using BODMAS rule & checking given options one by one:

$$\begin{aligned} & 25 * 5 * 10 * 2 * 8 * 44 \\ \Rightarrow & 25 \div 5 \times 10 + 2 - 8 = 44 \\ \Rightarrow & 5 \times 10 + 2 - 8 = 44 \\ \Rightarrow & 50 + 2 - 8 = 44 \\ \Rightarrow & 44 = 44 \\ \Rightarrow & \text{LHS} = \text{RHS} \end{aligned}$$

**S41. Ans.(d)**

**Sol.**

D	R	B	Z
$\begin{vmatrix} -3 \\ +10 \\ A \end{vmatrix}$	$\begin{vmatrix} +10 \\ +9 \\ B \end{vmatrix}$	$\begin{vmatrix} +9 \\ -2 \\ K \end{vmatrix}$	$\begin{vmatrix} -2 \\ -3 \\ X \end{vmatrix}$
$\begin{vmatrix} -3 \\ +10 \\ X \end{vmatrix}$	$\begin{vmatrix} +10 \\ +9 \\ L \end{vmatrix}$	$\begin{vmatrix} +9 \\ -2 \\ T \end{vmatrix}$	$\begin{vmatrix} -2 \\ -3 \\ V \end{vmatrix}$
$\begin{vmatrix} -3 \\ +10 \\ U \end{vmatrix}$	$\begin{vmatrix} +10 \\ +9 \\ V \end{vmatrix}$	$\begin{vmatrix} +9 \\ -2 \\ C \end{vmatrix}$	$\begin{vmatrix} -2 \\ -3 \\ T \end{vmatrix}$
$\begin{vmatrix} -3 \\ +10 \\ R \end{vmatrix}$	$\begin{vmatrix} +10 \\ +9 \\ F \end{vmatrix}$	$\begin{vmatrix} +9 \\ -2 \\ L \end{vmatrix}$	$\begin{vmatrix} -2 \\ -3 \\ R \end{vmatrix}$

**S42. Ans.(a)**

**Sol.**

$$\begin{aligned} (18 - 3)^2 &= 225 \\ (17 - 3)^2 &= 196 \\ (19 - 3)^2 &= 256 \end{aligned}$$

But,

$$(14 - 3)^2 = 121 \neq 169$$

Hence, option a is correct answer.

**S43. Ans.(a)**

**Sol.**

By using BODMAS rule and checking given options one by one:

$$\begin{aligned} & 16 * 4 * 8 * 10 * 2 * 24 \\ \Rightarrow & 16 \div 4 \times 8 - 10 + 2 = 24 \\ \Rightarrow & 4 \times 8 - 10 + 2 = 24 \\ \Rightarrow & 24 = 24 \\ \Rightarrow & \text{LHS} = \text{RHS} \end{aligned}$$

**S44. Ans.(b)**

**Sol.**

According to sequency in dictionary:

2. Negate
4. Negligible
1. Negotiation
3. Networking
5. Newspaper

**S45. Ans.(d)**

**Sol.**

Number of squares

Formula:-

$$n^2 + (n-1)^2 + (n-2)^2 + \dots + (n-n)^2$$

The number of squares in a  $3 \times 3$  matrix

$$= 3^2 + 2^2 + 1^2 = 9 + 4 + 1 = 14$$

$$\therefore \text{Total no. of squares} = 14 + (2 + 2) = 18$$

**S46. Ans.(d)**

**Sol.**

By using BODMAS rule and checking given options:

Option D:

$$\begin{aligned} & 57 * 35 * 44 * 11 * 13 * 74 \\ \Rightarrow & 57 - 35 + 44 \div 11 \times 13 = 74 \\ \Rightarrow & 57 - 35 + 4 \times 13 = 74 \\ \Rightarrow & 57 - 35 + 52 = 74 \\ \Rightarrow & 109 - 35 = 74 \\ \Rightarrow & 74 = 74 \\ \Rightarrow & \text{LHS} = \text{RHS} \end{aligned}$$

**S47. Ans.(c)**

**S48. Ans.(c)**

**S49. Ans.(c)**

**S50. Ans.(a)****Sol.**

A M O U N T : M O U N T

B R I D G E : R I D G E

Similarly,

B R I G H : R I G H T

**S51. Ans.(c)****Sol.**Volume of Cube =  $a^3$ , where  $a$  is side

$$\Rightarrow 27 = a^3$$

$$\Rightarrow a = 3$$

Now,

$$\text{Surface area} = 6a^2$$

$$= 6 \times (3)^2 = 54 \text{ m}^2$$

**S52. Ans.(d)****Sol.**Let cost price by  $x$ 

$$\text{Then, marked price} = x + \left(x \times \frac{45}{100}\right) = 1.45x$$

$$\text{SP} = 1.45x - \left(1.45x \times \frac{21}{100}\right)$$

$$\text{Profit \%} = \left(\frac{1.15x - x}{x}\right) \times 100 = 15\%$$

**S53. Ans.(b)****Sol.**

Checking given options one by one:

$$\text{Option A : } \frac{3739}{7} \text{ (Reminder 1)}$$

$$\text{Option B : } \frac{3661}{7} \text{ (Reminder 0)}$$

 $\therefore$  Correct option is (b)**S54. Ans.(c)****Sol.**

Let cost price of mobile be 100

$$\therefore \text{Marked price} = 100 + \left(100 \times \frac{25}{100}\right) = 125$$

And,

$$\text{SP} = 100 + \left(100 \times \frac{20}{100}\right) = 120$$

$$\therefore \text{Required discount} = 125 - 120 = 5$$

$$\text{Discount \%} = \frac{5}{125} \times 100 = 4\%$$

**S55. Ans.(c)****Sol.**

$$2a + b = 10$$

Squaring both sides, we get-

$$4a^2 + b^2 + 4ab = 100$$

$$\Rightarrow 4a^2 + b^2 + 2(9) = 100$$

$$\Rightarrow 4a^2 + b^2 = 82 \quad \dots (i)$$

Now,

$$(2a - b)^2 = 4a^2 + b^2 - 4ab$$

$$= 82 - 2(9)$$

$$= 64$$

$$\Rightarrow 2a - b = \sqrt{64}$$

$$\Rightarrow 2a - b = 8$$

**S56. Ans.(d)****Sol.**

Mean proportion of 3 and 27

$$= \sqrt{(3 \times 27)} = \sqrt{81} = 9$$

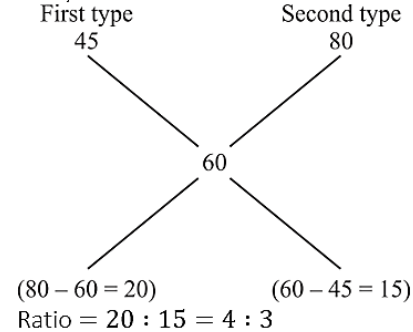
**S57. Ans.(a)****Sol.**

SP of bended sugar = Rs. 72

Profit = 20%

$$\therefore \text{CP} = \frac{72}{(100+20)} \times 100 = \text{Rs. } 60$$

Now,

**S58. Ans.(c)****Sol.**

$$\text{Radius of hemisphere} = \frac{6}{2} = 3 \text{ cm}$$

$$\text{Volume of hemisphere} = \frac{2}{3} \pi r^3$$

$$= \frac{2}{3} \pi \times (3)^3$$

$$= \frac{2}{3} \pi \times 27$$

$$= 18\pi \text{ cm}^3$$

**S59. Ans.(b)****Sol.**

By using BODMAS Rule:

$$11 \div [1 + 1 \div \{1 + 1 \div (1 + 1 \div 3)\}]$$

$$= 11 \div \left[1 + 1 \div \left\{1 + 1 \div \frac{4}{3}\right\}\right]$$

$$= 11 \div \left[1 + 1 \div \frac{7}{4}\right]$$

$$= 11 \div \left[1 + \frac{4}{7}\right]$$

$$= 11 \div \frac{11}{7} = 7$$

**S60. Ans.(b)****Sol.**

$$a + b = 12 \text{ and } ab = 35 = 7 \times 5$$

Thus,

$$a = 7 \text{ or } 5 \text{ and } b = 5 \text{ or } 7$$

$$\therefore a^4 + b^4 = 10^3 = (7)^4 + (5)^4 - 10^3$$

$$= 2401 + 625 - 1000$$

$$= 2026$$

**S61. Ans.(a)**

**Sol.**

$$\text{Required Ratio} = \frac{(43+16+18)}{282} = 77 : 282$$

**S62. Ans.(a)**

**Sol.**

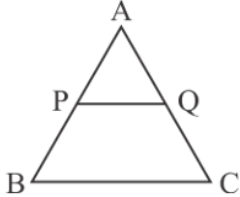
Approximate percentage increase in sales from

$$2002 \text{ to } 2003 = \frac{200-150}{150} \times 100 = 33.33\%$$

**S63. Ans.(d)**

**Sol.**

Given :  $AB = 6$  PB



$$\Rightarrow \frac{AB}{PB} = \frac{6}{1}$$

$$\therefore AP = 6 - 1 = 5$$

$$\text{Since, } \frac{AP}{AB} = \frac{PQ}{BC}$$

$$\therefore PQ : BC = 5 : 6$$

**S64. Ans.(d)**

**Sol.**

Total number of students = 48

Number of students whose height is more than 160 cm =  $48 - 18 = 30$

$$\therefore \text{Required percentage} = \frac{30}{48} \times 100 = 62.5\%$$

**S65. Ans.(d)**

**Sol.**

$$\begin{aligned} & 3p - [3p - \overline{p+q} - \{3p - (p - \overline{q-p})\}] \\ &= 3p - [3p - p - q - \{3p - (p - q + p)\}] \\ &= 3p - [3p - p - q - \{3p - p + q - p\}] \\ &= 3p - [3p - p - q - p - q] \\ &= 3p - [p - 2q] \\ &= 3p - p + 2q \\ &= 2p + 2q \end{aligned}$$

**S66. Ans.(c)**

**Sol.**

$$\text{Number of Girls} = 50 \times \frac{40}{100} = 20$$

$$\therefore \text{Number of boys} = 50 - 20 = 30$$

Let average score of girls be  $x$ .

$$\text{Then, average score of boys} = \frac{4}{5}x$$

Now,

$$20x + 30\left(\frac{4x}{5}\right) = 50 \times 66$$

$$= 20x + 24x = 3300$$

$$= x = 75$$

$$\therefore \text{Average score of girls is } 75$$

**S67. Ans.(a)**

**Sol.**

$$\begin{aligned} \text{Curved surface area of cylinder} &= 2\pi rh \\ &= 2 \times 3.14 \times 4 \times 5 = 125.6 \text{ cm}^2 \end{aligned}$$

**S68. Ans.(c)**

**Sol.**

$$\sin(-A) = -\sin A$$

**S69. Ans.(b)**

**Sol.**

$$\text{Annual growth rate} = 12.5 - 2.5 = 10\%$$

$$\text{Population after three years} = 9000 \left(1 + \frac{10}{100}\right)^3$$

$$= 9000 \left(\frac{110}{100}\right)^3 = 11979$$

**S70. Ans.(c)**

**Sol.**

$$\begin{aligned} \text{Total valid votes} &= 6000 \times \frac{(100-25)}{100} \\ &= 4500 \end{aligned}$$

$$\text{Number of valid votes that the other candidate Sushil gets} = 4500 \times \left(\frac{100-65}{100}\right) = 1575$$

**S71. Ans.(b)**

**Sol.**

$$\begin{aligned} \text{Required average} &= \frac{1+2+3+5+17+21+28}{7} \\ &= \frac{77}{7} = 11 \end{aligned}$$

**S72. Ans.(d)**

**Sol.**

Total work = 36 units (LCM of 12 and 18)

$$\text{Efficiency of A and B} = \frac{36}{12} = 3$$

$$\text{Efficiency of A} = \frac{36}{18} = 2$$

$$\therefore \text{Efficiency of B} = 3 - 2 = 1$$

$$\text{Number of days} = \frac{36}{1} = 36 \text{ days}$$

**S73. Ans.(b)**

**Sol.**

Let the distance be  $x$  km.

Now,

$$\frac{x}{5-2.5} - \frac{x}{5+2.5} = 4$$

$$\Rightarrow \frac{x}{2.5} - \frac{x}{7.5} = 4$$

$$\Rightarrow \frac{3x-x}{7.5} = 4$$

$$\Rightarrow 2x = 30$$

$$\Rightarrow x = 15 \text{ km}$$

**S74. Ans.(a)****Sol.**

$$\text{Price of land P to Q} = 432000 \times \left(\frac{75}{100}\right) \times \left(\frac{75}{100}\right)$$

$$= \text{Rs. } 243000$$

∴ value of the land after 3 years, from the time Q bought the land from

$$P = 234000 \times \left(\frac{150}{100}\right) \times \left(\frac{150}{100}\right)$$

$$= 234000 \times \frac{3}{2} \times \frac{3}{2} = \text{Rs. } 546750$$

**S75. Ans.(c)****Sol.**

Let CP of 1 kg goods be Rs. 100

$$\therefore \text{MP} = 100 \times \frac{130}{100} = \text{Rs. } 130$$

and,

$$\text{SP} = 130 \times \frac{90}{100} = \text{Rs. } 117$$

$$\text{Cost of 870 g goods} = \frac{100}{1000} \times 870 = \text{Rs. } 87$$

$$\therefore \text{Net profit percentage} = \frac{(117-87)}{87} \times 100$$

$$= 34.48\%$$

**S76. Ans.(a)**

**Sol.** Sunanda Nair is an Indian dancer trained in Mohiniattam.

Dr. Sunanda Nair is recognized as a Mohiniattam performer, teacher, and proponent.

**S77. Ans.(b)**

**Sol.** From the given options, 'Private Life of An Indian Prince' has not been written by Arundhati Roy.

- Arundhati Roy is an Indian author best known for her novel *The God of Small Things* (1997), which won the Booker Prize for Fiction in 1997.
- She has written a number of books, such as - *The End of Imagination*, *The Cost of Living*, *Capitalism: A Ghost Story*, *the Debate Between B.R. Ambedkar and M.K. Gandhi*, etc.
- *Azadi: Freedom, Fascism, Fiction* is her latest publication.
- *Private Life of An Indian Prince* is a novel by Mulk Raj Anand first published in 1953.

**S78. Ans.(d)**

**Sol.** Union Ministry of Science and Technology (Union Minister of State (Independent Charge) Science and Technology Jitendra Singh), on November 8, 2021, launched the first-ever mentorship programme called the 'DBT-Star College Mentorship Programme' for young innovators to mark the 75<sup>th</sup> year of India's Independence.

- DBT-Star College Mentorship Programme will help towards the concept of networking, hand holding and outreach.

- A total of 278 undergraduate colleges across the country are currently being supported under the DBT Star College Scheme.

**S79. Ans.(c)**

**Sol.** Isopentane, also called 2-methyl butane, is a branched-chain saturated hydrocarbon with the chemical formula  $\text{C}_5\text{H}_{12}$ .

Isopentane is an extremely volatile and extremely flammable liquid at room temperature and pressure.

**S80. Ans.(b)**

**Sol.** Spain and Netherlands jointly organised the FIH Women's Hockey World Cup from 1 to 17 July 2022.

- The 2022 Women's FIH Hockey World Cup was the 15th edition of the Women's FIH Hockey World Cup, organized by the International Hockey Federation.
- Defending champions, the Netherlands won the tournament for a record ninth time after defeating Argentina 3–1 in the final.

**S81. Ans.(c)**

**Sol.** Sandeep Narwal won the Arjuna Award 2021 in the Kabaddi discipline.

He is known as the 'the beast' for his strong physique and aggressive style of defending.

**S82. Ans.(b)**

**Sol.** Gopal Prasad Dubey is an Indian classical dancer, known for his expertise in the Indian classical dance form of Chhau.

- He received the Jharkhand State Award in 2007 for his contributions to promoting Chhau dance.
- Dubey was honored by the Government of India in 2012, with the fourth highest civilian award of Padma Shri.

**S83. Ans.(d)**

**Sol.** Sodium is located on the left side of the periodic table.

- Sodium is a soft, silvery-white, highly reactive metal with the symbol Na and atomic number 11. Sodium is an alkali metal, in group 1 of the periodic table.

**S84. Ans.(a)**

**Sol.** Recently, some mail channels have been introduced to facilitate quick delivery of mail in large towns and cities in India.

- To facilitate the quick delivery of emails in large towns and cities six main channels have been introduced.
- They are called the Rajdhani channel, Metro Channel, Green Channel, Business Channel, Bulk mail channel, and Periodical Channel.

**S85. Ans.(d)**

**Sol.** A.R. Rahman is the first Indian musician to win the Oscar award for Best Original Score.

**S86. Ans.(b)**

**Sol.** Non-metals are located on the right side of the periodic table. such as oxygen, nitrogen, chlorine, fluorine, etc.

- Two nonmetals, hydrogen, and helium make up about 99% of ordinary matter in the observable universe by mass.
- Five nonmetallic elements, hydrogen, carbon, nitrogen, oxygen, and silicon, largely make up the Earth's crust, atmosphere, oceans, and biosphere.

**S87. Ans.(d)**

**Sol.** Zakir Hussain is the youngest percussionist to be awarded the Padma Shri and Padma Bhushan awards by the Government of India.

- Zakir Hussain is an Indian tabla player, composer, percussionist, music producer, and film actor. He is the eldest son of tabla player Alla Rakha.
- He was awarded the Padma Shri in 1988, and the Padma Bhushan in 2002, by the Government of India presented by President Abdul Kalam.

**S88. Ans.(b)**

**Sol.** The fluid mosaic model proved that the quasi-fluid nature of lipids enables lateral movement of proteins within the overall bilayer.

- According to the fluid mosaic model, the quasi-fluid nature of lipids enables lateral movement of protein within the overall, lipid bilayer.

**S89. Ans.(c)**

**Sol.** Ampere is defined as the unit of electric current that is equal to the flow of one Coulomb per second.

- The relationship between ampere and coulomb is represented as follows:

$$\text{Ampere} = 1 \text{ Coulomb} / \text{Second}.$$

**S90. Ans.(c)**

**Sol.** The joint sitting of the Parliament is called by the President of India (Article 108) and is presided over by the Speaker of the Lok Sabha or, in their absence, by the Deputy Speaker of the Lok Sabha, or in their absence, the Deputy Chairman of the Rajya Sabha.

- The Chairperson of the Rajya Sabha, who is the Vice President of India, doesn't preside over the joint session.

- If any of the above officers are not present then any other member of the Parliament can preside by consensus of both the House.

**S91. Ans.(b)**

**Sol.** In 2009, Shamshad Begum was conferred with the prestigious O. P. Nayyar Award for her contribution to Hindi film music. She was also conferred the Padma Bhushan in 2009.

- Shamshad Begum was an Indian singer who was one of the first playback singers in the Hindi film industry.

**S92. Ans.(a)**

**Sol.** Madurai Shanmukhavadiyu Subbulakshmi was an Indian Carnatic singer from Madurai, Tamil Nadu.

- She was the first musician ever to be awarded the Bharat Ratna, India's highest civilian honour.
- She is the first Indian musician to receive the Ramon Magsaysay award in 1974.
- She was the First Indian who performed in United Nations General Assembly in 1966."

**S93. Ans.(c)**

**Sol.** The Health Minister relaunched the intensified version 4.0 of the largest global inoculation drive in February 2022. Mission Indradhanush is the name of this Mission which covers crores of pregnant women and children.

- Intensified Mission Indradhanush 4.0 will have three rounds and will be conducted in 416 districts (including 75 districts identified for Azadi ka Amrit Mahotsav) across 33 States/UTs in the country.

**S94. Ans.(d)**

**Sol.** Majya Jalmachi Chittarkatha is an autobiography of Shantabai Kamble published in 1983.

- This is considered the first autobiographical narrative by a Dalit woman writer.
- This book shows the life of an Indian woman who was from the lower class of the caste.

**S95. Ans.(a)**

**Sol.** A base year is the first of a series of years in an economic or financial index.

- Base years are also used to measure business activity, such as growth in sales from one period to the next.
- A base year can be any year and is chosen based on the analysis being performed.

**S96. Ans.(c)**

**Sol.** A terrestrial planet is a planet that is composed primarily of silicate rocks or metals.

- Within our Solar System, the terrestrial planets accepted by the IAU are the inner planets closest to the Sun i.e. Mercury, Venus, Earth, and Mars.

**S97. Ans.(d)**

**Sol.** Meenakshi Srinivasan is an Indian classical dancer and choreographer, and an exponent of the Pandanallur style of Bharatnatyam.

- She received the Ustad Bismillah Khan Yuva Puraskar from Sangeet Natak Akademi in 2011.

**S98. Ans.(b)**

**Sol.** The National Eminence Award was set up by the Sri Shanmukhananda Sabha in its golden jubilee year in 2002.

- The award was instituted to motivate artists and provide institutional recognition, which had faded away with the demise of temples and Devaswom (Socio-religious trusts) patrons of fine arts.

**S99. Ans.(d)**

**Sol.** 'The God of Small Things', a winner of the 1997 Booker Prize, is the debut novel of Arundhati Roy.

- Arundhati Roy is an Indian author, actress, and political activist who is best known for the award-winning novel The God of Small Things (1997) and for her involvement in environmental and human rights causes.

**S100. Ans.(b)**

- **Sol.** From the given figure, it is evident, the name of the given track and field event is the Javelin throw.
- The javelin throw is a track and field event where the javelin, a spear about 2.5 m (8 ft 2 in) in length, is thrown.





**Q1. The following sentence has been split into four segments. Identify the segment that contains a grammatical error.**

Rahul sings very sweet when he is in a good mood.

- (a) very sweet
- (b) when he is
- (c) in a good mood
- (d) Rahul sings

**Q2. Select the most appropriate option to fill in the blank.**

My grandfather was a farmer and he \_\_\_\_\_ three acres of land.

- (a) cultivated
- (b) advanced
- (c) grown
- (d) cultured

**Q3. Select the most appropriate meaning of the given idiom.**

Lose your touch

- (a) Doing someone a favour in hopes that the favour will be returned
- (b) To be passed from one person to another
- (c) Not being as successful as previously
- (d) Something being very difficult to find

**Q4. The following sentence has been split into four segments. Identify the segment that contains a grammatical error.**

She had resign from the post before he apologised.

- (a) She had resign
- (b) he apologised
- (c) post before
- (d) from the

**Q5. Select the most appropriate synonym of the given word.**

Bafflement

- (a) Confusion
- (b) Pleasure
- (c) Clarity
- (d) Cleanliness

**Q6. Select the most appropriate ANTONYM of the given word.**

Praise

- (a) celebrate
- (b) Condemn
- (c) hail
- (d) Secure

**Q7. Select the most appropriate option that can substitute the word/s given in bold in the given sentence.**

We want to divide the expenses **between** the three of us.

- (a) at
- (b) among
- (c) from
- (d) for

**Q8. Select the most appropriate meaning of the given idiom.**

At one's elbow

- (a) Next to someone
- (b) Far away
- (c) Strong grip
- (d) Strong bond

**Q9. Select the most appropriate synonym of the given word.**

Confront

- (a) Mingle
- (b) Conceal
- (c) Challenge
- (d) Scheme

**Q10. The following sentence has been split into four segments. Identify the segment that contains a grammatical error.**

After a long and fun-filled day, the children slept themselves peacefully.

- (a) a long and fun-filled day
- (b) slept themselves peacefully
- (c) the children
- (d) After

**Q11. Select the INCORRECTLY spelt word.**

- (a) Laxurious
- (b) Innocent
- (c) Zealous
- (d) Judicial

**Q12. Select the option that can be used as a one-word substitute for the words given in bold in the given sentence.**

Geeta is doubtful about getting hired as she is **inexperienced at this job**.

- (a) Professional
- (b) Expert
- (c) Ace
- (d) Novice

**Q13. Parts of a sentence are given below in jumbled order. Arrange the parts in the correct order to form a meaningful sentence.**

- a) is credited with saying
  - b) do not dry your feet
  - c) If you want to leave your footprint on the sands of time,
  - d) Dr. APJ Abdul Kalam, former President of India
- (a) d, c, a, b  
(b) d, a, c, b  
(c) c, a, b, d  
(d) a, b, c, d,

**Q14. Select the INCORRECTLY spelt word.**

- (a) Arguement
- (b) Performance
- (c) Valuable
- (d) Secretary

**Q15. Select the most appropriate option to fill in the blank.**

The writer declares that \_\_\_\_\_ children of their childhood is a criminal act.

- (a) robbing
- (b) robbed
- (c) rob
- (d) to rob

**Q16. Select the most appropriate ANTONYM of the given word.**

Detrimental

- (a) Baseless
- (b) Harmless
- (c) Senseless
- (d) Meaningless

**Q17. Select the most appropriate meaning of the given idiom.**

Blow up

- (a) To suffice
- (b) To live up greatly
- (c) To destroy by an explosion
- (d) To stand upright

**Q18. Select the most appropriate ANTONYM of the given word.**

Dwarf

- (a) Measurable
- (b) Medium
- (c) Tiny
- (d) Giant

**Q19. From among the words given in bold, select the INCORRECTLY spelt word in the following sentence.**

Small drops trickled down the red and yellow tassels of canopies and dampened the heads of little boys.

- (a) canopies
- (b) tassels
- (c) dampened
- (d) trickled

**Q20. In the following passage, some words have been deleted. Read the passage carefully and select the most appropriate option to fill in each blank.**

When we believe that our mind is thinking \_\_\_\_\_ thoughts at the same time, what actually, is happening is that \_\_\_\_\_ thoughts are \_\_\_\_\_ in such quick \_\_\_\_\_ so as to seem simultaneous

- (a) homogenous, measurable, unchanging, velocity
- (b) challenging, limited, fixed, interruption
- (c) multiple, myriad, alternating, succession
- (d) uniform, countable, altering, ramification

**Directions (21-25): In the following passage, some words have been deleted. Read the passage carefully and select the most appropriate option to fill in each blank.**

Competition is a necessary prospect for (1)\_\_\_\_\_ individuals with particular qualities, but only those who can (2)\_\_\_\_\_ their minds to work, work hard every day, and prove themselves will be able to (3)\_\_\_\_\_ this arduous battle. It's a never-ending race to the finish line, and only those who put in the effort and dedication will make it to the end. The outcome of any exam does not (4)\_\_\_\_\_ on the last day, during your paper — your success is ensured with every morning that you put in work. Students must be aware of the tough environment they are entering and prepare (5)\_\_\_\_\_ in order to improve their chances.

**Q21. Select the most appropriate option to fill in blank No.1.**

- (a) distinguished
- (b) distinguishes
- (c) distinguishing
- (d) distinguish

**Q22. Select the most appropriate option to fill in blank No.2.**

- (a) get
- (b) divert
- (c) made
- (d) put

**Q23. Select the most appropriate option to fill in blank No.3.**

- (a) overcome
- (b) overload
- (c) overpaid
- (d) overjoyed

**Q24. Select the most appropriate option to fill in blank No.4.**

- (a) awake
- (b) arise
- (c) arrive
- (d) abase

**Q25. Select the most appropriate option to fill in blank No.5.**

- (a) reluctantly
- (b) consequently
- (c) accordingly
- (d) exponentially

**Q26. Which of the following numbers will replace the question mark (?) in the given series?**

15, 27, 12, ?, 9, 33

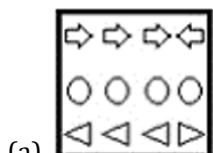
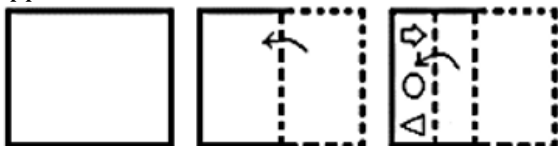
- (a) 29
- (b) 18
- (c) 26
- (d) 30

**Q27. Which of the following numbers will replace the question mark (?) in the given series?**

13, 14, 23, 48, 97, 178, ?

- (a) 259
- (b) 278
- (c) 269
- (d) 299

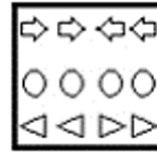
**Q28. A paper is folded and cut as shown below. How will it appear when unfolded?**



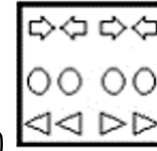
(a)



(b)



(c)



(d)

**Q29. Study the given pattern carefully and select the number that can replace the question mark (?) in it.**

First row- 3, 43, 4

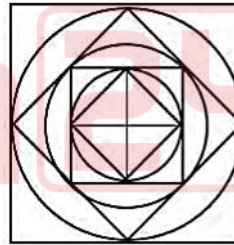
Second row- 6, 241, 5

Third row- 2, ?, 11

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding /deleting /multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is NOT allowed)

- (a) 173
- (b) 192
- (c) 137
- (d) 129

**Q30. How many triangles are there in the given figure?**



- (a) 22
- (b) 24
- (c) 20
- (d) 18

**Q31. Select the option that is related to the third term in the same way as the second term is related to the first term and the sixth term is related to the fifth term.**

16 : 69 :: 24 : ? :: 31 : 144

- (a) 109
- (b) 121
- (c) 116
- (d) 105

**Q32.** Which letter cluster will replace the question mark (?) to complete the given series?

WFBI, UCWB, SZRU, ?

- (a) QWMN
- (b) QXNN
- (c) QWNN
- (d) QXMN

**Q33.** The second number in the given number pairs is obtained by performing certain mathematical operation(s) on the first number. The same operation(s) are followed in all the number pairs except one. Find that odd number pair.

- (a) 16:1024
- (b) 14:784
- (c) 18:1620
- (d) 12:576

**Q34.** If A denotes '+', B denotes '×', C denotes '-' and D denotes '÷', then what will come in place of '?' in the following equation?

(13 B 9) D 3 A (14 D 7) B 6 C 21 A (32 B 2) = ?

- (a) 96
- (b) 100
- (c) 112
- (d) 94

**Q35.** Which of the following numbers will replace the question mark (?) in the given series?

19, 38, 35, ?, 135, 810

- (a) 146
- (b) 142
- (c) 137
- (d) 140

**Q36.** Select the option that is related to the fifth term in the same way as the second term is related to the first term and the fourth term is related to the third term.

NUMBER : UNNYRE :: MOTHER : OMGSRE :: FINGER : ?

- (a) IFDHRE
- (b) IFGNRE
- (c) IFMTRE
- (d) IFTMRE

**Q37.** In a certain code language, 'ADVISORY' is written as 'BFYMRMOU', and 'CHAMPION' is written as 'DJDQOGLJ'. How will 'DESIGNER' be written in that language?

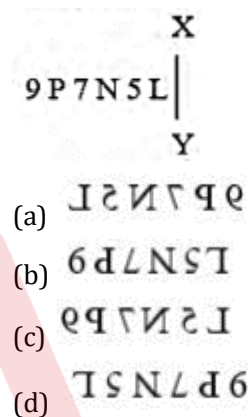
- (a) EGVNFLCN
- (b) EGUMFMCN
- (c) EGVNFLBN
- (d) EGVNFLBN

**Q38.** Select the option that is related to the fifth number in the same way as the second number is related to the first number and the fourth number is related to the third number.

24 : -192 :: -31 : 248 :: -18 : ?

- (a) -152
- (b) -146
- (c) 148
- (d) 144

**Q39.** Select the correct mirror image of the given combination when the mirror is placed at XY as shown.

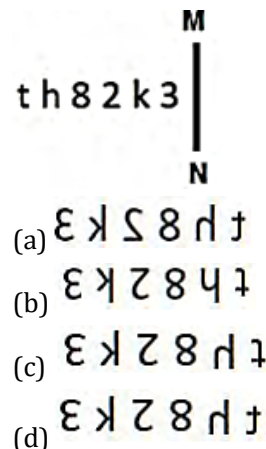


**Q40.** Which of the following letter-clusters will replace the question mark (?) in the given series to make it logically complete?

WVE, UTG, SRI, QPK, ?

- (a) MON
- (b) MNO
- (c) NMO
- (d) ONM

**Q41.** Select the correct mirror image of the given combination when the mirror is placed at MN as shown.



**Q42.** In a certain code language, 'KITCHEN' is written as 'LHUBIDO', and 'HUSBAND' is written as 'ITTABME'. How will 'ELEMENT' be written in that language?

- (a) FKFLFMU
- (b) FKFLFNU
- (c) FJFLGNV
- (d) FKGLFNU

**Q43.** In a certain code language, "FAMOUS" is written as "AFOMSU", and "FINGER" is written as "IFGNRE". How will "INVEST" be written in that language?

- (a) NIVETS
- (b) NEIVTS
- (c) NIEVST
- (d) NIEVTS

**Q44.** Three statements are given, followed by three conclusions numbered I, II and III. Assuming the statements to be true, even if they seem to be at variance with commonly known facts, decide which of the conclusions logically follow(s) from the statements.

Statements:

Some butters are honeys.

Some honeys are breads.

All breads are jams.

Conclusions:

I. Some jams are honeys.

II. All honeys are butters.

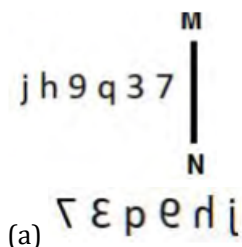
III. Some jams are butters.

- (a) Only conclusions I and II follow
- (b) Only conclusion II follows
- (c) Only conclusions I and III follow
- (d) Only conclusion I follows

**Q45.** If 21st June 2007 was a Thursday, then what was the day of the week on 21st June 2011?

- (a) Wednesday
- (b) Monday
- (c) Sunday
- (d) Tuesday

**Q46.** Select the correct mirror image of the given combination when the mirror is placed at MN as shown.



- (b) 7 3 q 9 h j
- (c) 7 3 q 9 h j
- (d) 7 3 q 9 h j

**Q47.** Select the option that represents the correct order of the given words as they would appear in an English dictionary.

- 1. Adequate
- 2. Adoption
- 3. Addiction
- 4. Abduction
- 5. Advertisement
- (a) 4,3,1,2,5
- (b) 3,2,4,1,5
- (c) 3,1,4,2,5
- (d) 4,2,1,3,5

**Q48.** Two different positions of the same dice are shown, the six faces of which are numbered from 1 to 6. Select the number that will be on the face opposite to the one showing '3'.



- (a) 4
- (b) 1
- (c) 6
- (d) 2

**Q49.** Study the given pattern carefully and select the number that can replace the question mark (?) in it.

First row- 9, 21, 124

Second row- 11, 25, 148

Third row- 17, ?, 220

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding /deleting /multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is NOT allowed)

- (a) 34
- (b) 30
- (c) 35
- (d) 37



**Q50.** The second number in the given number pairs is obtained by performing certain mathematical operation(s) on the first number. The same operation(s) are followed in all the number pairs, EXCEPT one. Find that odd number pair.

- (a) 361 : 332
- (b) 533 : 504
- (c) 440 : 411
- (d) 520 : 481

**Q51.** The value of

$$(4^3 + 4) \div [5^2 - (7^2 - 41)] \text{ is:}$$

- (a) 8
- (b) 17
- (c) 5
- (d) 4

**Q52.** The fourth proportional to the numbers 5, 6 and 8 is:

- (a) 9.8
- (b) 9.6
- (c) 9
- (d) 9.5

**Q53.** To pack a set of books, Gautam got cartons of a certain height that were 48 inches long and 27 inches wide. If the volume of such a carton was 22.5 cubic feet, what was the height of each carton? [Use 1 foot = 12 inches.]

- (a) 36 inches
- (b) 32.5 inches
- (c) 30 inches
- (d) 32 inches

**Q54.** 5 kg of ₹18 per kg wheat is mixed with 2 kg of another type of wheat to get a mixture costing ₹20 per kg. Find the price (per kg) of the costlier wheat.

- (a) ₹27
- (b) ₹25
- (c) ₹29
- (d) ₹30

**Q55.** If  $\cot 75^\circ = 2 - \sqrt{3}$ . Find the value of  $\cot 15^\circ$ .

- (a)  $2 - \sqrt{3}$
- (b)  $2 + \sqrt{3}$
- (c)  $\sqrt{3} + 1$
- (d)  $\sqrt{3} - 1$

**Q56.** In a government scheme, if an electricity bill is paid before the due date, one gets a reduction of 5% on the amount of the bill. By paying the bill before the due date, a person got a reduction of ₹20. The amount of his electricity bill was:

- (a) ₹440
- (b) ₹400
- (c) ₹520
- (d) ₹420

**Q57.** A shopkeeper earns a profit of 12% on selling a book at 10% discount on the printed price. The ratio of the cost price to the printed price is:

- (a) 38 : 55
- (b) 45 : 56
- (c) 55 : 38
- (d) 56 : 45

**Q58.** A thief was spotted by a policeman from a distance of 225 metres. When the policeman started the chase, the thief also started running. If the speed of the thief was 11 km/h and that of the policeman was 13 km/h, how far would the thief have run, before the policeman caught up with him?

- (a) 1237.5 metres
- (b) 1137.5 metres
- (c) 1357.5 metres
- (d) 1256.5 metres

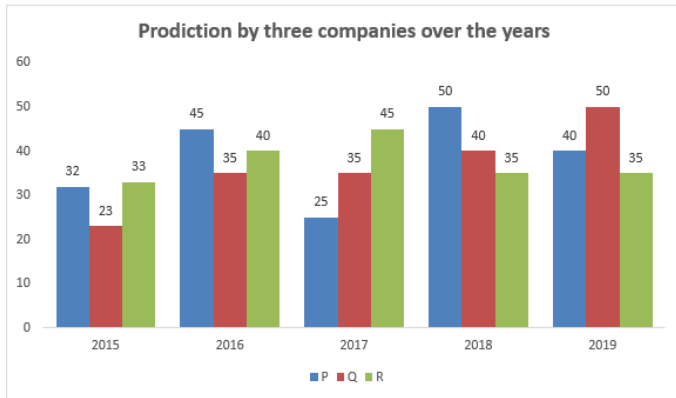
**Q59.** Which of the following is divisible by 3?

- (a) 7345932
- (b) 5439763
- (c) 3642589
- (d) 3262735

**Q60.** At a certain rate of interest compounded annually, a sum amounts to ₹10,890 in 2 years and to ₹11,979 in 3 years. The sum is:

- (a) ₹9,000
- (b) ₹8,000
- (c) ₹8,500
- (d) ₹9,500

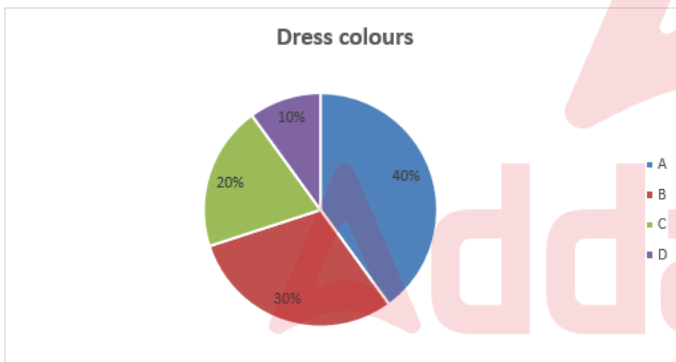
**Q61.** The following graph shows the data of the production of electric wire (in thousand tons) by three different companies P, Q and R over the years.



What is the ratio of the average production of Company P in the period 2017- 2019 to the average production of Company Q in the same period?

- (a) 4 : 5
- (b) 25 : 23
- (c) 23 : 25
- (d) 5 : 4

**Q62.** The following pie chart shows the different coloured dresses worn by 60 students in a college party. Study the pie chart and answer the question that follows.



The number of students who were Violet coloured dress (sector which represents 10%) is:

- (a) 20
- (b) 10
- (c) 6
- (d) 12

**Q63.** In a class, there are 39 students and their average weight is 51 kg. If we include the weight of the teacher, then the average weight becomes 51.2 kg. What is the weight of the teacher?

- (a) 53 kg
- (b) 59 kg
- (c) 57 kg
- (d) 51 kg

**Q64.** A sum of money becomes ₹ 3,364 at a rate of 16% compounded annually for 2 years. The sum of money is:

- (a) ₹2,500
- (b) ₹1,800
- (c) ₹3,800
- (d) ₹2,200

**Q65.** If the surface area of a sphere is  $1386 \text{ cm}^2$ , then find the radius of the sphere.

- (a) 12.5 cm
- (b) 10.5 cm
- (c) 10 cm
- (d) 12 cm

**Q66.** If the numerator of a fraction be increased by 50% and its denominator be diminished by 28% the value of the fraction is  $\frac{25}{36}$ . find the original fraction.

- (a)  $\frac{1}{5}$
- (b)  $\frac{2}{3}$
- (c)  $\frac{2}{5}$
- (d)  $\frac{1}{3}$

**Q67.** Simplify  $(957 + 932)^2 - 4 \times 957 \times 932$ .

- (a) 576
- (b) 676
- (c) 529
- (d) 625

**Q68.** If the surface area of a sphere is  $64 \pi \text{ cm}^2$ , then the volume of the sphere is:

- (a)  $\frac{241}{3} \pi \text{ cm}^3$
- (b)  $\frac{251}{5} \pi \text{ cm}^3$
- (c)  $\frac{226}{3} \pi \text{ cm}^3$
- (d)  $\frac{256}{3} \pi \text{ cm}^3$

**Q69.** On reducing the marked price of his goods by ₹28, a shopkeeper gains 20%. If the cost price of the article be ₹560 and it is sold at the marked price, what will be the gain per cent?

- (a) 30%
- (b) 25%
- (c) 20%
- (d) 15%

**Q70.** If  $x = \frac{1}{x} = -2\sqrt{3}$ , what is the value of  $x^5 + \frac{1}{x^5}$ ?

- (a)  $-178\sqrt{3}$
- (b)  $-18\sqrt{3}$
- (c)  $182\sqrt{3}$
- (d)  $-180\sqrt{3}$

**Q71.** Avi and Bindu can complete a project in four and twelve hours, respectively. Avi begins project at 5 a.m., and they work alternately for one hour each. When will the project be completed?

- (a) 9 a.m.
- (b) 11 a.m.
- (c) 1 p.m.
- (d) 10 a.m.

**Q72.** Two circles having radii 12 cm and 8 cm, respectively, touch each other externally. A common tangent is drawn to these circles which touch the circles at M and N, respectively. What is the length (in cm) of MN?

- (a)  $8\sqrt{8}$
- (b)  $8\sqrt{6}$
- (c)  $6\sqrt{8}$
- (d)  $6\sqrt{6}$

**Q73.** If  $a + 2b = 27$  and  $a^3 + 8b^3 = 5427$ , then find the value of  $2ab$ .

- (a) 176
- (b) 156
- (c) 172
- (d) 149

**Q74.** The following table gives the sales of an electronic chip over 5 years. Find the year in which the sales are equal to the average of the sales over the 5 years.

Year	2015	2016	2017	2018	2019
Sales (in thousands of rupees)	45	54	57	60	69

- (a) 2018
- (b) 2015
- (c) 2017
- (d) 2016

**Q75.** In an election between two candidates, 80% of the eligible voters cast their votes, 5% of the votes cast were declared invalid. A candidate got 10545 votes, which were 75% of the total valid votes. Find the total number of eligible voters.

- (a) 17800
- (b) 18500
- (c) 18250
- (d) 18000

**Q76.** In which year was the National Biodiversity Authority, a statutory autonomous body, established under the Ministry of Environment and Forests, Government of India?

- (a) 2006
- (b) 2000
- (c) 2003
- (d) 2010

**Q77.** Who won the Major Dhyan Chand Khel Ratna Award 2021 in Para Shooting discipline?

- (a) Avani Lekhara
- (b) Manu Bhaker
- (c) Gagan Narang
- (d) Apurvi Chandela

**Q78.** Who among the following won the Tansen Samman 2020?

- (a) Manju Mehta
- (b) Dalchan Sharma
- (c) Ulhas Kashalkar
- (d) Satish Vyas

**Q79.** The term 'checkmate' is used in which of the following sports?

- (a) Hockey
- (b) Chess
- (c) Cricket
- (d) Badminton

**Q80.** Who among the following received the Sahitya Akademi Award (Non-fiction) for his book 'An Era of Darkness' in 2019?

- (a) Shashi Tharoor
- (b) Cyrus Mistry
- (c) Jerry Pinto
- (d) Arun Shourie

**Q81.** Shambhu Maharaj was Awarded the Padma Shri for his contribution to which of the following dances in India?

- (a) Kathak
- (b) Bharatanatyam
- (c) Kuchipudi
- (d) Manipuri

**Q82.** On 21st January 2022, three states observed their 50th Statehood Day, which of the following is NOT one amongst these three?

- (a) Meghalaya
- (b) Nagaland
- (c) Tripura
- (d) Manipur

**Q83.** In optics, the refractive index of a substance is described by the formula  $n = c/v$ , where  $c$  is:

- (a) the speed of light in a medium
- (b) the center of curvature
- (c) the radius of the sphere
- (d) the speed of light in a vacuum

**Q84.** Which of the following fields is not offered by Kalidas Samman?

- (a) Classical music
- (b) Classical dance
- (c) Puppetry
- (d) Plastic arts

**Q85.** Which is the largest continental shelf in the world?

- (a) The shelf of India
- (b) The Indian Ocean shelf
- (c) The shelf in the Pacific Ocean
- (d) The Siberian shelf in the Arctic Ocean

**Q86.** For an NBFC- MFI, the maximum variance permitted for individuals between the minimum and maximum interest rate\_\_\_\_\_.

- (a) cannot exceed 4 percent
- (b) cannot exceed 2 percent
- (c) cannot be less than 2 percent
- (d) cannot be less than 4 percent

**Q87.** Who among the following was the first woman classical dancer in independent India to be nominated as a member of the Rajya Sabha?

- (a) Vidyagauri Adkar
- (b) Niveditha Arjun
- (c) Rukmini Devi Arundale
- (d) Kalamandalam Kalyanikutty Amma

**Q88.** Which French chemist summarised his experiment in 1806, and proved that the mass ratio of elements in a chemical compound is always the same, regardless of the source of the compound?

- (a) Joseph Proust
- (b) Robert Boyle
- (c) Jacob Berzelius
- (d) John Dalton

**Q89.** Who among the following is credited with single-handedly making the Santoor a popular classical instrument?

- (a) Shiv Kumar Sharma
- (b) Bhajan Sopori
- (c) Rahul Sharma
- (d) Ulhas Bapat

**Q90.** "The State shall not discriminate against any citizen on grounds only of religion, race, caste, sex, place of birth or any of them". This has been incorporated in:

- (a) Article 19
- (b) Article 23
- (c) Article 15
- (d) Article 14

**Q91.** EM Subramaniam was an exponent of the \_\_\_\_\_, a musical instrument.

- (a) mandolin
- (b) guitar
- (c) ghatam
- (d) pakhawaj

**Q92.** Pandit Ravi Shankar, a music legend is famous for which of the following styles of music?

- (a) Hindustani classical instrumental
- (b) Hindustani classical vocal
- (c) Carnatic classical vocal
- (d) Carnatic classical instrumental

**Q93.** Which of the following is a limestone cave in India?

- (a) Undavalli Caves
- (b) Varaha Cave
- (c) Borra Caves
- (d) Bhimbetka Caves

**Q94.** Which of the following dancers of the Mohiniyattam form of Indian classical dance was given the Devadasi National Award in 2013?

- (a) Smitha Rajan
- (b) Jayaprabha Menon
- (c) Sunanda Nair
- (d) Gopika Verma

**Q95.** Find the correct chemical formula of nitromethane.

- (a)  $\text{CH}_3\text{NO}$
- (b)  $\text{CH}_3\text{NO}_2$
- (c)  $\text{CH}_4\text{NO}_3$
- (d)  $\text{CH}_3\text{NO}_3$

**Q96.** Among the following famous personalities, whose autobiography is "The Road Ahead"?

- (a) Elon Musk
- (b) Bill Gates
- (c) Jeff Bezos
- (d) Cristiano Ronaldo

**Q97.** Which of the following is a type of bryophyte that lives in many environments and is characterised by its small, flattened leaves, root-like rhizoids, and peristome?

- (a) Funaria
- (b) Ulothrix
- (c) Cladophora
- (d) Ulva

**Q98.** Which of the following ministries was held by Dharmendra Pradhan before he became Cabinet Minister of Education, Skill Development, and Entrepreneurship in July 2021?

- (a) Ministry of Information and Broadcasting and Sports
- (b) Ministry of Food Processing Industries
- (c) Ministry of Housing and Urban Development

(d) Ministry of Petroleum and Natural Gas and Steel

**Q99.** Which of the following memoirs was written by the famous classic Indian actor Dev Anand of Hindi films?

- (a) Romancing with Life
- (b) The Substance and the Shadow
- (c) Autobiography of an Actor
- (d) Cracking the Code: My Journey in Bollywood

**Q100.** Which of the following is a game played with a racket?

- (a) Baseball
- (b) Volleyball
- (c) Cricket
- (d) Squash





## Solutions

### S1. Ans.(a)

**Sol.** In place of 'sweet' adverb 'sweetly' will be used in the given sentence to make it grammatically and contextually correct.

- Sweet is an adjective which means pleasing in general; delightful.
- Sweetly is an adverb which means in a generally pleasing or endearing way.
- An adverb is a word or an expression that generally modifies a verb, adjective, another adverb, determiner, clause, preposition, or sentence.
- Hence option (a) has the required grammatical error.

### S2. Ans.(a)

**Sol.** The word to be filled in the blank is 'cultivated.'

- **Cultivated** means raise or grow (plants), especially on a large scale for commercial purposes.
- Hence, while comprehending the given sentence option (a) makes the sentence grammatically and contextually correct.
- **Advanced** means modern and recently developed.
- **Grown** means (of a living thing) to undergo natural development by increasing in size and changing physically.
- All the other given words have different meaning and do not fit in the context of the sentence.

### S3. Ans.(c)

**Sol. Lose your touch-** you can no longer do something as well as you could before.

- **Use in a sentence-** It's good to see their goalkeeper's not losing his touch.

### S4. Ans.(a)

**Sol.** Replace 'resign' with 'resigned' to make the given sentence grammatically and contextually correct.

- "Had" is the simple past as well as the past participle form of the verb "have."
- Had + V3 form is used for the sentences in past tense.

### S5. Ans.(a)

**Sol. Bafflement-** the condition of being completely unable to understand or explain something.

- **Synonyms-** puzzlement, obfuscation, bewilderment, befuddlement, **confusion**.
- **Antonyms** – inactivity, Tidiness, natural object, clarity.
- Option (a) portrays the same meaning as that of the given group of words & hence it is the correct choice.

### Meaning of other words:

- **Confusion** - uncertainty about what is happening, intended, or required.
- **Pleasure** - a feeling of happy satisfaction and enjoyment.
- **Clarity** - the quality of being coherent and intelligible.
- **Cleanliness** - the state or quality of being clean or being kept clean.

### S6. Ans.(b)

**Sol. Praise-** express warm approval or admiration of.

- **Synonyms-** laudation, panegyric, plaudit, sycophancy.
- **Antonyms- condemn**, blame, criticize.
- Option (b) gives the opposite meaning as of the given word.

### Meaning of given words:

- **Celebrate** - acknowledge (a significant or happy day or event) with a social gathering or enjoyable activity.
- **Condemn** - express complete disapproval of; censure.
- **Hail** - pellets of frozen rain which fall in showers from cumulonimbus clouds.
- **Secure** - fixed or fastened so as not to give way, become loose, or be lost.

### S7. Ans.(b)

**Sol.** Replace 'between' with 'among' in the given sentence to make it grammatically and contextually correct.

- Between means at, into, or across the space separating (two objects or regions).
- Among means situated more or less centrally in relation to (several other things).

### S8. Ans.(a)

**Sol. At one's elbow-** Immediately beside someone, close by.

- **Use in a sentence-** The apprentice was constantly at the master's elbow.

### S9. Ans.(c)

**Sol. Confront-** come face to face with (someone) with hostile or argumentative intent.

- **Synonyms-** rest, sojourn, stay, stop, tarry, tolerate, wait, watch, **challenge**.
- **Antonyms** – forfend, journey, migrate, move, proceed, reject,
- Option (c) portrays the same meaning as that of the given group of words & hence it is the correct choice.

### Meaning of other words:

- **Mingle** - mix or cause to mix together.
- **Conceal** - not allow to be seen; hide.
- **Challenge** - a call to someone to participate in a competitive situation or fight to decide who is superior in terms of ability or strength.
- **Scheme** - a large-scale systematic plan or arrangement for attaining a particular object or putting a particular idea into effect.

### S10. Ans.(b)

**Sol.** Remove 'themselves' to make the given sentence grammatically and contextually correct.

- The given pronoun is not required to complete the meaning of the sentence and is unnecessarily used.

### S11. Ans.(a)

**Sol.** The correct spelling is 'Luxurious'.

Meaning of the given words:

- **Luxurious**- extremely comfortable or elegant, especially when involving great expense.
- **Innocent** - not guilty of a crime or offence.
- **Zealous** - showing great energy or enthusiasm in pursuit of a cause or objective.
- **Judicial** - of, by, or appropriate to a law court or judge; relating to the administration of justice.

### S12. Ans.(d)

**Sol.** Meaning of the given words:

- **Professional** - relating to or belonging to a profession.
- **Expert** - a person who is very knowledgeable about or skillful in a particular area.
- **Ace** - a playing card with a single spot on it, ranked as the highest card in its suit in most card games.
- **Novice** - a person new to and inexperienced in a job or situation.
- Option (d) portrays the same meaning as that of the given group of words & hence it is the correct choice.

### S13. Ans.(b)

**Sol.** The proper arrangement is – d, a, c, b.

- When we look at the context of the jumbled sentence, the paragraph will start with the subject which is introduced in the statement (d) about which other statements are made.
- So, statement d will be our first statement of the jumbled sentences.
- Option (a) sentence is the further extension of the statement (d). So, will be next in the order.
- Option (b) sentence will be the last in order.
- Option (b) fits perfectly in context and makes the jumbled sentences grammatically correctly. Therefore, the correct arrangement would be "d, a, c, b."

### S14. Ans.(a)

**Sol.** The correct spelling is 'Argument'.

Meaning of the given words:

- **Argument** - an exchange of diverging or opposite views, typically a heated or angry one.
- **Performance** - an act of presenting a play, concert, or other form of entertainment.
- **Valuable** - worth a great deal of money.
- **Secretary** - a person employed by an individual or in an office to assist with correspondence, make appointments, and carry out administrative tasks.

### S15. Ans.(a)

**Sol.** The word to be filled in the blank is 'robbing'.

- Robbing means deprive someone of (something needed or deserved).
- The "-ing" form is used in progressive verb tenses with auxiliary verbs (helping verbs).
- Hence, while comprehending the given sentence option (a) makes the sentence grammatically and contextually correct.

### S16. Ans.(b)

**Sol.** **Detrimental** – tending to cause harm.

- **Synonyms**- poisonous, ruinous, unhealthful, unwholesome.
- **Antonyms**- Harmless, rejuvenating, salutary, serviceable, useful, wholesome.
- Option (b) gives the opposite meaning as of the given word.

**Meaning of given words:**

- **Baseless** - without foundation in fact.
- **Harmless** - not able or likely to cause harm.
- **Senseless** - lacking common sense; wildly foolish.
- **Meaningless** - having no meaning or significance.

### S17. Ans.(c)

**Sol.** **Blow up**- explode.

- **Use in a sentence**- The car blew up as soon as it hit the wall.

### S18. Ans.(d)

**Sol.** **Dwarf** – (in folklore or fantasy literature) a member of a mythical race of short, stocky humanlike creatures who are generally skilled in mining and metalworking.

- **Synonyms**- pygmy, midget, miniaturize, shrink.
- **Antonyms**- giant, ettin.
- Option (d) gives the opposite meaning as of the given word.

### Meaning of given words:

- **Measurable** - able to be measured.
- **Medium** - an agency or means of doing something.
- **Tiny** - very small.
- **Giant** - an imaginary or mythical being of human form but superhuman size.

### S19. Ans.(a)

**Sol.** The correct spelling is 'Canopies'.

Meaning of the given words:

- **Canopies** - the uppermost branches of the trees in a forest, forming a more or less continuous layer of foliage.
- **Tassels** - a tuft of loosely hanging threads or cords knotted at one end and attached for decoration to soft furnishings, clothing, or other items.
- **Dampened** - make slightly wet.
- **Trickled** - (of a liquid) flow in a small stream.

### S20. Ans.(c)

**Sol.** The word to be filled in the blanks are "multiple, myriad, alternating, succession" respectively.

- **Multiple**- having or involving several parts, elements, or members.
- **Myriad**- a countless or extremely great number of people or things.
- **Alternating**- (of two or more things) occurring in turn repeatedly.
- **Succession**- a number of people or things of a similar kind following one after the other.
- Hence, while comprehending the given sentence option (c) makes the sentence grammatically and contextually correct.
- All the other given words have different meaning and do not fit in the context of the sentence.

### S21. Ans.(c)

**Sol.** The word that can be filled in the blank is 'distinguishing'.

- Distinguishing means characteristic of one thing or person, so serving to identify it; distinctive.
- As per the context, the word 'distinguishing' fits in very well & hence, it is the correct option.

### S22. Ans.(d)

**Sol.** The word that can be filled in the blank is 'put' to make the sentence grammatically and contextually correct.

- Put means move to or place in a particular position.
- As per the context, the word 'put' fits in very well & hence, it is the correct option.

### S23. Ans.(a)

**Sol.** The word that can be filled in the blank is 'overcome' to make the sentence grammatically and contextually correct.

- Overcome means succeed in dealing with (a problem or difficulty).
- As per the context, the word 'overcome' fits in very well & hence, it is the correct option.

### Meaning of other words:

- **Overload** - load with too great a burden or cargo.
- **Overpaid** - (of a person or organization) paid too highly.
- **Overjoyed**- extremely happy.
- Thus, all the other given words have different meaning and do not fit in the context of the sentence.

### S24. Ans.(c)

**Sol.** The word that can be filled in the blank is 'arrive' to make the sentence grammatically and contextually correct.

- Arrive means reach a place at the end of a journey or a stage in a journey.
- As per the context, the word 'arrive' fits in very well & hence, it is the correct option.

### Meaning of other words:

- **Awake** - stop sleeping; wake from sleep.
- **Arise** - (of a problem, opportunity, or situation) emerge; become apparent.
- **Abase** - behave in a way that belittles or degrades (someone).
- Thus, all the other given words have different meaning and do not fit in the context of the sentence.

### S25. Ans.(c)

**Sol.** The word that can be filled in the blank is 'accordingly' to make the sentence grammatically and contextually correct.

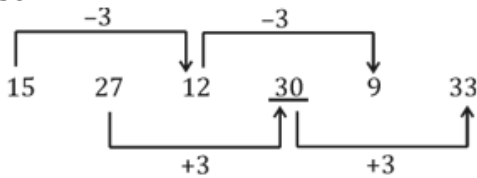
- Accordingly means in a way that is appropriate to the particular circumstances.
- As per the context, the word 'accordingly' fits in very well & hence, it is the correct option.

### Meaning of other words:

- **Reluctantly** - in an unwilling and hesitant way.
- **Consequently** - as a result.
- **Exponentially** - (with reference to an increase) more and more rapidly.
- Thus, all the other given words have different meaning and do not fit in the context of the sentence.

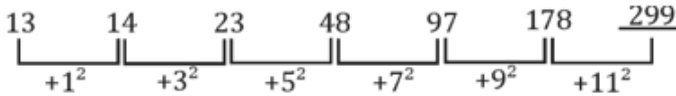
**S26. Ans.(d)**

**Sol.**



**S27. Ans.(d)**

**Sol.**



**S28. Ans.(b)**

**S29. Ans.(d)**

**Sol.** first row:

$$3^3 + 4^2 = 27 + 16 = 43$$

Second row:

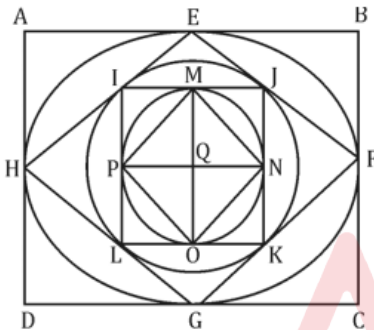
$$6^3 + 5^2 = 216 + 25 = 241$$

Third row:

$$2^3 + 11^2 = 8 + 121 = 129$$

**S30. Ans.(c)**

**Sol.**



**S31. Ans.(a)**

**Sol.** Pattern followed:

$$16 \times 5 = 80 - 11 = 69$$

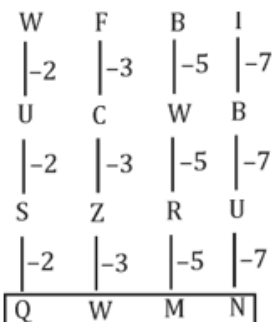
$$31 \times 5 = 155 - 11 = 144$$

Similarly,

$$24 \times 5 = 120 - 11 = 109$$

**S32. Ans.(a)**

**Sol.**



**S33. Ans.(c)**

**Sol.** Pattern followed:

$$(16 \times 2)^2 = 1024$$

$$(14 \times 2)^2 = 784$$

$$(18 \times 2)^2 = 1296 \neq 1620$$

$$(12 \times 2)^2 = 576$$

**S34. Ans.(d)**

**Sol.** (13B9) D3A (14D7) B6C21A (32 B2)

$$= (13 \times 9) \div 3 + (14 \div 7) \times 6 - 21 + (32 \times 2)$$

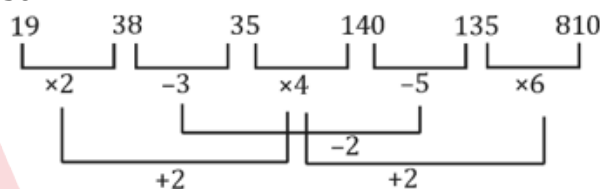
$$= 117 \div 3 + 2 \times 6 - 21 + 64$$

$$= 39 + 12 - 21 + 64$$

$$= 94$$

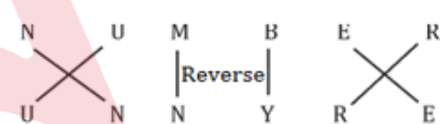
**S35. Ans.(d)**

**Sol.**



**S36. Ans.(c)**

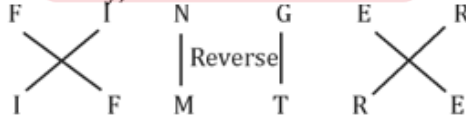
**Sol.**



and

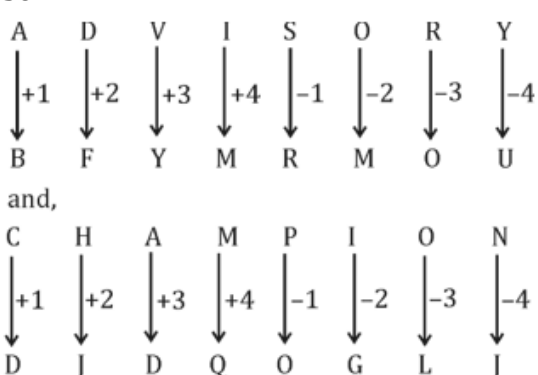


Similarly,



**S37. Ans.(c)**

**Sol.**



Similarly,

D	E	S	I	G	N	E	R
↓ +1	↓ +2	↓ +3	↓ +4	↓ -1	↓ -2	↓ -3	↓ -4
E	G	V	M	F	L	B	N

**S38. Ans.(d)**

**Sol.** Pattern followed:

$$24 \times (-8) = -192$$

$$-31 \times (-8) = 248$$

$$-18 \times (-8) = 144$$

**S39. Ans.(a)**

**Sol.**

**S40. Ans.(d)**

**Sol.**

W	V	E
↓ -2	↓ -2	↓ +2
U	T	G
↓ -2	↓ -2	↓ +2
S	R	I
↓ -2	↓ -2	↓ +2
Q	P	K
↓ -2	↓ -2	↓ +2
O	N	M

**S41. Ans.(a)**

**Sol.**

**S42. Ans.(a)**

**Sol.**

K	I	T	C	H	E	N
↓ +1	↓ -1	↓ +1	↓ -1	↓ +1	↓ -1	↓ +1
L	H	U	B	I	D	O

and,

H	U	S	B	A	N	D
↓ +1	↓ -1	↓ +1	↓ -1	↓ +1	↓ -1	↓ +1
I	T	T	A	B	M	E

Similarly,

E	L	E	M	E	N	T
↓ +1	↓ -1	↓ +1	↓ -1	↓ +1	↓ -1	↓ +1
F	K	F	L	F	M	U

**S43. Ans.(d)**

**Sol.**

F A	M O	U S
↘ ↗	↘ ↗	↘ ↗
A F	O M	S U

and,

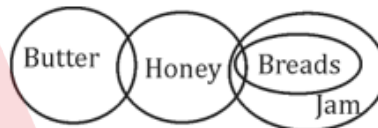
F I	N G	E R
↘ ↗	↘ ↗	↘ ↗
I F	G N	R E

Similarly,

I N	V E	S T
↘ ↗	↘ ↗	↘ ↗
N I	E V	T S

**S44. Ans.(d)**

**Sol.**



Conclusions:

I. True

II. False

III. False

Hence, only conclusion I follows.

**S45. Ans.(d)**

**Sol.** Since, the dates are same.

$$\therefore \text{Total odd days from 2007 to 2011} = 4 + 1 (\text{Leap year}) = 5$$

Thus, Thursday + 5 = Tuesday

**S46. Ans.(a)**

**Sol.**

**S47. Ans.(a)**

**Sol.** According to sequence in dictionary:

4. Abduction
3. Addiction
1. Adequate
2. Adoption
5. Advertisement

**S48. Ans.(b)**

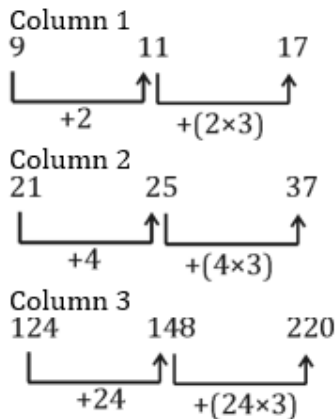
**Sol.** On observing dices, we get:

3 is opposite to 1.



**S49. Ans.(d)**

**Sol.** Pattern followed:



**S50. Ans.(d)**

**Sol.**  $361 - 29 = 332$

$$533 - 29 = 504$$

$$440 - 29 = 411$$

But,

$$520 - 29 = 491 \neq 481$$

**S51. Ans.(d)**

**Sol.**  $(4^3 + 4) \div [5^2 - (7^2 - 41)]$

$$= (64 + 4) \div [5^2 - (49 - 41)]$$

$$= 68 \div [25 - 8]$$

$$= 4$$

**S52. Ans.(b)**

**Sol.** Let the fourth proportional to 5, 6 and 8 be x.

Then,

$$\frac{5}{6} = \frac{8}{x}$$

$$\Rightarrow x = \frac{8 \times 6}{5} = \frac{48}{5} = 9.6$$

**S53. Ans.(c)**

**Sol.**

$$\text{Length of carton} = 48 \text{ inches} = \frac{48}{12} = 4 \text{ feet}$$

$$\text{Width of carton} = 27 \text{ inches} = \frac{27}{12} = 2.25 \text{ feet}$$

$$\text{Height of carton} = \frac{\text{volume}}{L \times B} = \frac{22.5}{4 \times 2.25} = 2.5 \text{ feet}$$
$$= 2.5 \times 12 = 30 \text{ inches}$$

**S54. Ans.(b)**

**Sol.** Cost of mixed wheat =  $20 \times 7 = \text{Rs. } 140$

Cost of Rs.18 per kg wheat =  $18 \times 5 = \text{Rs. } 90$

$\therefore$  Cost of 2kg of another type of wheat =  $140 - 90 = \text{Rs. } 50$

$$\text{Price (per kg) of the Costlier wheat} = \frac{50}{2} = \text{Rs. } 25$$

**S55. Ans.(b)**

**Sol.**

$$\cot 75^\circ = \cot (90 - 15) = \tan 15 [\because \cot (90 - a) = \tan a]$$

$$\Rightarrow 2 - \sqrt{3} = \frac{1}{\cot 15}$$

$$\therefore \cot 15 = \frac{1}{2 - \sqrt{3}} \times \frac{2 + \sqrt{3}}{2 + \sqrt{3}} = 2 + \sqrt{3}$$

**S56. Ans.(b)**

**Sol.** Let the amount of electricity bill be Rs. x

$$\text{Reduction} = 5\% \text{ of } x = 0.05x$$

$$\text{Now, } 0.05x = 20$$

$$\Rightarrow x = \frac{20}{0.05} = 400$$

**S57. Ans.(b)**

**Sol.**  $CP + 12\% \text{ of } CP = MP - 10\% \text{ of } MP$

$$\Rightarrow \frac{112 \text{ CP}}{100} = \frac{90 \text{ MP}}{100}$$

$$\Rightarrow \frac{CP}{MP} = \frac{90}{112} = \frac{45}{56}$$

$\therefore$  Ratio of the cost price to the printed price is 45 : 56

**S58. Ans.(a)**

**Sol.** Distance between police and thief = 225 m

$$= 0.225 \text{ km}$$

$$\text{Relative speed} = 13 - 11 = 2 \text{ km/h}$$

$$\text{Time} = \frac{\text{Distance}}{\text{Speed}} = \frac{0.225}{2} = 0.1125 \text{ hour}$$

$$\text{Distance travelled by thief} = \text{Speed} \times \text{Time}$$

$$= 11 \times 0.1125 = 1.2375 \text{ km}$$

$$= 1237.5 \text{ metres}$$

**S59. Ans.(a)**

**Sol.** If the sum of the digits of a number is multiple of 3 the number is divisible by 3.

Option A:

$$7345932 \Rightarrow 7 + 3 + 4 + 5 + 9 + 3 + 2 = 33$$

Since, 33 is multiple of 3

$\therefore$  7345932 is divisible by 3

**S60. Ans.(a)**

**Sol.**

$$\text{Amount} = P \left( 1 + \frac{r}{100} \right)^n$$

$$10890 = P \left( 1 + \frac{r}{100} \right)^2 \quad \dots(i)$$

$$11979 = P \left( 1 + \frac{r}{100} \right)^3 \quad \dots(ii)$$

Dividing (ii) by (i), we get:

$$\frac{11979}{10890} = \frac{P \left( 1 + \frac{r}{100} \right)^3}{P \left( 1 + \frac{r}{100} \right)^2}$$

$$\Rightarrow \frac{11}{10} = \left(1 + \frac{r}{100}\right)$$

$$\Rightarrow r = 10\%$$

$$\text{Now, } 10890 = P \left(1 + \frac{10}{100}\right)^2$$

$$\Rightarrow 10890 = P \left(\frac{11}{10}\right)^2$$

$$\Rightarrow P = \frac{10890 \times 100}{121} = 9000$$

**S61. Ans.(c)**

**Sol.** Average production of company P in 2017-19

$$= \frac{25+50+40}{3} = \frac{115}{3}$$

Average production of company Q in 2017-19

$$= \frac{35+40+50}{3} = \frac{125}{3}$$

$$\text{Ratio} = \frac{115}{3} : \frac{125}{3} = 23:25$$

**S62. Ans.(c)**

**Sol.** Number of students who were Violet

$$\text{Coloured dress} = 60 \times \frac{10}{100} = 6$$

**S63. Ans.(b)**

**Sol.** Let the weight of the teacher be x.

Then,

$$\frac{(39 \times 51) + x}{40} = 51.2$$

$$\Rightarrow 1989 + x = 2048$$

$$\Rightarrow x = 2048 - 1989 = 59 \text{ kg}$$

**S64. Ans.(a)**

**Sol.**

$$\text{Amount} = P \left(1 + \frac{r}{100}\right)^n$$

$$\Rightarrow 3364 = P \left(1 + \frac{16}{100}\right)^2$$

$$\Rightarrow 3364 = P \left(\frac{29}{25}\right)^2$$

$$\Rightarrow P = \frac{3364 \times 625}{841} = 2500$$

**S65. Ans.(b)**

**Sol.**

$$\text{Surface area of sphere} = 4\pi r^2$$

$$\Rightarrow 1386 = 4 \times \frac{22}{7} \times r^2$$

$$\Rightarrow r^2 = \frac{1386 \times 7}{88}$$

$$\Rightarrow r = \sqrt{110.25} = 10.5$$

**S66. Ans.(d)**

**Sol.** Let the numerator be x and denominator be y.

According to question

$$\frac{x + \left(x \times \frac{50}{100}\right)}{y - \left(y \times \frac{28}{100}\right)} = \frac{25}{36}$$

$$\Rightarrow \frac{1.5x}{0.72y} = \frac{25}{36}$$

$$\Rightarrow \frac{x}{y} = \frac{25}{36} \times \frac{0.72}{1.5} = \frac{1}{3}$$

**S67. Ans.(d)**

$$\text{Sol. } (957 + 932)^2 - 4 \times 957 \times 932$$

$$= (957 - 932)^2 [\because (a+b)^2 - 4ab = (a-b)^2]$$

$$= 25^2 = 625$$

**S68. Ans.(d)**

**Sol.** Surface area of sphere =  $4\pi r^2$

$$\Rightarrow 64\pi = 4\pi r^2$$

$$\Rightarrow r^2 = 16$$

$$\Rightarrow r = 4 \text{ cm}$$

$$\text{Volume of sphere} = \frac{4}{3}\pi r^3$$

$$= \frac{4}{3} \times \pi \times 4 \times 4 \times 4$$

$$= \frac{256\pi}{3} \text{ cm}^3$$

**S69. Ans.(b)**

**Sol.** CP = Rs. 560

$$SP = 560 + \left(560 \times \frac{20}{100}\right) = \text{Rs. } 672$$

$$MP = 672 + 28 = \text{Rs. } 700$$

If article is sold at MP, then

$$\text{Profit\%} = \frac{(700-560)}{560} \times 100 = 25\%$$

**S70. Ans.(a)**

**Sol.**

$$x + \frac{1}{x} = -2\sqrt{3}$$

Squaring both sides

$$\left(x + \frac{1}{x}\right)^2 = (-2\sqrt{3})^2$$

$$\Rightarrow x^2 + \frac{1}{x^2} + 2 = 12$$

$$\Rightarrow x^2 + \frac{1}{x^2} = 10$$

$$x + \frac{1}{x} = -2\sqrt{3}$$

Cubing both sides

$$\left(x + \frac{1}{x}\right)^3 = (-2\sqrt{3})^3$$

$$\Rightarrow x^3 + \frac{1}{x^3} + 3\left(x + \frac{1}{x}\right) = -24\sqrt{3}$$

$$\Rightarrow x^3 + \frac{1}{x^3} + 3(-2\sqrt{3}) = -24\sqrt{3}$$

$$\Rightarrow x^3 + \frac{1}{x^3} = -24\sqrt{3} + 6\sqrt{3} = -18\sqrt{3}$$

$$\left(x^3 + \frac{1}{x^3}\right)\left(x^2 + \frac{1}{x^2}\right) = x^5 + \frac{1}{x^5} + x + \frac{1}{x}$$

$$\Rightarrow (-18\sqrt{3}) \times 10 = x^5 + \frac{1}{x^5} - 2\sqrt{3}$$

$$\Rightarrow x^5 + \frac{1}{x^5} = -180\sqrt{3} + 2\sqrt{3} = -178\sqrt{3}$$

**S71. Ans.(b)**

**Sol.** LCM of 4 and 12 = total work = 12 units

Efficiency of Avi = 3 units/per hours

Efficiency of Bindu = 1 units/per hours

In 2 hours work completed = 4 units

Then,

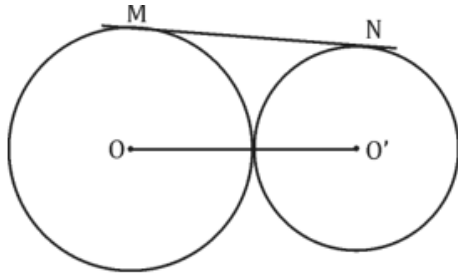
In 6 hours work completed = 12 units

Now,

5 A.M + 6 hours = 11 A.M

**S72. Ans.(b)**

**Sol.** Distance between centre =  $12 + 8 = 20$  cm



$$\begin{aligned}\text{Length of common tangent} &= 2\sqrt{r_1 r_2} \\ &= 2\sqrt{12 \times 8} \\ &= 2 \times 4\sqrt{6} = 8\sqrt{6} \text{ cm}\end{aligned}$$

**S73. Ans.(a)**

**Sol.**  $a + 2b = 27$

Cubing both sides

$$(a + 2b)^3 = 27^3$$

$$\Rightarrow a^3 + 8b^3 + 3 \times a \times 2b (a + 2b) = 19683$$

$$\Rightarrow 5427 + 6ab \times 27 = 19683$$

$$\Rightarrow 2ab \times 81 = 19683 - 5427$$

$$\Rightarrow 2ab = \frac{14256}{81} = 176$$

**S74. Ans.(c)**

**Sol.** Average of the sales over 5 years

$$\begin{aligned}&= \frac{45+54+57+60+69}{5} \\ &= \frac{285}{5} = 57\end{aligned}$$

In 2017 sales are equal to the average of the sales over 5 years.

**S75. Ans.(b)**

**Sol.** Let total number of eligible voters be  $x$ .

Number of voters who cast their votes = 80% of  $x = 0.8x$

Number of Invalid votes = 5% of  $0.8x = 0.04x$

Number of valid votes =  $0.8x - 0.04x = 0.76x$

Now, According to question

$$0.76x \times \frac{75}{100} = 10545$$

$$\Rightarrow \frac{57x}{100} = 10545$$

$$\Rightarrow x = \frac{10545 \times 100}{57} = 18500$$

**S76. Ans.(c)**

**Sol.** The National Biodiversity Authority is a statutory autonomous body under the Ministry of Environment, Forests and climate change, Government of India established in 2003 to implement the provisions of the Biological Diversity Act, 2002.

- India signed Convention on Biological Diversity in 1992.
- It is Headquartered in

**S77. Ans.(a)**

**Sol.** From the given options, Avani Lekhara won the Major Dhyan Chand Khel Ratna Award 2021, the highest sporting honour in India.

- Avani Lekhara is an Indian Paralympian and rifle shooter. She won a Gold Medal in the 10m air rifle standing and a Bronze Medal in the 50m rifle 3 positions at Tokyo 2020 Paralympics.
- She is the first Indian woman to win multiple medals in a single Paralympic Games.

**S78. Ans.(d)**

**Sol.** Satish Vyas won the Tansen Samman 2020.

- Satish Vyas is an Indian santoor player. He is the son of the Indian classical singer C. R. Vyas.

**S79. Ans.(b)**

**Sol.** The term 'checkmate' is used in the game of chess.

**S80. Ans.(a)**

**Sol.** Shashi Tharoor received the Sahitya Akademi Award (Non-fiction) for his book 'An Era of Darkness' in 2019.

- Shashi Tharoor is an Indian former international civil servant, diplomat, bureaucrat, politician, writer, and public intellectual.
- He has been serving as a Member of Parliament for Thiruvananthapuram, Kerala, since 2009.

**S81. Ans.(a)**

**Sol.** Shambhu Maharaj was Awarded the Padma Shri for his contribution to Kathak Dance.

- Pandit Shambhu Maharaj was a Guru of the Lucknow Gharana (school) of the Indian classical dance form, Kathak.
- Kathak is one of the eight major forms of Indian classical dance. It is the classical dance form of Uttar Pradesh.

**S82. Ans.(b)**

**Sol.** On 21st January 2022, three states, Tripura, Meghalaya, and Manipur observed their 50th Statehood Day.

- On 21<sup>st</sup> January 1972, these three states, Tripura, Meghalaya, and Manipur, came into existence.

**S83. Ans.(d)**

**Sol.** In optics, the refractive index of a substance is described by the formula  $n = c/v$ ,

where  $c$  is the speed of light in a vacuum.

- The speed of light in vacuum, commonly denoted as  $c$ , is a universal physical constant that is exactly equal to 299,792,458 meters per second (approximately 300,000 kilometers per second or  $3 \times 10^8$  meters per second).

**S84. Ans.(c)**

**Sol.** From the given options, Kalidas Samman is not given in the field of Puppetry.

- The Kalidas Samman is an arts award presented annually by the government of Madhya Pradesh in India.
- The Kalidas Samman was first awarded in 1980. It is conferred in the fields of Classical Music, Classical Dance, Theatre, and Plastic Arts, every year.

**S85. Ans.(d)**

**Sol.** The Siberian Shelf is a coastal shelf in the Arctic Ocean and is the largest continental shelf of the Earth, a part of the continental shelf of Russia.

- The world's largest continental shelf extends 1,500 km (about 930 miles) from the coast of Siberia into the Arctic Ocean.
- A continental shelf is a portion of a continent that is submerged under an area of relatively shallow water, known as a shelf sea.

**S86. Ans.(a)**

**Sol.** For an NBFC- MFI, the maximum variance permitted for individuals between the minimum and maximum interest rates cannot exceed 4 percent.

- NBFC- MFI stands for Non-Banking Financial Company -Micro Finance Institutions.

**S87. Ans.(c)**

**Sol.** Rukmini Devi Arundale was the first woman classical dancer in independent India to be nominated as a member of the Rajya Sabha.

- Rukmini Devi Arundale was an Indian theosophist, dancer, and choreographer of the Indian classical dance form of Bharatanatyam, and an activist for animal welfare.
- She was the first woman in Indian history to be nominated as a member of the Rajya Sabha, the upper house of the Parliament of India.

**S88. Ans.(a)**

**Sol.** French chemist Joseph Proust summarised his experiment in 1806 and proved that the mass ratio of elements in a chemical compound is always the same, regardless of the source of the compound.

- He is best known for his discovery of the law of definite proportions in 1794, stating that chemical compounds always combine in constant proportions.

**S89. Ans.(a)**

**Sol.** Pandit Shiv Kumar Sharma is credited with single-handedly making the santoor a popular classical instrument. Shiv Kumar Sharma's name is synonymous with santoor, Indian classical music instrument.

**S90. Ans.(c)**

**Sol.** "The State shall not discriminate against any citizen on grounds only of religion, race, caste, sex, place of birth or any of them". This has been incorporated in Article 15 of the Indian Constitution.

**S91. Ans.(c)**

**Sol.** EM Subramaniam was an exponent of the ghatam, a musical instrument.

- He has been a grade A ghatam artist of All India Radio.
- Subramaniam was awarded the title of "Kalaimamani" in 2000 and recognized with a Sangeet Natak Akademi Award in ghatam in 2011.
- The ghatam is one of the most ancient percussion instruments of India. It is a clay pot with a narrow mouth.

**S92. Ans.(a)**

**Sol.** The renowned sitarist Pandit Ravi Shankar is well known for having contributed significantly to the global appreciation of Hindustani classical music.

- Pandit Ravi Shankar is credited for promoting *jugalbandi*, a style of musical dialogue.
- Shankar was awarded India's highest civilian honour, the Bharat Ratna, in 1999.

**S93. Ans.(c)**

**Sol.** The Borra caves near Visakhapatnam in Andhra Pradesh are a fine example of lime stone caves.

- The Borra Caves are located in the Ananthagiri hills of the Araku Valley.
- Extending to a depth of 80 m (260 ft), these caves are considered the deepest caves in India.

**S94. Ans.(b)**

**Sol.** Jayaprabha Menon was given the Devadasi National Award in 2013.

- **Jayaprabha Menon** is famous for the Mohiniattam.

**S95. Ans.(b)**

**Sol.** Nitromethane, sometimes shortened to simply "nitro", is an organic compound with the chemical formula  $\text{CH}_3\text{NO}_2$ .

- it is used widely in the manufacture of pesticides, explosives, fibers, and coatings.
- Nitromethane is also used as a fuel additive in various motorsports.

**S96. Ans.(b)**

**Sol.** "The Road Ahead" is an autobiography of Bill Gates.

- Bill Gates is an American business magnate and philanthropist. He is a co-founder of Microsoft, along with his late childhood friend Paul Allen.
- The book was published in 1995.

**S97. Ans.(a)**

**Sol.** Funaria is a type of bryophyte that lives in many environments and is characterized by its small, flattened leaves, root-like rhizoids, and peristome.

- Funaria is a genus of approximately 210 species of moss. Funaria hygrometrica is the most common species.
- The name is derived from the Latin word "funis", meaning "a rope".

**S98. Ans.(d)**

**Sol.** Ministry of Petroleum and Natural Gas and Steel was held by Dharmendra Pradhan before he became Cabinet Minister of Education, Skill Development and Entrepreneurship in July 2021.

- Pradhan was promoted to Cabinet Minister on 3 September 2017. He currently represents Madhya Pradesh in the Rajya Sabha as a Member of Parliament. Earlier, he was a member of the 14th Lok Sabha.

**S99. Ans.(a)**

**Sol.** 'Romancing with Life' an Autobiography of Dev Anand, was written by the famous classic Indian actor Dev Anand of Hindi films.

- Dev's autobiography Romancing with Life was released in September 2007, at a birthday party with the Indian Prime Minister Dr. Manmohan Singh.

**S100. Ans.(d)**

**Sol.** From the given options, Squash is a game played with a racket.

- Squash is a racket-and-ball sport played by two or four players in a four-walled court with a small, hollow, rubber ball.

