

200 Questions PDF for SBI PO Prelims 2022 Quantitative Aptitude

Directions (1 - 15): What approximate value should come in place of Question mark (?) in the following equation?

Q1. $\frac{25\% \text{ of } 295.7 \times 32.02}{?} = \frac{36.99}{25\% \text{ of } \frac{1}{4}}$

- (a) 2
- (b) 4
- (c) 6
- (d) 8
- (e) 1

Q2. $\frac{\sqrt[3]{404.99 \times 315.01 \times 245.40}}{\sqrt{33\frac{1}{3}\% \text{ of } 26.99}} = ?$

- (a) 100
- (b) 105
- (c) 110
- (d) 115
- (e) 95

Q3. $19.66\% \text{ of } 144.87 - \frac{266.47}{118.84} \times \frac{17}{18.84} = ?^3$

- (a) 5
- (b) 7
- (c) 0
- (d) 3
- (e) 6

Q4. $\sqrt{82} \div 8.76 \div 9.25 \times 3.76 + \frac{181}{91.10} \times \frac{473.92}{237.40} + 7.91 = ?^{\frac{1}{2}}$

- (a) 100
- (b) 400
- (c) 256
- (d) 169
- (e) 196

Q5. $6739 + 161 \times 4.966 - 74.99 \times 11.888 + 20\% \text{ of } 121 - 10\% \text{ of } 109 = ?$

- (a) 6657
- (b) 7067
- (c) 7167
- (d) 6587
- (e) 6757

Q6. $\sqrt{63.82 \times 36.01} + 419.92 \div 5.84 - 540 = ? - 799.98$

- (a) 426
- (b) 378
- (c) 526
- (d) 328
- (e) 448

Q7. $15.812\% \text{ of } 1600.125 + ?\% \text{ of } 1199.98 = 19.88 \times 121.98$

- (a) 182
- (b) 142
- (c) 326
- (d) 286
- (e) 216

Q8. $(7.98)^3 + (14.88)^2 - (12.01)^2 = ? - 1219.812 - 1749.98$

- (a) 3643
- (b) 3425
- (c) 3416
- (d) 3563
- (e) 3521

Q9. $19.825 \times \sqrt{7} = 63.91\% \text{ of } 399.98 + 11.95\% \text{ of } 1200.01$

- (a) 300
- (b) 500
- (c) 420
- (d) 350
- (e) 400

Q10. $(?)^2 + 14.01\% \text{ of } 1599.98 = 59.01 \times 12.025$

- (a) 18
- (b) 28
- (c) 22
- (d) 36
- (e) 32

Q11. $?\% \text{ of } 7999.97 + (41.07)^2 - 29.98\% \text{ of } 4149.89 = (25.91)^2$

- (a) 5
- (b) 3
- (c) 2
- (d) 4
- (e) 1

Q12. $\frac{249.83 + ?}{49.97} + 416.99 + (19.87)^2 = (24.87)^2 + 20.09 \times 9.98$

- (a) 154
- (b) 150
- (c) 158
- (d) 162
- (e) 156

Q13. $(21.87)^2 + 12.493 \times 19.89 - \sqrt{15624.98} - (?)^2 \text{ of } 3.96 = (14.96)^2$

- (a) 4
- (b) 6
- (c) 12
- (d) 8
- (e) 10

- Q14.** $\frac{9899}{10.98 \times \sqrt{9.03}} \times \sqrt{678 + 485} \times 0.01 + 97.88 = 80\%$ of ?
 (a) 240
 (b) 260
 (c) 250
 (d) 230
 (e) 270

- Q15.** $\frac{5435.99}{302.12} + \sqrt{323.898} + 53.89 + 35.98\%$ of 1000 = $\frac{108.11}{5.99} \times ? + 216.05$
 (a) 10
 (b) 12
 (c) 15
 (d) 13
 (e) 18

Direction (16-25): What will come in place of question mark(?) in the following questions?

- Q16.** 55% of 900 + 70% of 1050 = ?% of 3000
 (a) 41
 (b) 42
 (c) 43
 (d) 44
 (e) 45

- Q17.** 73823 - 34156 + 4756 + 6758 - 9849 = 41499 - 160 - ?
 (a) 5
 (b) 7
 (c) 4
 (d) 8
 (e) 6

- Q18.** $\frac{5599}{1331} \times \frac{3773}{2036} \times \frac{88}{49} = ? - 6^2$
 (a) 44
 (b) 46
 (c) 48
 (d) 50
 (e) 52

- Q19.** $84 \times \frac{1}{4} \div 21^2 + ? = \frac{7}{147} \times 21 - \frac{20}{21}$
 (a) 2
 (b) 1
 (c) 0
 (d) 3
 (e) 4

- Q20.** $\sqrt{5776} - \sqrt{1444} + \sqrt{729} = 43 + ?$
 (a) 25
 (b) 20
 (c) 26
 (d) 24
 (e) 22

- Q21.** $1396 + 412 - 2704 = ? - (31)^2$
 (a) 28
 (b) 45
 (c) 65
 (d) 85
 (e) 98

- Q22.** $78 \times 26 \div 6 + 1262 = 1311 + (?)^2$
 (a) 17
 (b) 22
 (c) 15
 (d) 13
 (e) 19

- Q23.** $1484 \div 28 + 1462 \div 34 - 12 \times 7 = ?$
 (a) 12
 (b) 14
 (c) 18
 (d) 16
 (e) 20

- Q24.** $42.5 \times 15 + 37.5 \times 25 = 1420 + ?$
 (a) 145
 (b) 165
 (c) 155
 (d) 170
 (e) 185

- Q25.** $2450 + 3760 - 3830 = 6000 - ?$
 (a) 3610
 (b) 3620
 (c) 3580
 (d) 3600
 (e) 3520

Directions (26-40): Find out the wrong number in the following number series.

- Q26.** 2030, 2050, 2000, 2100, 1900, 2300, 1500
 (a) 1500
 (b) 2030
 (c) 2050
 (d) 2100
 (e) 1900

- Q27.** 10, 6, 6, 9, 18, 45, 135
 (a) 9
 (b) 18
 (c) 135
 (d) 10
 (e) 45

Q28. 337,318,301,278, 249,218,181

- (a) 318
- (b) 278
- (c) 301
- (d) 249
- (e) 218

Q29. 75,100,200,425,820,1450,2350

- (a) 2350
- (b) 425
- (c) 200
- (d) 820
- (e) 1450

Q30. 81, 100,130,171,223,285,360

- (a) 81
- (b) 285
- (c) 360
- (d) 171
- (e) 100

Q31. -18, 558, 958,1214,1358, 1422, 1436

- (a) 1436
- (b) -18
- (c) 558
- (d) 958
- (e) 1214

Q32. 15,75,129,191, 243,309,357

- (a) 15
- (b) 75
- (c) 309
- (d) 243
- (e) 357

Q33. 210,232,270,350, 510, 830,1470

- (a) 210
- (b) 1470
- (c) 270
- (d) 232
- (e) 830

Q34. 48, 144, 360,720,1040,1080,540

- (a) 1040
- (b) 144
- (c) 48
- (d) 720
- (e) 540

Q35. 19, 56, 166,494, 1474,4406,13184

- (a) 19
- (b) 13184

- (c) 166
- (d) 494
- (e) 4406

Q36. -18, 558, 958,1214,1358, 1422, 1436

- (a) 1436
- (b) -18
- (c) 558
- (d) 958
- (e) 1214

Q37. 15,75,129,191, 243,309,357

- (a) 15
- (b) 75
- (c) 309
- (d) 243
- (e) 357

Q38. 210,232,270,350, 510, 830,1470

- (a) 210
- (b) 1470
- (c) 270
- (d) 232
- (e) 830

Q39. 48, 144, 360,720,1040,1080,540

- (a) 1040
- (b) 144
- (c) 48
- (d) 720
- (e) 540

Q40. 19, 56, 166,494, 1474,4406,13184

- (a) 19
- (b) 13184
- (c) 166
- (d) 494
- (e) 4406

Direction (41 - 55) : What will come in the place of question mark (?) in the following number series :**Q41.** 7,19,33,51,71, ?

- (a) 95
- (b) 93
- (c) 90
- (d) 91
- (e) 97

Q42. ?, 226,394, 514,594,642

- (a) 5
- (b) 6
- (c) 1
- (d) 2
- (e) 4

Q43. 4, 20, 60, 160, ?, 1035

- (a) 410
- (b) 412
- (c) 408
- (d) 416
- (e) 418

Q44. 25, 40, 115, 235, 385, ?

- (a) 560
- (b) 520
- (c) 530
- (d) 548
- (e) 550

Q45. 12, 8, 10, 22, ?, 722

- (a) 88
- (b) 90
- (c) 86
- (d) 84
- (e) 96

Q46. 36, 49, 75, 114, 166, ?

- (a) 225
- (b) 218
- (c) 231
- (d) 244
- (e) 235

Q47. 1, 3, 9, 21, 41, ?

- (a) 61
- (b) 71
- (c) 83
- (d) 78
- (e) 68

Q48. 114, 110, 101, ?, 60, 24

- (a) 91
- (b) 84
- (c) 87
- (d) 85
- (e) 83

Q49. 343, ?, 125, 16, 27, 4

- (a) 216
- (b) 36
- (c) 49
- (d) 64
- (e) 81

Q50. ?, 36, 37, 76, 307, 2460

- (a) 35.5
- (b) 48
- (c) 35
- (d) 64
- (e) 72

Q51. 220, 430, 766, 1270, ?, 2980

- (a) 1950
- (b) 1990
- (c) 2040
- (d) 2090
- (e) 2130

Q52. 330, 450, 594, 762, 954, ?

- (a) 1130
- (b) 1080
- (c) 1200
- (d) 1170
- (e) 1180

Q53. ?, 80, 120, 300, 1050, 4725

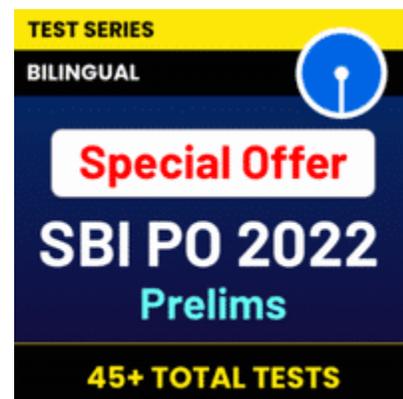
- (a) 160
- (b) 120
- (c) 40
- (d) 180
- (e) 100

Q54. 10800, 1800, 9000, 2250, ?, 3375

- (a) 5750
- (b) 6500
- (c) 7750
- (d) 8000
- (e) 6750

Q55. 240, 306, 380, ?, 552, 650

- (a) 472
- (b) 492
- (c) 512
- (d) 462
- (e) 542



Q56. A shopkeeper sells a product after allowing two successive discounts of 10% and 20% on it. Find the profit percent if the profit is 30% of the price by which the product is marked up?

- (a) 30%
- (b) 17.5%
- (c) 25%
- (d) 15%
- (e) 20%

Q57. 45% of first number is equal to 60% of second number. If average of both the numbers is 10 less than the first number, then find 80% of second number?

- (a) 64
- (b) 40
- (c) 48
- (d) 56
- (e) 80

Q58. Arun invested Rs. 10,000 for three years at CI at the rate of 20% per annum. If in 1st and 3rd year interest is calculated annually and in 2nd year it was calculated half-yearly, then find the total interest received by Arun in three years?

- (a) Rs 7554
- (b) Rs 7424
- (c) Rs 7868
- (d) Rs 7262
- (e) Rs 7343

Q59. Amit's present age is 75% of Binny's present age where as present age of Chintu is $\frac{5}{8}$ th of Binny's present age. If difference between difference of Chintu and Binny age and difference of Binny and Amit age is 6 years then find the average of their age two years later?

- (a) 44 years
- (b) 42 years
- (c) 36 years
- (d) 40 years
- (e) 38 years

Q60. Speed of boat in still water is 37.5% less than the speed of the boat in downstream and boat covers 30 km in upstream in 5 hours, then find time taken by boat to cover 84 km in downstream?

- (a) 3.5 hr
- (b) 3 hr
- (c) 4.5 hr
- (d) 4 hr
- (e) 5 hr

Q61. 25 lit of a mixture of acid 1 and acid 2 containing 55 % of acid 1 is mixed with 15 lit of another mixture containing 37 % of acid 2 to get a mixture D. Now mixture D is mixed with 30 lit of mixture C and percentage of acid 2 becomes 48%, then find percentage of acid 1 in mixture C. (all mixture containing acid 1 and acid 2 only)

- (a) 56 %
- (b) 44 %
- (c) 48%
- (d) 42%
- (e) 50%

Q62. A, B and C invests Rs. 92000, Rs. 115000 and Rs. 138000 in a business. At the end of year profit of A and B is given to a trust and profit of C is distributed among them in such a way that C gets $16\frac{2}{3}$ % of his total profit and rest is distributed between B and A in ratio 2:3 respectively. In this process B gets Rs. 30000. Find their total actual profit (In Rupees).

- (a) 150000
- (b) 300000
- (c) 225000
- (d) 200000
- (e) 175000

Q63. Manoj and Hemant purchased two bikes 18 years ago at different price. If price of their bike were decreasing at the rate of $5\frac{15}{17}$ % per year and Manoj sold his bike 2 years before Hemant, then their selling price became same. If difference between their purchasing price was 1320, then find purchasing price of Manoj's Bike. (Note – Both sold their bikes at depreciated prices and Hemant sold his bike after 18 years).

- (a) Rs 11560
- (b) Rs. 11060
- (c) Rs. 9000
- (d) Rs. 9200
- (e) Rs. 10240

Q64. Vikash and Mohit started from point A towards point Q. Distance between A and Q is 9 km. If Mohit starts after 4 min., then he will meet Vikash 1 km away from point Q at a time when Vikash is returning towards point A after reaching point Q and Vikash can cover 1 km in 6 min. find speed of Mohit in km/min.

- (a) $\frac{1}{7}$
- (b) $\frac{1}{8}$
- (c) $\frac{1}{9}$
- (d) $\frac{1}{6}$
- (e) $\frac{1}{12}$

Q65. A Boat is moving in downstream and speed of Boat in still water is 5 times speed of current. After 16 km due to technical problem speed of boat (in still water) reduced by 20 % and it cover 40 km distance with this speed. If average speed of whole journey is $\frac{7}{20}$ km/min, then find speed of current.

- (a) $4\frac{1}{8}$ km/hr
- (b) $2\frac{7}{10}$ km/hr
- (c) 4 km/hr
- (d) 5 km/hr
- (e) $4\frac{3}{8}$ km/hr

Q66. Two cards are drawn at random from a pack of 52 cards, then find the probability of getting one red face card and one black ace?

- (a) $\frac{1}{221}$
- (b) $\frac{2}{221}$
- (c) $\frac{76}{221}$
- (d) $\frac{91}{221}$
- (e) $\frac{5}{221}$

Q67. If side of a square is equal to height of equilateral triangle, then find ratio of area of equilateral triangle to area of square?

- (a) $\sqrt{2} : 5$
- (b) 3 : 5
- (c) $\sqrt{3} : 2$
- (d) 1 : $\sqrt{3}$
- (e) Data insufficient.

Q68. Deepak invested some amount on SI out of Rs.47000 and rest amount on C.I. for two years. If S.I. is offering 12% p.a. and C. I. is offering 15% p.a. compounding annually and C.I. is Rs.532.5 more than S.I., then find amount invested by Deepak on C.I.?

- (a) Rs.23000
- (b) Rs.22000
- (c) Rs.21000
- (d) Rs.25000
- (e) Rs.24000

Q69. B is twice as old as A. Average of present age of A and B is 24 years and average of present age of B and C is 38 years. Find present age of C is what percent less than present age of A and B together?

- (a) $4\frac{2}{9}\%$
- (b) $11\frac{6}{11}\%$
- (c) $5\frac{1}{5}\%$

- (d) $13\frac{2}{7}\%$
- (e) $8\frac{1}{3}\%$

Q70. Vessel-A and Vessel-B contains mixture of milk and water in the ratio of 2 : 3 and 5 : 3 respectively. When 50% mixture from Vessel-A and 40% mixture from Vessel-B taken out and mixed together, then the resulting mixture contains 36 liters of water and 36 liters of milk. Find ratio of quantity of water in Vessel-A to quantity of water in Vessel-B?

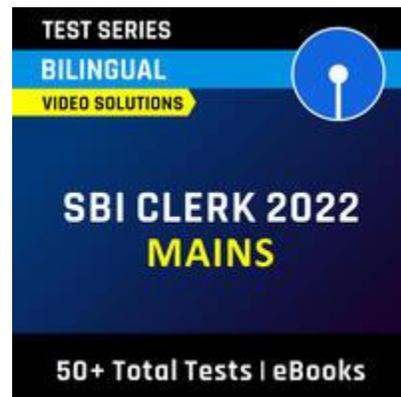
- (a) 8 : 5
- (b) 1 : 1
- (c) 2 : 3
- (d) 5 : 7
- (e) 9 : 5

Q71. A shopkeeper has two articles A & B. He sold A at Rs. 128 and cost price of article A is Rs. x and gains $(x - 20)\%$ in this transaction. If cost price of article B is 25% more than A, then find at what price shopkeeper should sold B to make of profit of 40%?

- (a) 118
- (b) 124
- (c) 136
- (d) 148
- (e) 140

Q72. The ratio of daily wage of three workers P, Q & R in 'MANREGA' is 21 : 16 : 18 respectively. If any of workers work on Sunday, then gets Rs. 125 extra on that day. The ratio of wage of P, Q&R for a weekday and Sunday is 26 : 21 : 23, then find the difference between wage of P&R on a weekday & Sunday (in Rs.) ?

- (a) 64
- (b) 75
- (c) 90
- (d) 125
- (e) 100



Q73. Veer invested an amount on simple interest, and it becomes two times of itself in 10 years. If Veer invested Rs. X at the same rate of interest on CI and he gets Rs. 5324 as amount after three years, then find amount invested by Veer (in Rs.)?

- (a) 4400
- (b) 3600
- (c) 4800
- (d) 4000
- (e) 3000

Q74. Seven people chosen for Kho -Kho team from a group of 8 boys and 6 girls. In how many ways 3 boys and 4 girls can be chosen for Kho -Kho team ?

- (a) 92
- (b) 696
- (c) 768
- (d) 840
- (e) 864

Q75. Train-A crosses a pole in 9 seconds and Train-B which is 180m long and running at 150km/hr crosses Train-A in 57.6 seconds, when running in same direction. Then, find in how much time will Train-A cross Train-B when running in opposite direction?

- (a) 9.6 seconds
- (b) 8.2 seconds
- (c) 6.4 seconds
- (d) 5 seconds
- (e) 11.2 seconds

Q76. A pipe can fill a tank in 36 minutes & another pipe can fill it in 48 minutes, but a third Pipe can empty it in 18 minutes. The first two pipes are kept open for 16 minutes in the beginning then the third Pipe is also opened. In what time is the cistern emptied?

- (a) 120 min
- (b) 80 min
- (c) 96 min
- (d) 112 min
- (e) 144 min

Q77. A container contains two liquids A and B in the ratio 8 : 5 .When 13 liters of mixture is drawn off and is completely replaced with liquid B, then the ratio of A and B in the container becomes 1 : 1. How many liter of liquid A was in the container initially ?

- (a) 128/3 liter
- (b) 117 liter
- (c) 134/3 liter
- (d) 121/3 liter
- (e) 130 liter

Q78. A cricketer had a certain average of runs in 80 innings. In his 81st inning, he is bowled out for no score, due to which his average falls by 1 run. Then, find his new average of runs?

- (a) 50
- (b) 60
- (c) 70
- (d) 80
- (e) 90

Q79. A man can row at 14 km/hr. in still water and speed of stream is 2 km/hr. If it takes him 7 hr. to row to a place & to come back, then find how far is the place?

- (a) 36 km
- (b) 48 km
- (c) 28 km
- (d) 54 km
- (e) 42 km

Q80. A shopkeeper earns profit of $16\frac{2}{3}\%$ after selling a book at 12.5% discount on the printed price. Then, find the ratio of the cost price & printed price of the book?

- (a) 1 : 2
- (b) 2 : 3
- (c) 3 : 4
- (d) 4 : 5
- (e) 5 : 6

Q81. Hemant purchased some book and by selling 40% of total books he will get cost price of 80% books. If he sells 70% of remaining books at half of its initial profit percent and rest of the books remain unsold, find his overall profit %.

- (a) 40%
- (b) 45%
- (c) 75%
- (d) 3%
- (e) 63%

Q82. Shubham work for 5 days and remaining work was completed by Harvinder in 9 days. If Harvinder work for 12 days then remaining work was completed by Shubham in 3 days, then find how much time Harvinder will take to complete the work alone.

- (a) 11 days
- (b) $16\frac{1}{2}$ days
- (c) $16\frac{2}{3}$ days
- (d) $11\frac{1}{2}$ days
- (e) $6\frac{3}{5}$ days

Q83. In a bag there are 6 blue, 4 red and 5 green balls. Three balls are chosen at random with replacement, find probability of getting utmost one color.

- (a) $\frac{27}{125}$
- (b) $\frac{64}{125}$
- (c) $\frac{64}{3375}$
- (d) $\frac{1}{27}$
- (e) $\frac{3}{25}$

Q84. A large sphere of radius 'R' cm was converted into 64 small spheres of radius 'r' cm and then one small sphere is converted into 16 smaller cones of radius of 'a' cm. If height of cone is two times of its radius, then find R:a:r.

- (a) 6:1:2
- (b) 4:2:1
- (c) 8:1:2
- (d) 4:1:2
- (e) 16:1:4

Q85. Pankaj purchased 3575 balls and 2002 bats and cost price of one bat is equal to cost price of one ball. He sold ball in such a way that he can buy 850 balls by selling 799 balls and can buy 777 bats by selling 987 bats. Find approximate overall loss/profit percent earned by Pankaj by selling all balls and bats.

- (a) 4%
- (b) 5%
- (c) 7%
- (d) 6%
- (e) 9%

Q86. Efficiency of B is 40% more than efficiency of A and efficiency of C is 150% of efficiency of B. B alone can complete 40% of work in 6 days. Then, find in how many days 60% of the same work will be completed by A & C working together, if A is working with 5% more efficiency.

- (a) 4 days
- (b) 6 days
- (c) 5 days
- (d) 3 days
- (e) 7 days

Q87. A circle is inscribed in an equilateral triangle whose height is $3\sqrt{3}$ cm. Then, find the ratio of area of equilateral triangle to area of circle inscribed in an equilateral triangle.

- (a) $3\sqrt{3} : 4$
- (b) $4 : 3\sqrt{3}$
- (c) $5\sqrt{2} : 7\sqrt{3}$

- (d) Cannot be determined.
- (e) None of the above.

Q88. Ayush has 5 milky bar chocolates, 2 Silk Oreo chocolates & 8 Bournville chocolates. If he selected two chocolates randomly to eat, then find the probability of getting at most 1 Silk Oreo chocolate.

- (a) $\frac{33}{35}$
- (b) $\frac{104}{105}$
- (c) $\frac{6}{7}$
- (d) $\frac{19}{21}$
- (e) $\frac{14}{15}$

Q89. There are two mixture comprising milk and water. Ratio of milk to water in both mixture is 4 : 1. 50% of mixture - B is mixed in mixture - A, then quantity of water in the resulting mixture becomes 20 liters. Then, find ratio of total quantity of mixture - A to total quantity of mixture - B if total quantity of both the mixture is 140 lit.

- (a) 4 : 3
- (b) 3 : 4
- (c) 5 : 6
- (d) 6 : 5
- (e) None of the above.

Q90. Shivam invested Rs.15000 in two schemes offering R% p.a. S.I. for two years and difference of interest received from both schemes after 2 years is Rs.300. Had he invested Rs.4000 at R% p.a. S.I. for four years, then the interest received by him after four years is Rs.2400. Then, find difference of principal invested by Shivam in both the schemes.

- (a) Rs.4000
- (b) Rs.3000
- (c) Rs.7000
- (d) Rs.2000
- (e) Rs. 1000



Q91. A shopkeeper sells a car for Rs.52510 and incurs a loss of 11%. He sells another car at 5% profit. If on selling both the cars he neither earns profit nor incurs loss, then find the cost price of second car.

- (a) Rs.128300
- (b) Rs.129800
- (c) Rs.127400
- (d) Rs.126800
- (e) Rs.125200

Q92. Train – A can cross a 400m long platform in 36 seconds. Train – B crosses train – A in 66 seconds while running in same direction and train – B crosses a pole in $\frac{72}{7}$ seconds. If ratio of length of train – A to train – B is 5 : 6, then find time taken by train – A to cross a pole.

- (a) 12 seconds
- (b) 17 seconds
- (c) 11 seconds
- (d) 14 seconds
- (e) 19 seconds

Q93. There are four pipes connected to a tank – A, B, C and D. A & D are inlet pipes and B & C are outlet pipes. When all four pipes are opened together, then the tank will be filled in 40 minutes. When B & D are opened together, then the tank will be filled in 60 minutes. If D is twice as efficient than C and A is 25% more efficient than C, then find in how much time the tank will be filled when A & C are opened together?

- (a) 120 minutes
- (b) 100 minutes
- (c) 90 minutes
- (d) 70 minutes
- (e) None of the above.

Q94. When two dices are rolled simultaneously, then what will be the probability of getting sum more than 4 and less than 7?

- (a) $\frac{1}{3}$
- (b) $\frac{1}{6}$
- (c) $\frac{1}{18}$
- (d) $\frac{1}{4}$
- (e) $\frac{2}{9}$

Q95. Present age of C is 9 less than the sum of present age of A & B and 6 years hence, age of B will be twice of age of A. If C is 15 years older than B, then find present age of D (present age of D is 4 less than the average of present age of A, B & C).

- (a) 41 years

- (b) 45 years
- (c) 52 years
- (d) 59 years
- (e) 61 years

Q96. A ship is 108 km away from the shore when a leak appears on its bottom surface which admits 2.5 tons of water in 10 minutes. 40 tons of water is required to start sinking the ship but the pumps can throw out 2 tons of water in 12 minutes. Find the average rate of sailing at which ship must sail so that it may just reach the shore as it begins to sink.

- (a) 13.5 kmph
- (b) 16.5 kmph
- (c) 10 kmph
- (d) 15 kmph
- (e) 12.5 kmph

Q97. A & B together can finish a certain piece of work in 6 days. If A reduces his efficiency by 20 % and B increases his efficiency by 30 %, then work will be finish in same time. If A work with his original efficiency and B work with 2 times of his efficiency, then in how many days working together work will be finished?

- (a) 7 days
- (b) $4\frac{4}{7}$ days
- (c) $3\frac{2}{7}$ days
- (d) None of these
- (e) $4\frac{2}{7}$ days

Q98. There are two mixture each containing Tea, Sugar and Rice. First mixture contains $26\frac{2}{3}$ % rice and second mixture contain 35 % sugar. The percentage of tea in both mixtures are same. If 240 kg of first mixture is mixed with the 360 kg of second mixture, then the percentage of tea in resultant mixture is $33\frac{1}{3}$ %. Find the quantity of sugar in the resultant mixture?

- (a) 250 kg
- (b) 342 kg
- (c) 222 kg
- (d) 231 kg
- (e) 312 kg

Q99. Kapil and Pooja started a business. Kapil invested Rs. 80,000 and after 8 month he invests Rs. 40,000 more. Pooja invested Rs. 1,00,000 and withdraws Rs. 20,000 after 4 months. Pooja is an active partner, so she receives Rs. 2700 per month as salary. If profit share of Kapil after 1 year is Rs. 1,40,000. Then find profit share of Pooja (excluding salary) at the end of the year?

- (a) Rs. 1,62,400
- (b) Rs. 1,70,000

- (c) Rs. 1,32,400
- (d) Rs. 1,30,000
- (e) Rs. 1,44,400
- (f)

Q100. From numbers 1 to 15 two no. are selected what is the probability that both the selected no. are even numbers.

- (a) 0.20
- (b) 0.30
- (c) 0.25
- (d) 0.35
- (e) 0.40

Direction (101 - 105): Given below table shows total three types of items (A, B & C) sold by a store on five days of a week. Table also shows total type A items sold by store and percentage of items B and items C sold by store. Read the data carefully and answer following questions:

Note- only three types of items sold by the store.

Days	Items A	% of items B	% of items C
Monday	240	32%	20%
Tuesday	320	48%	12%
Wednesday	420	45%	20%
Thursday	360	56%	20%
Friday	340	22%	10%

Q101. Total items B sold by store on Monday & Friday together are what percent less than total items C sold by store on Wednesday & Thursday together?

- (a) 60%
- (b) 50%
- (c) 20%
- (d) 30%
- (e) 10%

Q102. Find the difference between average number of items B sold by store on Tuesday & Thursday and average number of items A sold by store on Thursday & Friday?

- (a) 260
- (b) 264
- (c) 262
- (d) 272
- (e) 268

Q103. If total items B sold by store on Sunday is 25% more than that sold on Thursday and total items C sold on Sunday is 300% more than that sold on Friday, then find total number of items B & items C sold by store on Sunday ?

- (a) 1250
- (b) 1150
- (c) 1050

- (d) 950
- (e) 1350

Q104. Total items C sold by store on Wednesday is what percent more than total items C sold by store on Monday and Tuesday together?

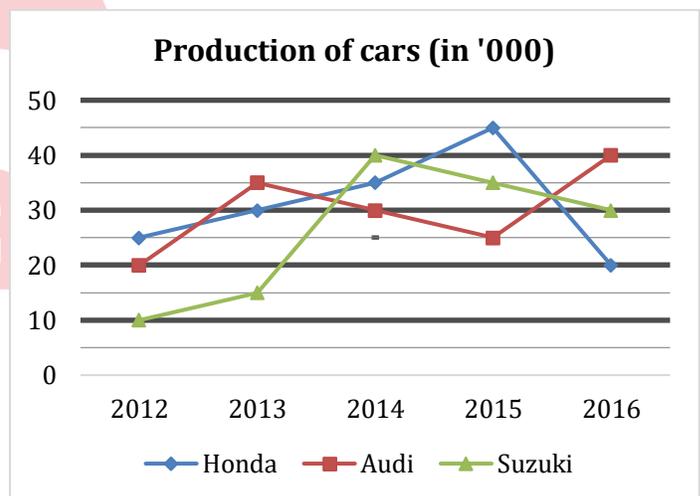
- (a) $26\frac{22}{49}\%$
- (b) $24\frac{22}{49}\%$
- (c) $22\frac{22}{49}\%$
- (d) $21\frac{22}{49}\%$
- (e) $18\frac{22}{49}\%$

Q105. Find the ratio between total items sold by store on Monday to total items sold by store on Thursday?

- (a) 1 : 5
- (b) 1 : 3
- (c) 1 : 7
- (d) 1 : 4
- (e) 1 : 2

Directions (106-110): Study the following line-graph carefully to answer the following questions.

Line-graph shows the production of cars i.e. Honda, Audi and Suzuki cars (in thousands) in 5 different years.



Q106. In year 2017, if demand of Audi and Suzuki cars increases by 4% and 5% respectively as compared to year 2015, due to which production of Audi and Suzuki cars also increases by same percentage and overall cars produced in year 2017 is same as overall cars produced in year 2015. Then find the no. of Honda cars produced in year 2017?

- (a) 48250
- (b) 52250
- (c) 42250
- (d) None of these
- (e) 42750

Q107. Total production of Audi cars in 2013, 2014 and 2015 together is what percent more or less than total production of Honda cars in same years together?

- (a) $18\frac{2}{11}$ % less
- (b) $20\frac{2}{11}$ % more
- (c) $18\frac{2}{11}$ % more
- (d) $22\frac{2}{9}$ % less
- (e) $22\frac{2}{9}$ % more

Q108. If 20%, 25% and 40% Suzuki cars are defective in year 2013, 2014 and 2016 respectively, then find total Suzuki cars which are not defective in all these years together?

- (a) None of these
- (b) 50000
- (c) 40000
- (d) 60000
- (e) 45000

Q109. If selling price of each Honda car and Suzuki car is Rs. 3.5 lakh and Rs. 4.5 lakh respectively. Then, find difference (in lakh) between total revenue generated from the sales of Honda cars and Suzuki cars in year 2012, 2013 and 2014 together. (all the cars produced were sold by these two companies)

- (a) Rs. 14500 lakh
- (b) Rs. 22500 lakh
- (c) Rs. 26500 lakh
- (d) Rs. 24500 lakh
- (e) None of these lakh

Q110. Find the difference between average of cars produced by Audi and Suzuki in all the five years.

- (a) 2000
- (b) 3000
- (c) 2500
- (d) 4000
- (e) 4500

Directions (Q111 -115) Table given below gives information about total no. of product sold by five companies, ratio of product sold in rural area to product sold in urban area by each company and also gives ratio of total mobile sold in rural area to total laptop sold in rural area by each company.

Company	Total product sold	Rural : urban (sold)	Mobile : laptop (sold in rural area)
MI	10010	5:6	8:5
LENOVO	77000	8:3	3:4

MICROSOFT	14300	15:7	22:30
HP	91000	6:7	33:19
APPLE	20020	4:3	67:76

Q111. In rural area, no. of mobile sold by MI is how much less than no. of laptop sold by Apple.

- (a) 5360
- (b) 2560
- (c) 2800
- (d) 3280
- (e) 6080

Q112. If 650 laptops for MICROSOFT are defected and after selling non-defective laptop company earns no profit no loss on total quantity. Find selling price of laptop was how much percent more than C.P.(for MICROSOFT ratio of mobile sold to laptop sold is 15:7)

- (a) $16\frac{2}{3}$ %
- (b) $14\frac{2}{7}$ %
- (c) 12%
- (d) 18%
- (e) $14\frac{1}{7}$ %

Q113. Find ratio of average no. of mobile sold by MI, MICROSOFT and APPLE in rural area to no. of product sold by LENOVO in urban area.

- (a) 39 : 200
- (b) 39 : 193
- (c) 13 : 85
- (d) 200 : 39
- (e) 193 : 39

Q114. Average no. of product sold by all companies is how much more or less than total product sold by HP in urban area.

- (a) 6543 less
- (b) 6534 more
- (c) 6354 more
- (d) 6534 less
- (e) 6543 more.

Q115. If ratio of mobile sold by MI to laptop sold by MI in urban area is 16 : 23, then find no. of laptop sold by APPLE in rural area is what part of laptop sold by MI in urban area.

- (a) $\frac{304}{261}$
- (b) $\frac{161}{261}$
- (c) $\frac{304}{161}$
- (d) $\frac{161}{304}$
- (e) $\frac{161}{261}$

Directions (116-120): Given table shows the population of a colony in various age group at the end of five different years. No people since 2008 have left, come from outside and also no people have died during these years.

Age group	2014	2015	2016	2017	2018
0-5	30	29	31	32	33
6-20	25	27	29	28	27
21-35	28	26	32	33	32
36-50	22	23	20	20	23
51-65	20	22	24	26	27
≥66	35	36	40	42	47

Q116. Find the number of children who have taken birth in 2015?

- (a) 1
- (b) 2
- (c) 3
- (d) 4
- (e) Can't be determined

Q117. Find the number of children who have taken birth in 2012?

- (a) Can't be determined
- (b) 7
- (c) 1
- (d) 11
- (e) 13

Q118. Find the number of people increased in 2018 over the year 2015?

- (a) 26
- (b) 22
- (c) 34
- (d) 30
- (e) 28

Q119. Find number of people whose age group from 21-35 in 2015 is changed to age group of 36-50 in 2016?

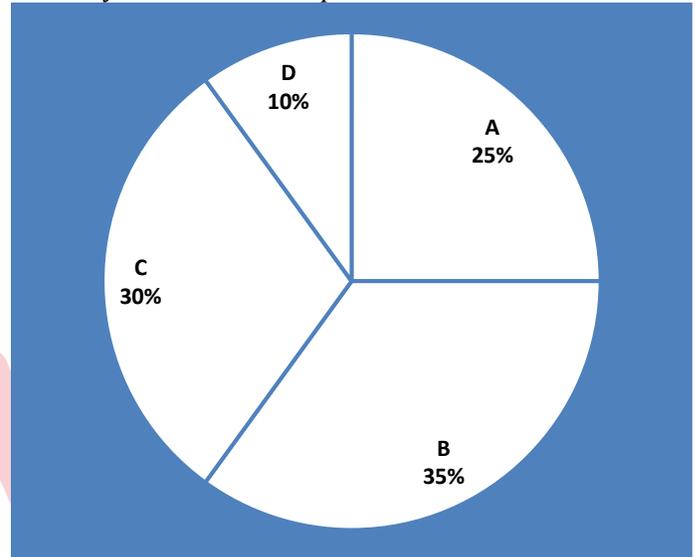
- (a) 6
- (b) 5
- (c) 4
- (d) Can't be determined
- (e) 3

Q120. Find the difference between number of people whose age is more than 20 years in 2017 and the number of people whose age is less than 51 years in 2018?

- (a) 5

- (b) 6
- (c) 7
- (d) 8
- (e) 9

Direction (121 – 125): Pie chart shows income distribution of four earning member of a family out of total family income in the year 2016. Read the data carefully and answer the questions.



Q121. If A and C expend 80% and 60% of their income respectively and total saving of both is Rs. 40800, then find the income of C?

- (a) 72000 Rs.
- (b) 78000 Rs.
- (c) 54000 Rs.
- (d) 90000 Rs.
- (e) 60000 Rs.

Q122. If income of B and D increased by 20% and 40% in the year 2017 over the previous year, then find the ratio of total income of B & D together in 2016 to that of in 2017?

- (a) 3 : 4
- (b) 45 : 56
- (c) 45 : 53
- (d) 47 : 56
- (e) 6 : 7

Q123. If expenditure of A and B is same, then find difference between saving of A and B is what percent of income of D?

- (a) 112%
- (b) 125%
- (c) 150%
- (d) 100%
- (e) 80%

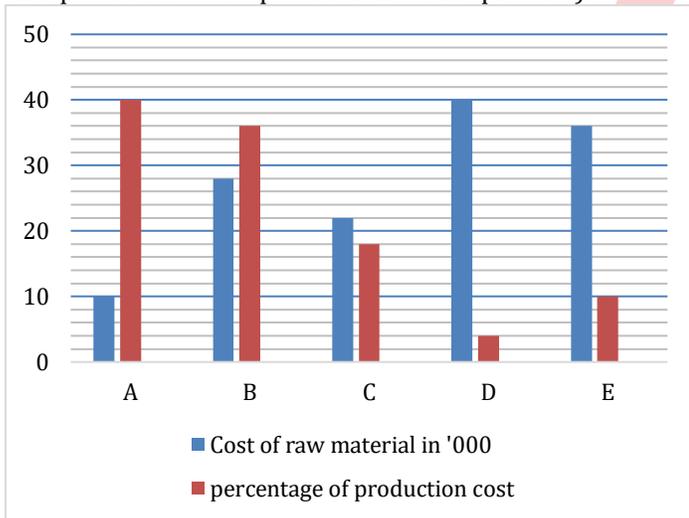
Q124. If difference between income of A & D is Rs. 30000 in 2016 and income of B & C increased by 40% and 20% respectively in the year 2017 over 2016, then find difference between income of B & C in the year 2017?

- (a) 24000 Rs.
- (b) 26000 Rs.
- (c) 20000 Rs.
- (d) 28000 Rs.
- (e) 32000 Rs.

Q125. What will be central angle for income of A & D together?

- (a) 128°
- (b) 136°
- (c) 126°
- (d) 144°
- (e) 120°

Directions (126-130):- Bar graph given below gives information about raw material cost (in Rs. '000) of five different products i.e (A,B,C,D, and E) manufactured by a company and percentage for cost of production which was calculated on raw material cost of that product. (Cost price of each product for company = raw material cost of that product+ cost of production of that product).



Q126. If on selling product B company got profit of $16\frac{2}{3}\%$ of production cost of that product. Find market price of the product if product was sold at market price.

- (a) Rs.38080
- (b) Rs.26532
- (c) Rs.29480
- (d) Rs.35784
- (e) Rs.39760

Q127. Find ratio of cost price of product A to cost price of product E for the company.

- (a) 5:18
- (b) 1:4
- (c) 35:99
- (d) 15:38
- (e) 19:45
- (f)

Q128. Production cost consists of transportation cost and machining cost. If for product D transportation cost is 10% of its production cost, then find at what price company should sell it to get 25% profit if transportation cost is not considered by company in calculating cost price of this product?

- (a)Rs.51800
- (b)Rs.41000
- (c) Rs.42518
- (d) Rs.40400
- (e) Rs.43428
- (f)

Q129. Production cost of product B is approximately how much percent more than production cost of product C?

- (a) 160%
- (b) 155%
- (c) 142%
- (d) 157%
- (e) 162%

Q130. If product E was sold at $9\frac{1}{11}\%$ profit than it's selling price becomes equal to selling price of product B when it was sold at d% profit. Find approximate value of 'd'.

- (a) 15%
- (b) 10%
- (c) 17%
- (d) 9%
- (e) 13%

Direction (131 –135): Given below the table shows number of mobiles manufactured by five different plants of 'Samsung' in 2001. Read the data carefully and answer the questions.

Plants	Number of mobiles Manufactured in 2001	Percentage increment in production in 2002 over 2001	Percentage of sold mobiles in 2001
A	900	12	35
B	720	15	62.5

C	960	25	50
D	1080	12.5	40
E	1200	20	60

Total stock available in 2002 of each plant = Manufactured mobiles in 2002 + (Manufactured mobiles in 2001– Sold mobiles in 2001)

Q131. Total stock of plant C in 2002 is what percent less than total stock of plant E in 2002?

- (a) 10%
- (b) 12.5%
- (c) 15%
- (d) 20%
- (e) 25%

Q132. Find difference between total stock of plant A in 2002 and average of unsold mobiles of plant D & E in 2001 together ?

- (a) 1000
- (b) 1049
- (c) 1099
- (d) 1029
- (e) 1069

Q133. Out of total manufactured mobiles by plant B in 2001, 45% are 6GB mobiles and remaining are 8GB mobiles. If out of total sold mobiles by plant B in 2001, 36% are 6GB mobiles, then find ratio of unsold 8GB mobiles in 2001 to total stock of plant D in 2002?

- (a) 4 : 69
- (b) 4 : 79
- (c) 2 : 69
- (d) 2 : 79
- (e) 4 : 49

Q134. Total stock of plant B in the year 2002 is what percent more than total unsold mobiles of plant B & E together in 2001?

- (a) 44%
- (b) 42%
- (c) 48%
- (d) 46%
- (e) None of these

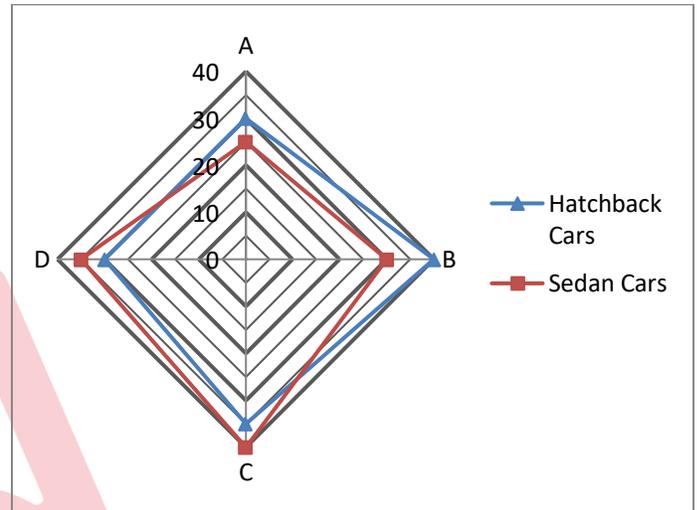
Q135. If total sale of plant A & D is increased by 20% and 25% in 2002 over 2001 respectively, then find total unsold mobiles by plant A & D in the year 2002 together?

- (a) 2528

- (b) 2548
- (c) 2538
- (d) 2578
- (e) 2518

Directions (136-140):- Study the given radar graph carefully and answer the following questions.

The given radar graph shows the production data of hatchback & sedan cars by 4 companies (A, B, C & D) in a month.



Note - Total cars produced by any company = Total (hatchback + sedan) cars produced by that company.

Q136. Find the average no. of hatchback cars produced by all the companies together?

- (a) 32.5
- (b) 33.75
- (c) 33.5
- (d) 38.25
- (e) 34.5

Q137. Total cars produced by company A are what percent of total cars produced by B and C together?(approx..)

- (a) 40%
- (b) 36%
- (c) 73%
- (d) 79%
- (e) 38%

Q138. Due to increase in demand of hatchback cars in next month, all companies have to raise their production of hatchback cars by 20% but high prices contributed to a cut in sales of hatchback cars by 20% w.r.t. present

month. How many hatchback cars remain unsold if in previous month each company cleared its stock?

- (a) 54
- (b) 52
- (c) 58
- (d) 56
- (e) 60

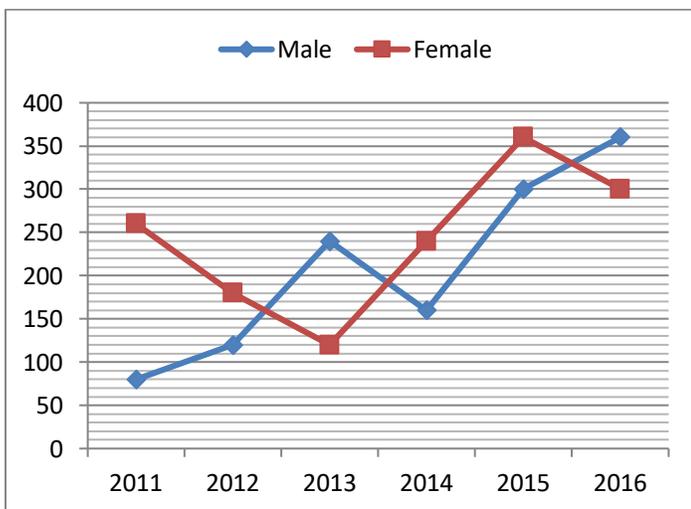
Q139. Company C marked their sedan cars at Rs. 700000 while D marked the same at Rs. 900000. By what percent income of C from sales of sedan cars is less than that of D? (if both companies sold all their cars)

- (a) $11\frac{1}{9}\%$
- (b) $14\frac{2}{7}\%$
- (c) 25%
- (d) $9\frac{1}{9}\%$
- (e) $8\frac{1}{3}\%$

Q140. What is the ratio of sedan cars produced by company C and D together to the hatchback cars produced by B and C together?

- (a) 15:14
- (b) 7:8
- (c) 8:7
- (d) 1:1
- (e) 14:15

Directions (141-145): The Line graph given below provides the information of employees(males+females) who works for an institution in six different years. Read the information carefully and answer the following questions according to it.



Q141. Find the difference between average number of male labours from 2012,2013 and 2015 together to the average number of female labours from 2011 and 2013 together?

- (a) 50
- (b) 40
- (c) 30
- (d) 60
- (e) 80

Q142. Find the ratio of total male labours from 2014 and 2015 together to the total female labours from 2012 and 2013 together?

- (a) 15:23
- (b) 23: 15
- (c) 15: 17
- (d) 11: 23
- (e) None of these

Q143. Average number of total male labours from all the given years together is what percent more/less than the average number of female labours from 2014,2015 and 2016 together?

- (a) 25 %
- (b) 50 %
- (c) 45 %
- (d) 30 %
- (e) 35 %

Q144. Total male labours from 2011,2012 and 2016 together is how much more/less than total female labours from 2011,2013 and 2014 together?

- (a) 60
- (b) 70
- (c) 80
- (d) 90
- (e) 100

Q145. If in 2017, total male labours and female labours is increased by 10 % and 15% respectively as compared to male and female population in 2015, then find the total numbers of male and female labours together in 2017 ?

- (a) 690
- (b) 780
- (c) 720
- (d) 650
- (e) 744

Directions (146-150): Read the given below table carefully to answer the following questions.

Table gives information of panchayat elections held in five villages (A, B, C, D and E).

Village	Total available votes (in'000)	Votes polled (in %)	Valid votes (in %)
A	50	70	80
B	40	75	60
C	75	80	75
D	100	75	72
E	80	90	70

Note- 1. Percentage of votes polled = $\frac{\text{Total votes polled}}{\text{Total available votes}} \times 100$

2. Percentage of valid votes = $\frac{\text{Total valid votes}}{\text{Total votes polled}} \times 100$

Q146. Find the ratio of invalid votes of village A to that of village D.

- (a) 3 : 5
- (b) 1 : 3
- (c) 6 : 7
- (d) 4 : 5
- (e) None of the above.

Q147. Find the approximate difference between average of valid votes of village B and E and average of total votes polled in village A, B and D.

- (a) 13000
- (b) 12900
- (c) 12600
- (d) 12500
- (e) 12800

Q148. Invalid votes of village B & C together is what percent of total votes polled in village C & E together?

- (a) $20\frac{5}{11}\%$
- (b) $24\frac{6}{11}\%$
- (c) $21\frac{3}{11}\%$
- (d) $19\frac{5}{11}\%$
- (e) $23\frac{3}{11}\%$

Q149. Difference between valid votes and invalid votes of village E is approximately what percent of total votes available in village A?

- (a) 67%
- (b) 58%
- (c) 54%
- (d) 62%

(e) 60%

Q150. Find the invalid votes in village C & D together is approximately what percent more or less than the invalid votes in village A, B & E together?

- (a) 17%
- (b) 21%
- (c) 7%
- (d) 14%
- (e) None of the above.

Directions (151–155): In the given questions, two quantities are given, one as 'Quantity I' and another as 'Quantity II'. You have to determine relationship between two quantities and choose the appropriate option:

Q151. Ratio of age of Anurag and Bhumi is 6 : 7 and Dharmendra : Ekta is 9 : 5. Ratio of average age of Anurag, Bhumi, Dharmendra & Ekta to age of Chiru is 9 : 10

Quantity I– If ratio of age of Bhumi and Dharmendra is 7:9 and age of Chiru is 6 years less than age of Dharmendra, then age of Chiru.

Quantity II – If ratio of age of Bhumi and Dharmendra is 7:9 and age of Chiru is 6 years less than age of Dharmendra, Average age of Anurag & Dharmendra.

- (a) Quantity I > Quantity II
- (b) Quantity I < Quantity II
- (c) Quantity I ≥ Quantity II
- (d) Quantity I ≤ Quantity II
- (e) Quantity I = Quantity II or no relation

Q152. Two vessels A & B contains $(x + 16) \ell$ and $(x + 56) \ell$ mixture of milk and water respectively. If 20% from mixture from vessel A & $46\frac{2}{3}\%$ mixture from Vessel B taken out remaining mixture in both vessels become equal.

Quantity I – If ratio of milk to water in vessel A & B is 5 : 3 & 7 : 5 respectively, then total quantity of milk in both vessel.

Quantity II – 140% of total quantity of mixture in vessel A.

- (a) Quantity I > Quantity II
- (b) Quantity I < Quantity II
- (c) Quantity I ≥ Quantity II
- (d) Quantity I ≤ Quantity II
- (e) Quantity I = Quantity II or no relation

Q153. Radius of cone is 4 cm less than side of square of which area is 324 cm². Height of cone is 5 cm more than radius of circle, whose circumference is 44 cm.

Quantity I – Volume of cone.

Quantity II – 2488 cm³

- (a) Quantity I > Quantity II
- (b) Quantity I < Quantity II
- (c) Quantity I ≥ Quantity II
- (d) Quantity I ≤ Quantity II
- (e) Quantity I = Quantity II or no relation

Q154. Quantity I $-x^2 - 21x + 108 = 0$

Quantity II $-x^2 - 30x + 216 = 0$

- (a) Quantity I > Quantity II
- (b) Quantity I < Quantity II
- (c) Quantity I ≥ Quantity II
- (d) Quantity I ≤ Quantity II
- (e) Quantity I = Quantity II or no relation

Q155. 240 meters & 210 meters long trains running in opposite direction cross each other in 6 sec. Ratio between speed of longer train and smaller train is 7 : 8 and faster train cross a platform in 9 sec.

Quantity I – Time taken (in sec) by slower train to cross a bridge, which is 60 meters longer than platform.

Quantity II – 16 sec

- (a) Quantity I > Quantity II
- (b) Quantity I < Quantity II
- (c) Quantity I ≥ Quantity II
- (d) Quantity I ≤ Quantity II
- (e) Quantity I = Quantity II or no relation

Directions (156-160): Each of the following question is followed by two statements I, and II. You have to study the question and the statements and decide which of the statement(s) is/are necessary to answer the question.

- (a) Only Statement I alone.
- (b) Only Statement II alone.
- (c) Both Statements I and II together.
- (d) Neither Statement I nor II is sufficient.
- (e) Either Statement I or II alone.

Q156. What is the time taken by Saif to cover a distance of 100 km by car?

- I. Saif covers a distance of 100 km in 5 hours using bike.
- II. speed of bike and that of car is in ratio 5:7.

Q157. In how much time can Deepika do the work alone?

- I. Kareena & Deepika can complete a piece of work in 10 days working together.
- II. Madhuri and Kareena can complete the work in 6 days working together.

Q158. In how many ways can 4 boys and 5 girls be selected?

- I. there are 20 persons (boys + girls) in the group out of which 12 are boys.
- II. the ratio of boys to girls in the group is 3:2.

Q159. What is the volume of conical tent?

- I. the height and radius of tent is in ratio 4:3, where sum of radius and height is 14m.
- II. the slant height is 13 cm while radius is 5 cm.

Q160. Find the value of a and b?

- I. a:b = 3:2
- II. $a^3 - b^3 = 19$

Directions (161-165): The following questions are accompanied by two **Quantities I and II**. You have to determine relationship between both the quantities and choose an answer from given five options below:

- (a) Quantity I > Quantity II
- (b) Quantity I < Quantity II
- (c) Quantity I ≥ Quantity II
- (d) Quantity I ≤ Quantity II
- (e) Quantity I = Quantity II or No relation

Q161. A solid body is to be packed in a cuboidal box.

Quantity I – Minimum volume of cuboidal box used for packaging, if solid body is sphere of radius 5 cm.

Quantity II – Minimum volume of cuboidal box used for packaging, if solid body is hemisphere of diameter 13 cm.

Q162. Quantity I– $x:6x^2 + 5x + 1 = 0$

Quantity II– $y:20y^2 + 9y + 1 = 0$

Q163. Quantity I – Twenty-four men can complete a work in sixteen days while Thirty-two women can complete the same work in twenty-four days. Sixteen men and sixteen women started working and worked for twelve days. Extra no. of men is to be added to complete the remaining work in 2 days.

Quantity II – Number of ways in which letters of word 'ETEQUETTE' be arranged so that consonants occupy only odd positions.

Q164. Quantity I– $x:2x^2 - 7x + 6 = 0$

Quantity II– $y:2y^2 - y - 1 = 0$

Q165. Quantity I–Raj invested Rs. 15000 in scheme 'A' at rate of 18% p.a. simple interest for 3 years and Riya invested Rs. 18000 in scheme 'B' which offers 15% p.a. compound interest in 2 years. The difference between the interest earned in two schemes.

Quantity II–In 2017, A village consist of males and females in the ratio of 5: 4. If the difference between number of males and number of females in the year 2017 is 990 and population increases by 10% every year. Number of males in 2018 if the ratio between males and females remains same every year?

Directions (166-170): Read the given information carefully and answer the following questions.

A boat covers certain distance of it's journey in three parts i.e. upstream, downstream and in still water. Ratio of distance covered in downstream to upstream is 7:3 and total distance covered is 375 km. When boat goes downstream it consume 25% less fuel per km and while moving in upstream it consumes $12\frac{1}{2}\%$ more fuel per km than that of in still water and it cover 175km in still water. Now, after reaching its destination, boat returns to initial point covering the same path and it takes $\frac{10}{3}$ lit more fuel in return journey.

Q166. If in return journey boat takes 5hr 30 min more to cover upstream than downstream and speed of boat in downstream is 40km/h, then find speed of boat in upstream?

- (a) 10 km/h
- (b) 15 km/h
- (c) 20 km/h
- (d) 25 km/h
- (e) None of these.

Q167. How much fuel is consumed in covering downstream distance in whole journey? (approx.)

- (a) 15 lit
- (b) 17 lit
- (c) 18 lit
- (d) 12 lit
- (e) 10 lit

Q168. Total Distance covered in still water is how much percent more or less than total distance covered in upstream in whole journey?

- (a) 50%
- (b) 100%
- (c) 150%
- (d) 75%
- (e) 125%

Q169. What is the rate of consumption of fuel of boat in upstream?

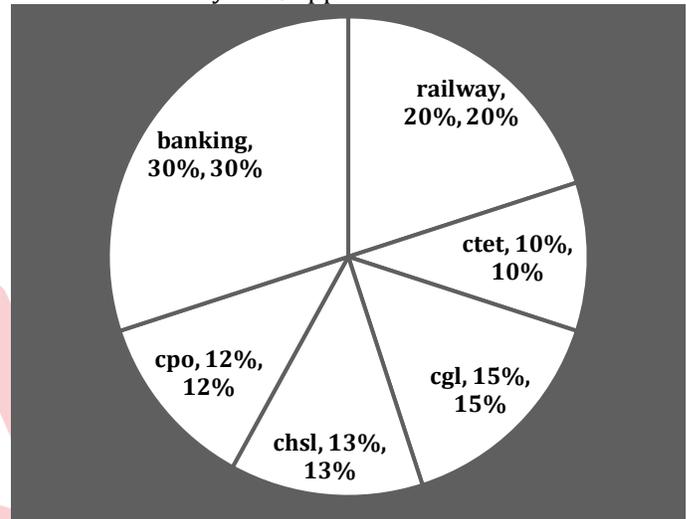
- (a) 7 km in 1 lit
- (b) 8 km in 1 lit
- (c) 10 km in 1 lit
- (d) 12 km in 1 lit
- (e) 9 km in 1 lit

Q170. If fuel costs 81 rupee per liter, then find money spent on fuel to cover distance still in water in return journey?

- (a) Rs. 1550
- (b) Rs. 1575

- (c) Rs. 1350
- (d) Rs. 1275
- (e) Rs. 1250

Directions (171-175):- Pie chart given below gives information about total no. of students who appeared in six different exams i.e. railway, ctet, cgl, chsl, cpo and banking exams and table given below gives ratio of students belonging to general, obc and other category out of who have appeared in exam. If 50000 students applied for exam and only 60% appeared in exams.



Name of exams	General : obc : other category
Railway	5:8:7
Ctet	6:4:5
Cgl	5:6:7
Chsl	4:7:2
Cpo	7:8:5
Banking	15:10:11

Q171. In banking exams total 1330 students have passed and from general and obc category 20% and 10% of the students were able to pass the exams respectively. Find what percent students of other category passed the banking sector exam.

- (a) 22%
- (b) 14%
- (c) 11%
- (d) 12%
- (e) 9%

Q172. What is the ratio of students belonging to general category and appeared in cgl exam to students belonging to other category and appeared in cpo exam?

- (a) 25:13
- (b) 25:18

- (c) 18:13
- (d) 28:19
- (e) 19:18

Q173. What is the average of total no. student belonging to obc category who appeared in all exam?

- (a) 1790
- (b) 1793
- (c) 1795
- (d) 1800
- (e) 1805

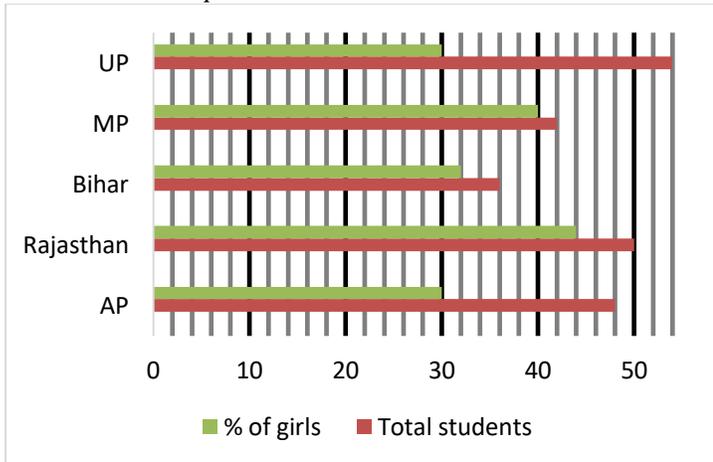
Q174. If no. of students appeared in banking exam from general category is 15% of total students applied for all the exams from urban area, then find no. of students applied for all the exams belonging to rural area?

- (a) 5000
- (b) 30000
- (c) 15000
- (d) 10000
- (e) 25000

Q175. Total no. of students appeared in railway exam are what part of total students who did not appear in any exam.

- (a) 40%
- (b) 30%
- (c) 50%
- (d) 20%
- (e) 25%

Directions (176 – 180): Bar chart given below shows total students (in thousand) in five different state board and percentage of girls in these state boards, while table shows percentage of boys appeared in exam and ratio of boys to girls appeared in exam. Read the data carefully and answer the questions.



States	% of appeared boys	Ratio of appeared boys to appeared girls
UP	90%	9 : 4
MP	80%	16 : 9
Bihar	75%	3 : 1
Rajasthan	96%	4 : 3
AP	80%	24 : 11

Q176. Find the difference between girls appeared in exam from AP and that of from UP?

- (a) 2400
- (b) 2800
- (c) 2000
- (d) 3200
- (e) 3600

Q177. What is the percentage of girls appeared in exam from Bihar?

- (a) 52.125%
- (b) 55.125%
- (c) 54.125%
- (d) 53.125%
- (e) None of these

Q178. Find the ratio of total girls appeared in exam from MP to total boys appeared in exam from AP?

- (a) 37 : 79
- (b) 31 : 57
- (c) 21 : 40
- (d) 25 : 61
- (e) 27 : 64

Q179. Total girls appeared in the exam from Rajasthan are what percent less than total boys from that state?

- (a) 24%
- (b) 25%
- (c) 30%
- (d) 32%
- (e) 28%



Q180. Find the average number of boys appeared in the exam from Bihar & MP?

- (a) 19260
- (b) 19140
- (c) 19360
- (d) 19280
- (e) 19440

Direction(181-185): Following are the questions based on two statements and answer the following based on the given statements.

Q181. What will be respective ratio of saving of Veer & Deepak.

Statement I . Income of Veer is 4% less than that of Sameer and also expenditure of Veer is 12.5% less than that of Sameer. Deepak spend $\frac{3}{5}$ th of his income.

Statement II . Sameer save Rs. 7000 & Veer save Rs. 7400. Income of Deepak is Rs. 1000 more than that of Sameer.

- (a) Only statement I is sufficient
- (b) Only statement II is sufficient
- (c) Statement I and II both together is sufficient
- (d) Either statement I or Statement II alone is sufficient
- (e) Neither statement I nor statement II is sufficient

Q182. What will be cost price of article, which marked 40% above.

Statement I . If article sold 25% discount profit will be Rs. 50.

Statement II . If article sold two successive discounts of $14\frac{2}{7}\%$ and 10% profit will be Rs. 80.

- (a) Only statement I is sufficient
- (b) Either statement I or Statement II alone is sufficient
- (c) Statement I and II both together is sufficient
- (d) Only statement II is sufficient
- (e) Neither statement I nor statement II is sufficient

Q183.A bag contains total 12 balls in which there are 5 green balls and rest are blue and red balls. What is difference between blue & red balls.

Statement I . If one ball taken out from bag probability of being either red or blue is $\frac{7}{12}$.

Statement II . If two balls taken out from bag probability of being either red or blue is $\frac{1}{6}$.

- (a) Only statement II is sufficient
- (b) Either statement I or Statement II alone is sufficient
- (c) Statement I and II both together is sufficient
- (d) Only statement I is sufficient
- (e) Neither statement I nor statement II is sufficient

Q184. Side of square is 3.5 cm more than radius of circle. What will be area of square?

Statement I. Difference between circumference and diameter of circle is 45 cm.

Statement II. Radius of circle is 50% more than breadth of rectangle whose length is 15 cm. Ratio of circumference of circle & perimeter of rectangle is 3 : 2.

- (a) Only statement II is sufficient
- (b) Either statement I or Statement II alone is sufficient
- (c) Statement I and II both together is sufficient
- (d) Only statement I is sufficient
- (e) Neither statement I nor statement II is sufficient

Q185.What will be length of train A?

Statement I . Relative speed of train A & B is 10 meters/sec when both running in same direction and length of train B is 240 (Speed of train B is more than speed of train A).

Statement II . Train B cross a pole in 8 sec and cross train A in 12 sec running in opposite direction.

- (a) Only statement II is sufficient
- (b) Either statement I or Statement II alone is sufficient
- (c) Neither statement I nor statement II is sufficient
- (d) Only statement I is sufficient
- (e) Statement I and II both together is sufficient

Directions (186-190): In the given questions, two quantities are given one as 'Quantity I' and another as 'Quantity II'. You have to determine relationship between two quantities and choose the appropriate option.

Q186. Quantity I: A train can cross a pole in 24 sec with a speed of 75 km/h. Length of train.

Quantity II: A train can cross a pole in 12 sec and a tunnel in 55.2 sec. If length of tunnel is 1800 m. length of train.

- (a) Quantity I > Quantity II
- (b) Quantity I < Quantity II
- (c) Quantity I \geq Quantity II
- (d) Quantity I = Quantity II or no relation
- (e) Quantity I \leq Quantity II

Q187. Quantity I: Marked price of article, if article is marked at 50% above cost price and on selling the article, profit earned is 20% and S. P is Rs 1020.

Quantity II: Total cost of fencing a square of side 37.5 meter and cost of wire is Rs 0.17 per centimeter.

- (a) Quantity I > Quantity II
- (b) Quantity I < Quantity II
- (c) Quantity I \geq Quantity II
- (d) Quantity I = Quantity II or no relation
- (e) Quantity I \leq Quantity II

Q188. Quantity I: value of x

$$(x + 3)^2 = (x - 3)^2 + x^2$$

Quantity II: value of y

$$y^2 - 29y + 204 = 0$$

- (a) Quantity I > Quantity II
- (b) Quantity I < Quantity II
- (c) Quantity I ≥ Quantity II
- (d) Quantity I = Quantity II or no relation
- (e) Quantity I ≤ Quantity II

Q189. Quantity I: Amount obtained after two years on Rs. 2450 at $14\frac{2}{7}\%$ simple interest per annum.

Quantity II: Amount obtained after two years on investment of Rs 2450 at $12\frac{1}{2}\%$ p. a. compounded yearly.

- (a) Quantity I > Quantity II
- (b) Quantity I < Quantity II
- (c) Quantity I ≥ Quantity II
- (d) Quantity I = Quantity II or no relation
- (e) Quantity I ≤ Quantity II

Q190. Quantity I: Actual discount percent. If a shopkeeper gives 1 article free at every purchase of 4 articles and also give 20% discount.

Quantity II: Final new profit percent. If selling price is increased by $14\frac{2}{7}\%$ then profit percent becomes $\frac{36}{19}$ of initial profit percent.

- (a) Quantity I > Quantity II
- (b) Quantity I < Quantity II
- (c) Quantity I ≥ Quantity II
- (d) Quantity I = Quantity II or no relation
- (e) Quantity I ≤ Quantity II

Directions (191-195): Solve the given quadratic equations and mark the correct option based on your answer—

- (a) $x < y$
- (b) $x \leq y$
- (c) $x = y$ or no relation can be established between x and y .
- (d) $x > y$
- (e) $x \geq y$

Q191. (i) $x^2 - 25x + 156 = 0$

(ii) $y^2 - 21y + 108 = 0$

Q192. (i) $3x + 5y = 18$

(ii) $7x + 8y = 42$

Q193. (i) $2x^2 + 15x + 27 = 0$

(ii) $3y^2 + 25y - 18 = 0$

Q194. (i) $6x^2 + 29x + 35 = 0$

(ii) $20y^2 + 27y + 9 = 0$

Q195. (i) $x^2 - 7x - 30 = 0$

(ii) $y^2 + 15y + 50 = 0$

Directions (196-200): Given below are two equations in each question, which you have to solve the equation and give answer

- (a) if $x > y$
- (b) if $x \geq y$
- (c) if $y > x$
- (d) if $y \geq x$
- (e) if $x = y$ or no relation can be established

Q196. I. $x^2 - 5x + 4 = 0$

II. $y^2 + 3y + 2 = 0$

Q197. I. $6x^2 - 5x + 1 = 0$

II. $15y^2 - 8y + 1 = 0$

Q198. I. $x^2 + 5x + 4 = 0$

II. $y^2 - 5y = 14$

Q199. I. $x^2 + 9x + 20 = 0$

II. $y^2 + 4y + 3 = 0$

Q200. I. $x^2 - 6x + 8 = 0$

II. $y^2 + 2y = 8$

Solutions

S1. Ans (b)

Sol. $\Rightarrow \frac{1}{4} \times \frac{296 \times 32}{?} = \frac{37}{\frac{1}{4} \times \frac{1}{4}}$

$\Rightarrow ? = \frac{1}{4} \times \frac{1}{4} \times \frac{1}{4} \times \frac{296}{37} \times 32$
 $\Rightarrow ? = 4$

S2. Ans (b)

Sol. $\frac{\sqrt[3]{405 \times 315 \times 245}}{\sqrt{\frac{1}{3} \times 27}} = ?$

$\Rightarrow ? = \frac{\sqrt[3]{5 \times 81 \times 5 \times 63 \times 5 \times 49}}{3}$

$\Rightarrow ? = \frac{5 \times 7 \times 9}{3}$

$\Rightarrow ? = 105$

S3. Ans (d)

Sol. $\frac{20}{100} \times 145 - \frac{266}{119} \times \frac{17}{19} = ?^3$

$\Rightarrow ?^3 = 29 - 2$

$\Rightarrow ?^3 = 3^3$

$\Rightarrow ? = 3$

S4. Ans (e)

$$\text{Sol. } \sqrt{81 \times \frac{1}{9} \times \frac{1}{9} \times 4 + \frac{182}{91} \times \frac{474}{237} + 8} = ?^{\frac{1}{2}}$$

$$\Rightarrow ?^{\frac{1}{2}} = 2 + 4 + 8$$

$$\Rightarrow ? = 196$$

S5. Ans (a)

$$\text{Sol. } 6739 + 161 \times 5 - 75 \times 12 + \frac{20}{100} \times 120 - \frac{10}{100} \times 110 = ?$$

$$\Rightarrow ? = 6739 + 805 - 900 + 24 - 11$$

$$\Rightarrow ? = 6657$$

S6. Ans.(b)

$$\text{Sol. } \sqrt{64 \times 36} + \frac{420}{6} - 540 = ? - 800$$

$$? = \sqrt{2304} + 70 - 540 + 800$$

$$? = 378$$

S7. Ans.(a)

$$\text{Sol. } \frac{16}{100} \times 1600 + \frac{?}{100} \times 1200 = 20 \times 122$$

$$256 + ? \times 12 = 2440$$

$$? = \frac{2184}{12} = 182$$

S8. Ans.(d)

$$\text{Sol. } (8)^3 + (15)^2 - (12)^2 = ? - 1220 - 1750$$

$$512 + 225 - 144 = ? - 2970$$

$$? = 3563$$

S9. Ans.(e)

$$\text{Sol. } 20 \times \sqrt{?} = \frac{64}{100} \times 400 + \frac{12}{100} \times 1200$$

$$20 \times \sqrt{?} = 256 + 144$$

$$\sqrt{?} = \frac{400}{20} = 20$$

$$? = 400$$

S10. Ans.(c)

$$\text{Sol. } (?)^2 + \frac{14}{100} \times 1600 = 59 \times 12$$

$$(?)^2 + 224 = 708$$

$$(?)^2 = 484$$

$$? = 22$$

S11. Ans(b)

$$\text{Sol. } \frac{?}{100} \times 8000 + 1681 - \frac{30}{100} \times 4150 = 676$$

$$? = (676 - 436) \times \frac{100}{8000} \approx 3$$

S12. Ans(b)

$$\text{Sol. } \frac{250+?}{50} + 417 + 400 = 625 + 20 \times 10$$

$$? = (625 + 200 - 817) \times 50 - 250 \approx 150$$

S13. Ans(e)

$$\text{Sol. } 484 + 12.5 \times 20 - 125 - ?^2 \times 4 = 225$$

$$? = \sqrt{\frac{734-350}{4}} \approx 10$$

S14. Ans(c)

$$\text{Sol. } \frac{9900}{11 \times 3} \times 34 \times 0.01 + 98 = \frac{80}{100} \times ?$$

$$? = \frac{200 \times 100}{80} \approx 250$$

S15. Ans(d)

$$\text{Sol. } \frac{5436}{302} + 18 + 54 + \frac{36}{100} \times 1000 = \frac{108}{6} \times ? + 216$$

$$? = \frac{(18 + 72 + 360 - 216)}{18} \approx 13$$

S16. Ans(a)

$$\text{Sol. } 55\% \text{ of } 900 + 70\% \text{ of } 1050 = ?\% \text{ of } 3000$$

$$\frac{55}{100} \times 900 + \frac{70}{100} \times 1050 = \frac{?}{100} \times 3000$$

$$495 + 735 = 30 \times ?$$

$$30 \times ? = 1230$$

$$? = 41$$

S17. Ans(b)

$$\text{Sol. } 73823 - 34156 + 4756 + 6758 - 9849 = 41499 - 160 - ?$$

$$41332 = 41339 - ?$$

$$? = 7$$

S18. Ans(d)

$$\text{Sol. } \frac{5599}{1331} \times \frac{3773}{2036} \times \frac{88}{49} = ? - 6^2$$

$$14 = ? - 36$$

$$? = 50$$

S19. Ans(c)

$$\text{Sol. } 84 \times \frac{1}{4} \div 21^2 + ? = \frac{7}{147} \times 21 - \frac{20}{21}$$

$$84 \times \frac{1}{4} \times \frac{1}{441} + ? = 1 - \frac{20}{21}$$

$$\frac{1}{21} + ? = \frac{1}{21}$$

$$? = 0$$

S20. Ans(e)

Sol.

$$\sqrt{5776} - \sqrt{1444} + \sqrt{729} = 43 + ?$$

$$76 - 38 + 27 = 43 + ?$$

$$? = 65 - 43 = 22$$

S21. Ans(c)

Sol.

$$1396 + 412 - 2704 = ? - (31)^2$$

$$1396 + 412 - 2704 = ? - (31)^2$$

$$? = 961 - 896 = 65$$

S22. Ans(a)

Sol.

$$78 \times 26 \div 6 + 1262 = 1311 + (?)^2$$

$$2028 \div 6 + 1262 = 1311 + (?)^2$$

$$338 + 1262 = 1311 + (?)^2$$

$$(?)^2 = 1600 - 1311 = 289$$

$$? = \sqrt{289} = 17$$

S23. Ans(a)

Sol.

$$1484 \div 28 + 1462 \div 34 - 12 \times 7 = ?$$

$$? = 53 + 43 - 84 = 12$$

S24. Ans(c)

Sol.

$$42.5 \times 15 + 37.5 \times 25 = 1420 + ?$$

$$637.5 + 937.5 = 1420 + ?$$

$$? = 1575 - 1420 = 155$$

S25. Ans(b)

Sol.

$$2450 + 3760 - 3830 = 6000 - ?$$

$$2380 = 6000 - ?$$

$$? = 6000 - 2380 = 3620$$

S26. Ans.(b)

Sol. Wrong number = 2030

Pattern of series -

2025	2050	2000	2100	1900	2300	1500
+25		-50		+100		-200
x2		x2		x2		x2

So, there should be 2025 in place of 2030.

S27. Ans.(d)

Sol. Wrong number = 10

Pattern of series -

12	6	6	9	18	45	135
x0.5		x1	x1.5		x2	x2.5
x3						

So, there should be 12 in place of 10.

S28. Ans.(a)

Sol. Wrong number = 318

Pattern of series -

337	320	301	278	249	218	181
-17		-19		-23		-29
-31		-37				

So, there should be 320 in place of 318.

S29. Ans.(d)

Sol. Wrong number = 820

Pattern of series -

75	100	200	425	825	1450	2350
+25		+100		+225		+400
+625		+900				
↑	↑	↑	↑	↑	↑	↑
(5) ²	(10) ²	(15) ²	(20) ²	(25) ²	(30) ²	

So, there should be 825 in place of 820.

S30. Ans.(b)

Sol. Wrong number = 285

Pattern of series -

81	100	130	171	223	286	360
+19		+30		+41		+52
+63		+74				
+11		+11		+11		+11

So, there should be 286 in place of 285.

S31. Ans(a)

Sol.

Wrong term = 1436

Pattern of series -

$$-18 + (24)^2 = 558$$

$$558 + (20)^2 = 958$$

$$958 + (16)^2 = 1214$$

$$1214 + (12)^2 = 1358$$

$$1358 + (8)^2 = 1422$$

$$1422 + (4)^2 = 1438$$

So, there should be 1438 in the place of 1436

S32. Ans.(c)

Sol.

Wrong term = 309

Pattern of series

15	75	129	191	243	307	357
+60		+54		+62		+52
+64		+50				
-6		+8		-10		+12
-14						

So, there should be 307 in the place of 309.

S33. Ans(d)

Sol.

Wrong term = 232

Pattern of series -

$210 + 20 = 230$

$230 + 40 = 270$

$270 + 80 = 350$

$350 + 160 = 510$

$510 + 320 = 830$

$830 + 640 = 1470$

So, there should be 230 in the place of 232.

S34. Ans(a)

Sol.

Wrong term = 1040

Pattern of series -

$48 \times 3 = 144$

$144 \times 2.5 = 360$

$360 \times 2 = 720$

$720 \times 1.5 = 1080$

$1080 \times 1 = 1080$

$1080 \times 0.5 = 540$

So, there should be 1080 in the place of 1040.

S35. Ans(b)

Sol.

Wrong term = 13184

Pattern of series -

$19 \times 3 - 1 = 56$

$56 \times 3 - 2 = 166$

$166 \times 3 - 4 = 494$

$494 \times 3 - 8 = 1474$

$1474 \times 3 - 16 = 4406$

$4406 \times 3 - 32 = 13186$

So, there should be 13186 in the place of 13184.

S36. Ans(a)

Sol.

Wrong term = 1436

Pattern of series -

$-18 + (24)^2 = 558$

$558 + (20)^2 = 958$

$958 + (16)^2 = 1214$

$1214 + (12)^2 = 1358$

$1358 + (8)^2 = 1422$

$1422 + (4)^2 = 1438$

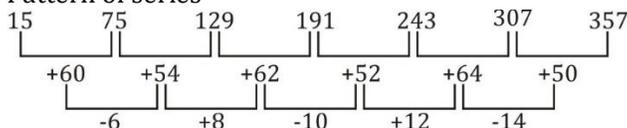
So, there should be 1438 in the place of 1436

S37. Ans.(c)

Sol.

Wrong term = 309

Pattern of series



So, there should be 307 in the place of 309.

S38. Ans(d)

Sol.

Wrong term = 232

Pattern of series -

$210 + 20 = 230$

$230 + 40 = 270$

$270 + 80 = 350$

$350 + 160 = 510$

$510 + 320 = 830$

$830 + 640 = 1470$

So, there should be 230 in the place of 232.

S39. Ans(a)

Sol.

Wrong term = 1040

Pattern of series -

$48 \times 3 = 144$

$144 \times 2.5 = 360$

$360 \times 2 = 720$

$720 \times 1.5 = 1080$

$1080 \times 1 = 1080$

$1080 \times 0.5 = 540$

So, there should be 1080 in the place of 1040.

S40. Ans(b)

Sol.

Wrong term = 13184

Pattern of series -

$19 \times 3 - 1 = 56$

$56 \times 3 - 2 = 166$

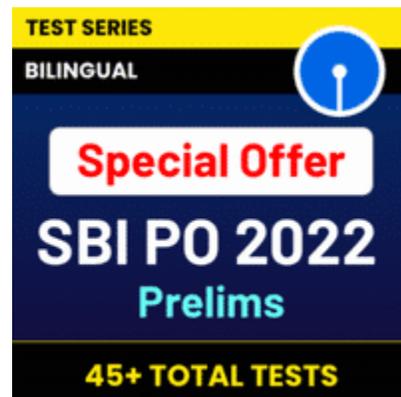
$166 \times 3 - 4 = 494$

$494 \times 3 - 8 = 1474$

$1474 \times 3 - 16 = 4406$

$4406 \times 3 - 32 = 13186$

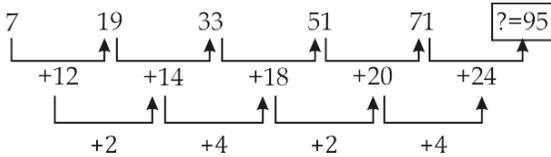
So, there should be 13186 in the place of 13184.



S41. Ans(a)

Sol.

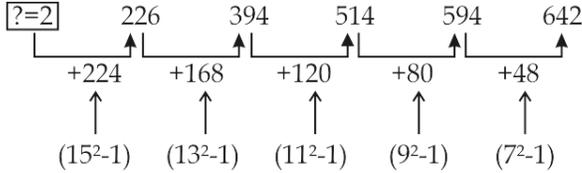
Pattern of series -



S42. Ans(d)

Sol.

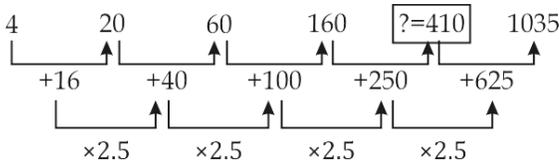
Pattern of series -



S43. Ans(a)

Sol.

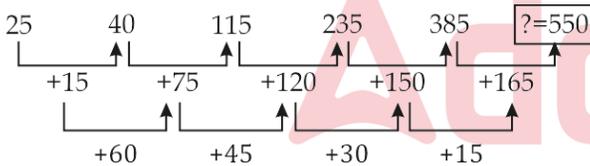
Pattern of series -



S44. Ans(e)

Sol.

Pattern of series -



S45. Ans(b)

Sol.

Pattern of series -

$$12 \times 0.5 + 2 = 8$$

$$8 \times 1 + 2 = 10$$

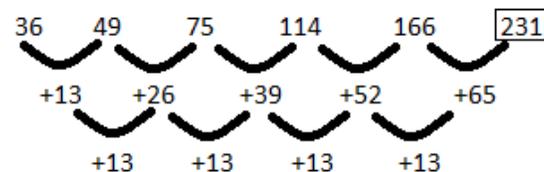
$$10 \times 2 + 2 = 22$$

$$? = 22 \times 4 + 2 = 90$$

$$90 \times 8 + 2 = 722$$

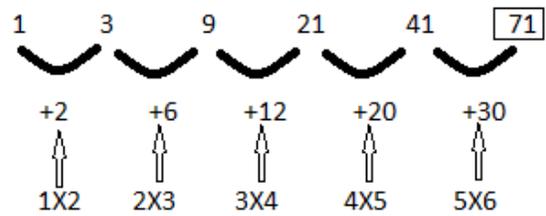
S46. Ans(c)

Sol.



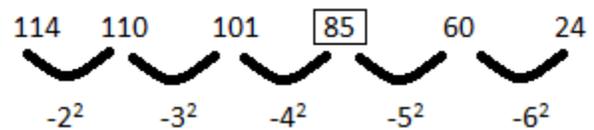
S47. Ans(b)

Sol.



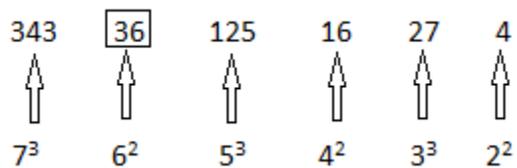
S48. Ans(d)

Sol.



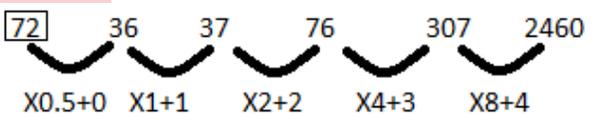
S49. Ans(b)

Sol.



S50. Ans(e)

Sol.



S51. Ans(b)

Sol. Here, the pattern followed is

$$220 + (6^3 - 6) = 430$$

$$430 + (7^3 - 7) = 766$$

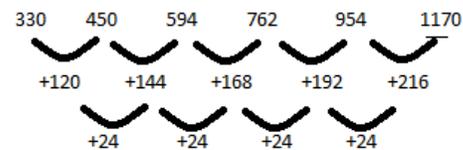
$$766 + (8^3 - 8) = 1270$$

$$1270 + (9^3 - 9) = 1990$$

$$1990 + (10^3 - 10) = 2980$$

S52. Ans(d)

Sol.



S53. Ans(a)

Sol. Here, the pattern followed is

$160 \times 0.5 = 80$
 $80 \times 1.5 = 120$
 $120 \times 2.5 = 300$
 $300 \times 3.5 = 1050$
 $1050 \times 4.5 = 4725$

S54. Ans(e)

Sol. Here, the pattern followed is

$10800 \div 6 = 1800$
 $1800 \times 5 = 9000$
 $9000 \div 4 = 2250$
 $2250 \times 3 = 6750$
 $6750 \div 2 = 3375$

S55. Ans(d)

Sol. Here, the pattern followed is

$(15^2+15)=240$
 $(17^2+17)=306$
 $(19^2+19)=380$
 $(21^2+21)=462$
 $(23^2+23)=552$
 $(25^2+25)=650$

S56. Ans(e)

Sol.

Let the marked price be Rs 100x

Then $SP=100x \times \frac{8}{10} \times \frac{9}{10} = Rs\ 72x$

Let cost price be Rs y

ATQ

$\frac{72x-y}{100x-y} = 0.3$

$y = 60x$

Profit percent = $\frac{12x}{60x} \times 100 = 20\%$

S57. Ans(c)

Sol.

Let first number and second number be x and y respectively

Then, $45 \times \frac{x}{100} = 60 \times \frac{y}{100}$

$3x=4y$(i)

And $\frac{x+y}{2} = x - 10$

$x - y = 20$ (ii)

From (i) and (ii)

$y=60$

80% of second number=48

S58. Ans.(b)

Sol. 1st year interest = $10000 \times \frac{20}{100} = Rs. 2000$

2nd year interest = $(10000 + 2000) \times \frac{21}{100} = Rs. 2520$

3rd year interest = $14520 \times 0.20 = Rs\ 2904$

Total Interest = $2000 + 2520+2904=Rs\ 7424$

S59. Ans(d)

Sol.

Let present age of Chintu be 5x years

Then present age of Binny=8x years

And present age of Amit=6x years

ATQ

$8x - 5x - (8x - 6x)=6$

$x = 6$

Required average=40 years

S60. Ans(a)

Sol.

Let the speed of boat in downstream be 8x km/hr

Then speed of boat in still water=5x km/hr

Speed of boat in upstream = $5x - (8x-5x) = 2x$ km/hr

ATQ

$\frac{30}{5} = 2x$

$x = 3$

Required time = $\frac{84}{24} = 3.5$ hrs.

S61. Ans.(b)

Sol. Total quantity of acid1 in mixture D

$= 25 \times \frac{55}{100} + 15 \times \frac{63}{100}$

$= 13.75+9.45$

$=23.20$ lit

Let there is x % of acid1 in mixture C

ATQ

$\Rightarrow 23.20 + \frac{x}{100} \times 30 = (100-48)\%$ of (30+40)

$\Rightarrow 23.20+0.3x=\frac{52}{100} \times 70$

$\Rightarrow 23.20+0.3x=36.4$

$\Rightarrow 0.3x=13.2$

$\Rightarrow x = \frac{132}{3}$

$x=44\%$

S62. Ans.(c)

Sol. Ratio of Total actual profit share of A, B and C

$= 92000 \times 12 : 115000 \times 12 : 138000 \times 12$

$= 4 : 5 : 6$

Let actual profit of A, B and C be 4x, 5x and 6x respectively.

After distribution of C's profit, C got

$= 6x \times \frac{50}{3} \times \frac{1}{100}$

$= x$

A and B got = $(6x-x) \times \frac{3}{5}$ and $(6x-x) \times \frac{2}{5}$ respectively

=3x and 2x respectively

Total actual profit = (4x+5x+6x)=15x

ATQ

2x=30000

15x=225000

∴ total actual profit = Rs. 225000

S63. Ans.(e)

Sol. Let purchasing price of bike for Manoj and Hemant be M and H respectively

ATQ

$$\Rightarrow M \left[1 - \frac{100}{17 \times 100} \right]^{16} = H \left[1 - \frac{100}{17 \times 100} \right]^{18}$$

$$\Rightarrow \frac{M}{H} = \left[1 - \frac{1}{17} \right]^2$$

$$\Rightarrow \frac{M}{H} = \frac{256}{289} \dots (i)$$

Now, $H - M = 1320$

$H = 1320 + M \dots (ii)$

On solving (i) & (ii), we get:

$M = \text{Rs. } 10240$

S64. Ans.(a)

Sol. Total distance covered by Vikash = 9+1=10 km.

Time taken by Vikash = 10×6

=60 min

So, time taken by Mohit = 60-4=56 min

Distance covered by Mohit = 9-1

=8 km

Speed of Mohit = $\frac{8}{56}$

= $\frac{1}{7}$ km/min.

S65. Ans.(c)

Sol. Let speed of current be C km/hr

So, speed of Boat in still water = 5C km/hr

After technical problem, speed of Boat (in still water)

= $5C \times \frac{4}{5} = 4C$

ATQ

$$\Rightarrow \frac{16}{5C+C} + \frac{40}{4C+C} = \frac{56}{\frac{7}{20} \times 60}$$

$$\Rightarrow \frac{16}{6C} + \frac{40}{5C} = \frac{56}{21}$$

⇒ C = 4 km/hr.

S66. Ans.(b)

Sol. Required probability = $\frac{{}^6C_1 \times {}^2C_1}{{}^{52}C_2}$

$$= \frac{6 \times 2}{{}^{52}C_2}$$

$$= \frac{1 \times 2}{6 \times 2}$$

$$= \frac{26 \times 51}{2}$$

$$= \frac{1}{221}$$

S67. Ans.(d)

Sol. Let side of square be 'x' & side of equilateral triangle be 'y'.

ATQ,

$$x = \frac{\sqrt{3}}{2} \times y \text{ [given]}$$

$$y = \frac{2x}{\sqrt{3}}$$

$$\text{Required ratio} = \frac{\frac{\sqrt{3}}{4} y^2}{x^2} = \frac{\sqrt{3}}{4} \times \left(\frac{2x}{\sqrt{3}} \right)^2 \times \frac{1}{x^2}$$

$$= \frac{\sqrt{3}}{4} \times \frac{4x^2}{3} \times \frac{1}{x^2}$$

$$= 1 : \sqrt{3}$$

S68. Ans.(c)

Sol. Let amount invested by Deepak at C.I. be 'Rs.x'.

So, amount invested by Deepak at S.I. = Rs (47000 - x)

Now,

Equivalent rate of interest of 15% C.I. for 2 years = 15 +

$$15 + \frac{15 \times 15}{100} = 32.25\%$$

ATQ,

$$\frac{x \times 32.25}{100} - \frac{(47000 - x) \times 2 \times 12}{100} = 532.5$$

$$32.25x + 24x = 1181250$$

x = 21000 Rs.

S69. Ans.(e)

Sol. Let present age of A be 'x' years.

So, present age of B = 2x years

And let present age of C be 'y' years.

ATQ,

$$\frac{x + 2x}{2} = 24$$

$$3x = 48$$

$$x = 16 \text{ years}$$

Hence, Present age of B = 2x

$$= 32 \text{ years}$$

Now,

$$\frac{32 + y}{2} = 38$$

$$y = 44 \text{ years.}$$

$$\text{So, required \%} = \frac{(32 + 16) - 44}{(32 + 16)} \times 100$$

$$= \frac{4}{48} \times 100$$

$$= 8\frac{1}{3}\%$$

S70. Ans.(a)

Sol. Let quantity of milk and water in vessel - A be '2x' and '3x' liters respectively.

And let quantity of milk and water in Vessel - B be '5y' and '3y' liters respectively.

ATQ,

$$2x \times \frac{50}{100} + 5y \times \frac{40}{100} = 36$$

$$\Rightarrow x + 2y = 36 \quad \dots (i)$$

Now,

$$3x \times \frac{50}{100} + 3y \times \frac{40}{100} = 36$$

$$1.5x + 1.2y = 36 \quad \dots (ii)$$

On solving (i) and (ii), we get:

$$y = 10 \text{ liters}$$

$$x = 16 \text{ liters}$$

$$\text{So, required ratio} = \frac{3x}{3y}$$

$$= \frac{48}{30}$$

$$= 8 : 5$$

S71. Ans(e)

Sol.

Given, cost price of A = Rs. x And SP= Rs 128

ATQ –

$$x \left(1 + \frac{(x-20)}{100} \right) = 128$$

$$100x + x^2 - 20x = 128$$

$$x^2 + 80x - 12800 = 0$$

$$x^2 + 160x - 80x - 12800 = 0$$

$$x(x + 160) - 80(x + 160)$$

x = Rs. 80 (neglecting the negative value of x since amount can never be in negative)

$$\text{Cost price of B} = 80 \times \frac{125}{100} = \text{Rs. } 100$$

Price at which shopkeeper should sell B to make profit of

$$40\% = 100 \times \frac{140}{100} = \text{Rs. } 140$$

S72. Ans(b)

Sol.

Let daily wage of P, Q&R be Rs. 21w, Rs. 16w & Rs. 18w respectively

And, Wages of P, Q&R for a weekday & Sunday be Rs.(21w + 125), Rs. (16w + 125) & Rs. (18w + 125) respectively

ATQ –

$$\frac{(21w + 125)}{(16w + 125)} = \frac{26}{21}$$

$$441w + 2625 = 416w + 3250$$

$$25w = 625$$

$$w = 25$$

$$\text{Wage of P on a Weekday \& Sunday} = 21 \times 25 + 125 = \text{Rs. } 650$$

$$\text{Wage of R on a Weekday \& Sunday} = 18 \times 25 + 125 = \text{Rs. } 575$$

$$\text{Required difference} = 650 - 575 = \text{Rs. } 75$$

S73. Ans(d)

Sol.

Let Veer invested = Rs. P

So, interest got by Veer after 10 years = Rs. P

ATQ –

$$\frac{P \times 10 \times R}{100} = P$$

$$R = 10\%$$

$$\text{Required amount} = X \times \left(1 + \frac{10}{100} \right)^3 = 5324$$

$$1.331X = 5324$$

$$X = \text{Rs. } 4000$$

S74. Ans.(d)

Sol.

Required number of the ways

$$= {}^8C_3 \times {}^6C_4$$

$$= \frac{8 \times 7 \times 6 \times 5!}{3! \times 5!} \times \frac{6 \times 5 \times 4!}{2! \times 4!}$$

$$= 840$$

S75. Ans.(c)

Sol.

Let length of Train A be 'x' meters and speed of Train A be 'V' m/sec.

So,

$$\frac{x}{V} = 9$$

$$x = 9V \quad \dots(i)$$

Now,

$$\frac{x+180}{150 \times \frac{5}{18} - V} = 57.6$$

$$\Rightarrow \frac{3(x+180)}{125-3V} = 57.6 \quad \dots(ii)$$

Put value of x in (ii)

$$\frac{3(9V+180)}{125-3V} = 57.6$$

$$\Rightarrow \frac{3V+60}{125-3V} = 6.4$$

$$3V + 60 = 800 - 19.2V$$

$$\Rightarrow V = \frac{100}{3} \text{ meter/sec}$$

Put value of V in (i)

$$x = 9 \times \frac{100}{3}$$

$$x = 300 \text{ meters}$$

$$\text{Required time} = \frac{180+300}{\frac{100}{3} + 150 \times \frac{5}{18}}$$

$$= \frac{480}{75}$$

$$= 6.4 \text{ seconds}$$

S76. Ans.(d)

Sol. Let Capacity of tank be 144 litre.

So, efficiency of Ist Pipe = 4 litre / min

Efficiency of IInd Pipe = 3 litre /min

Efficiency of IIIrd pipe = 8 litre /min

ATQ,

First tank will be filled by pipe Ist & IInd and then emptied when pipe Ist, IInd & IIIrd together are opened

$$\text{So, } (4 + 3) \times 16 = (8 - 4 - 3) t$$

$$t = \frac{112}{1} = 112 \text{ min.}$$

S77. Ans.(a)

Sol.

A	:	B	
Initially	8	:	5
	8×1	:	8×1
Finally	8	:	8

3 units = 13 litres

$$16 \text{ units} = \frac{13}{3} \times 16 \text{ litres}$$

$$\text{So, initially total quantity of liquid A} = \frac{8}{13} \times \frac{13}{3} \times 16 = \frac{128}{3} \text{ litres}$$

Or

Let quantity of liquid A & liquid B in the container initially be 8x & 5x liters respectively.

ATQ,

$$\frac{(8x - 13 \times \frac{8}{13})}{5x + 13 - 13 \times \frac{5}{13}} = \frac{1}{1}$$

$$x = \frac{16}{3} \text{ liters}$$

$$\text{So, required quantity} = \frac{16}{3} \times 8$$

$$= \frac{128}{3} \text{ liters}$$

S78. Ans.(d)

Sol. Let his average after 80 innings be 'x'

Atq,

$$80 \times x + 0 = 81 \times (x - 1)$$

$$80x = 81x - 81$$

$$x = 81$$

So, his new average = 81 - 1 = 80

S79. Ans.(b)

Sol. Let the distance covered by man between two places is 'D'

Atq.

$$7 = \frac{D}{16} + \frac{D}{12}$$

$$7 = D \left[\frac{3+4}{48} \right]$$

$$D = 48 \text{ km}$$

S80. Ans.(c)

Sol. Let cost price of book be '100x'

$$\text{So, Selling price of book} = 100x \times \left(1 + \frac{50}{300}\right) = \frac{350}{3} x$$

$$\text{Mark price of book} = \frac{350}{3} x \times \frac{100}{87.5} = \frac{400}{3} x$$

$$\therefore \text{Required Ratio} = \frac{100x}{\frac{400}{3}x}$$

$$= \frac{3}{4}$$

S81. Ans (d)

Sol. Let total book = 100x

ATQ

S.P of 40% books = C.P of 80% books

$$\frac{S.P}{C.P} = \frac{2}{1}$$

Let C.P and S.P of a book be a and 2a respectively.

$$\text{Then profit percent on selling 40% books} = \frac{2a-a}{a} \times 100 = 100\%$$

$$\text{S.P for 70% of remaining books} = a \times \frac{150}{100} = 1.5a$$

$$\text{Total S.P} = 40x \times 2a + \frac{70}{100} \times 60x \times 1.5a = 143ax$$

$$\text{Actual profit \%} = \frac{143ax - 100ax}{100ax} \times 100$$

$$= 43\%$$

S82. Ans (b)

Sol. Let efficiency of Shubham and Harvinder be S & H respectively.

ATQ

$$5S + 9H = 12H + 3S$$

$$2S = 3H$$

$$\frac{S}{H} = \frac{3}{2}$$

Let S & H be 3a & 2a respectively.

$$\text{So, total work} = 5 \times 3a + 9 \times 2a = 33a$$

$$\text{Time taken by Harvinder to complete the work while working alone} = \frac{33a}{2a}$$

$$= 16 \frac{1}{2} \text{ days}$$



S83. Ans (e)

Sol. Required solution = $\frac{6}{15} \times \frac{6}{15} \times \frac{6}{15} + \frac{4}{15} \times \frac{4}{15} \times \frac{4}{15} +$
 $\frac{5}{15} \times \frac{5}{15} \times \frac{5}{15}$
 $\Rightarrow \frac{216+64+125}{3375} = \frac{3}{25}$

S84. Ans (c)

Sol. Volume of large sphere = $\frac{4}{3}\pi R^3 \text{ cm}^3$

Volume of small sphere = $\frac{4}{3}\pi r^3 \text{ cm}^3$

ATQ

$\frac{4}{3}\pi R^3 = 64 \times \frac{4}{3}\pi r^3$

$\frac{R}{r} = \frac{4}{1}$

Let R and r be 4d and d respectively

Height of cone = $2a \text{ cm}$

Volume of one cone = $\frac{1}{3}\pi a^2 \times 2a = \frac{2}{3}\pi a^3$

ATQ

$\frac{4}{3}\pi r^3 = 16 \times \frac{2}{3}\pi a^3$

$\frac{4}{3}\pi d^3 = 16 \times \frac{2}{3}\pi a^3$

$a = \frac{d}{2}$

Required ratio = $4d : \frac{d}{2} : d$

$\Rightarrow 8:1:2$

S85. Ans (a)

Sol. When answer is asked in percent, we do not need exact data we can use ratio

So, $\frac{\text{ball}}{\text{bat}} = \frac{3575}{2002} = 25:14$

Let total no. of ball be 25 and total no. of bat be 14

ATQ

For ball

$850c.p = 799s.p$

$\frac{c.p}{s.p} = \frac{47}{50}$

Let c.p of one ball be 47a and s.p of one ball be 50a

For bat

$777c.p = 987s.p$

$\frac{c.p}{s.p} = \frac{47}{37}$

Let c.p of one bat be 47a and s.p of one bat be 37a

Total c.p for Pankaj = $47a \times 25 + 47a \times 14 = 1833a$

Total s.p for Pankaj = $50a \times 25 + 37a \times 14 = 1768a$

Loss % = $\frac{1833a-1768a}{1833a} \times 100 \approx 4\%$

S86. Ans.(e)

Sol.

Ratio of milk and water in mixture

$= 80 \times \frac{3}{4} : 80 \times \frac{1}{4}$

$= 3 : 1$

Remaining water and milk in mixture —

Milk = $80 \times \frac{3}{4} - 24 \times \frac{3}{4}$

$= 60 - 18$

$= 42 \text{ liter}$

Water = $80 \times \frac{1}{4} - 24 \times \frac{1}{4}$

$= 20 - 6$

$= 14 \text{ liter}$

Let x liter of water added

$\frac{42}{14+x} = \frac{7}{13}$

$98 + 7x = 546$

$7x = 448$

$x = 64 \text{ liter}$

S87. Ans (d)

Sol. Let l = slant height of the cone

h = height of the cone

H = height of cylinder

r = radius

ATQ

$\frac{\pi r l}{2\pi r H} = \frac{P}{8}$

$\Rightarrow \frac{l}{H} = \frac{P}{4}$

So, $H = \frac{60}{P}$

Now, $h = \sqrt{15^2 - 9^2} = 12 \text{ cm}$

$\Rightarrow \frac{1}{3}\pi r^2 h + \pi r^2 H = 1944\pi$

$\frac{1}{3} \times 81 \times 12 + 81 \times \frac{60}{P} = 1944$

$\therefore P = 3$

S88. Ans (b)

Sol. Let total no. of mobiles be y

$\Rightarrow y + 9 = 44$

So, number of mobiles = $y = 35$

And number of laptops = 9

Let cost price of a laptop and a mobile be Rs 2P and P respectively

ATQ

Total selling price = $\frac{4}{5} \times 35 \times (P + 3000) + 6 \times 2P \times$

$\frac{150}{100} = \text{Rs. } 636000$

$\Rightarrow P = 12000$

So, cost price of laptop and mobiles are Rs 24000 and Rs 12000 respectively.

Total cost price = $35 \times 12000 + 9 \times 24000 = \text{Rs } 636000$

\therefore no profit no loss occurs

S89. Ans (a)

Sol. Let the son with more money have Rs 10x and the son with less money have Rs 7x.

ATQ

$$936 = \frac{10x \times 18 \times 2}{100} - 7x \left[\left(1 + \frac{20}{100}\right)^2 - 1 \right]$$

$$\Rightarrow x = 1800$$

Interest earned by son with less money = 7 ×

$$1800 \left[\left(1 + \frac{20}{100}\right)^2 - 1 \right]$$

$$= \text{Rs } 5544$$

S90. Ans (b)

Sol. Time taken by Kunal to reach stopping point =

$$\frac{15}{50} \times 60 = 18 \text{ minutes}$$

Kunal stays at this point for 12 min so total time = 18 + 12 = 30 minutes

Distance covered by Kunal before Hemant leaves point B

$$= \frac{30}{60} \times 50 + 15 = 40 \text{ km}$$

Time taken by Hemant to reach his stopping point =

$$\frac{15}{60} \times 60 = 15 \text{ minutes}$$

Hemant stays at this point for 12 min so total time = 15 + 12 = 27 minutes

$$\text{Distance covered by Kunal in 27 minutes} = \frac{27}{60} \times 50 = 22.5 \text{ km}$$

Now the distance remaining is = 150 - (40 + 22.5 + 15) = 72.5 km

Time taken by them to meet each other in rest of distance

$$= \frac{72.5}{50+60} = \frac{29}{44} \text{ hour}$$

Distance between point A and meeting point = 40 + 22.5 +

$$50 \times \frac{29}{44} = \frac{1050}{11} \text{ km}$$

S91. Ans.(b)

Sol. Amount of loss incurred on selling 1st Car =

$$\left[52510 \times \frac{100}{89} - 52510 \right]$$

$$= 59000 - 52510 = \text{Rs. } 6490$$

Let cost price of second car be Rs. 20x.

$$\text{Selling price of second car will be} = 20x \times \frac{105}{100} = \text{Rs. } 21x$$

ATQ,

$$21x - 20x = 6490$$

$$x = 6490$$

$$20x = \text{Rs. } 129800$$

S92. Ans.(a)

Sol. Let length of train - A & train - B be '5x' & '6x' meters respectively.

And let speed of train - A & train - B be 'V₁ m/s' & 'V₂ m/s' respectively,

ATQ,

$$\frac{5x + 400}{36} = V_1 \quad \dots (i)$$

$$\text{And, } V_2 - V_1 = \frac{5x + 6x}{66}$$

$$V_2 - V_1 = \frac{x}{6}$$

$$V_1 = V_2 - \frac{x}{6} \quad \dots (ii)$$

Now,

$$\frac{6x}{72} = V_2$$

$$\frac{6x \times 7}{72} = V_2$$

$$\frac{7x}{12} = V_2 \quad \dots (iii)$$

On solving (ii) and (iii), we get:

$$V_1 = \frac{5x}{12} \quad \dots (iv)$$

On solving (i) and (iv), we get:

$$x = 40 \text{ m}$$

So, length of train - A = 5x = 200 m

$$\text{And speed of train - A} = \frac{5x}{12} = \frac{200}{12} = \frac{50}{3} \text{ m/sec}$$

$$\text{Now, required time} = \frac{200}{\frac{50}{3}} = 12 \text{ seconds.}$$

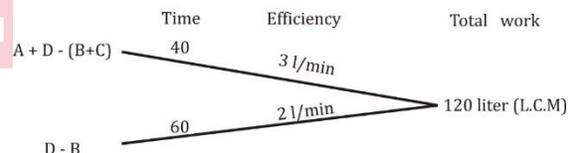
S93. Ans.(a)

Sol. Let efficiency of B be 'y liters/minute' and let efficiency of C be '4x liters/minute.'

$$\text{So, efficiency of A} = 4x \times \frac{125}{100} = 5x \text{ liters/minute}$$

$$\text{and efficiency of D} = 4x \times 2 = 8x \text{ liters/minute.}$$

Now,



Now,

$$5x + 8x - (y + 4x) = 3$$

$$9x - y = 3 \quad \dots (i)$$

And

$$8x - y = 2 \quad \dots (ii)$$

On solving (i) & (ii), we get:

$$x = 1, y = 6$$

Hence efficiency of A = 5x = 5 l/min

And efficiency of C = 4x = 4 l/min.

$$\text{So, required time} = \frac{120}{(5 - 4)} = 120 \text{ minutes}$$

S94. Ans.(d)

Sol. Possible outcomes = 9 [(1,4) (1,5)(2,3) (2,4)(3,2)(3,3)(4,1)(4,2)(5,1)]

So, required probability = $\frac{9}{36} = \frac{1}{4}$

S95. Ans.(b)

Sol. Let present age of A be x years and present age of B be y years.

So, present age of C = (y + 15) years

ATQ,

$$(y + 15) = (x + y) - 9$$

$$x = 24 \text{ years}$$

Now,

$$2(x + 6) = y + 6$$

$$60 = y + 6$$

$$y = 54 \text{ years}$$

Hence, present age of C = y + 15 = 69 years

$$\text{So, present age of D} = \frac{24 + 54 + 69}{3} - 4 = 49 - 4 = 45 \text{ years}$$

S96. Ans (a)

Sol. ATQ,

Water enter into ship in 1 hour = 15 tons

Water thrown out by pumps in 1 hour = 10 tons

Total time to sink ship in water = $\frac{40}{5} = 8$ hours

$$\text{So, required average speed} = \frac{108}{8} = 13.5 \text{ kmph}$$

S97. Ans (e)

Sol. Let efficiency of A and B be x units/day and y units/day respectively.

ATQ

$$(x + y) \times 6 = \left(x \times \frac{4}{5} + y \times \frac{13}{10}\right) \times 6$$

$$10x + 10y = 8x + 13y$$

$$2x = 3y$$

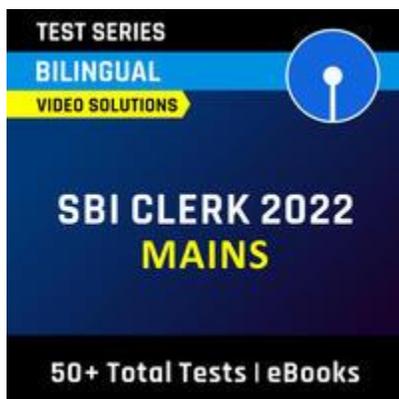
$$\frac{x}{y} = \frac{3}{2}$$

Now, let x = 3a and y = 2a

$$\text{Total work} = (3a + 2a) \times 6 = 30a \text{ units}$$

$$\text{Required days} = \frac{30a}{3a+2a \times 2}$$

$$= 4\frac{2}{7} \text{ days}$$



S98. Ans (c)

Sol.

Let percentage of tea in each of the two initial mixture be x%

Total quantity of tea in resultant mixture = $\frac{x}{100} \times 240 +$

$$\frac{x}{100} \times 360 = 6x$$

ATQ

$$6x = \frac{1}{3} \times (240 + 360)$$

$$x = 33\frac{1}{3}\%$$

Now, total quantity of sugar in resultant mixture =

$$= \left(240 - \frac{80}{300} \times 240 - \frac{1}{3} \times 240\right) + \frac{35}{100} \times 360 = 222 \text{ kg}$$

S99. Ans (d)

Sol. Ratio of profit share of Kapil and pooja =

$$\frac{80000 \times 8 + 120000 \times 4}{100000 \times 4 + 80000 \times 8} = \frac{14}{13}$$

Let total profit be Rs. P

$$\text{Annual salary of Pooja} = 2700 \times 12 = \text{Rs. } 32,400$$

ATQ

$$\text{Total profit earned by Kapil} = \frac{14}{27} \times (P - 32400) = 140000$$

$$\text{Total profit, P} = \text{Rs. } 302400$$

$$\text{So, required amount} = \frac{13}{27} \times (302400 - 32400) = \text{Rs. } 1,30,000$$

S100. Ans(a)

$$\text{Sol. required probability} = \frac{7}{15} \times \frac{6}{14} = 0.20$$

S101. Ans.(b)

Sol.

Total items B sold by store on Monday and Friday together

$$= \frac{240}{48} \times 32 + \frac{340}{68} \times 22$$

$$= 160 + 110 = 270$$

Total items C sold by store in Wednesday & Thursday together

$$= \frac{420}{35} \times 20 + \frac{360}{24} \times 20$$

$$= 240 + 300 = 540$$

$$\text{Required percentage} = \frac{540 - 270}{540} \times 100$$

$$= \frac{270}{540} \times 100 = 50\%$$

S102. Ans.(c)

Sol.

Average number of items B sold by store on Tuesday & Thursday

$$= \frac{\frac{320}{40} \times 48 + \frac{360}{24} \times 56}{2} = \frac{384 + 840}{2} = 612$$

Average number of items sold by store on Thursday &

$$\begin{aligned} \text{Friday} \\ &= \frac{360 + 340}{2} \\ &= \frac{700}{2} = 350 \end{aligned}$$

$$\text{Required difference} = 612 - 350 = 262$$

S103. Ans.(a)

Sol.

Total items B sold by store on Sunday

$$= \frac{360}{24} \times 56 \times \frac{125}{100} = 1050$$

Total items C sold by store on Sunday

$$= \frac{340}{68} \times 10 \times \frac{400}{100} = 200$$

$$\text{Total items B \& items C sold by store on Sunday} = 1050 + 200 = 1250$$

S104. Ans.(c)

Sol.

$$\begin{aligned} \text{Total items C sold on Wednesday} &= \frac{420}{35} \times 20 \\ &= 240 \end{aligned}$$

Total items C sold on Monday & Tuesday together

$$\begin{aligned} &= \frac{240}{48} \times 20 + \frac{320}{40} \times 12 \\ &= 100 + 96 = 196 \end{aligned}$$

$$\begin{aligned} \text{Required percentage} &= \frac{240 - 196}{196} \times 100 \\ &= \frac{44}{196} \times 100 = 22 \frac{22}{49} \% \end{aligned}$$

S105. Ans.(b)

Sol.

$$\begin{aligned} \text{Required ratio} &= \frac{\frac{240}{48} \times 100}{\frac{360}{24} \times 100} \\ &= \frac{500}{1500} \\ &= 1 : 3 \end{aligned}$$

S106. Ans.(c)

Sol. In 2017,

$$\begin{aligned} \text{Production of Audi cars} &= 25,000 \times \frac{104}{100} \\ &= 26,000 \end{aligned}$$

$$\begin{aligned} \text{Production of Suzuki cars} &= 35,000 \times \frac{105}{100} \\ &= 36,750 \end{aligned}$$

$$\begin{aligned} \text{Total cars produced in 2015} &= 45,000 + 35,000 + 25,000 \\ &= 105,000 \end{aligned}$$

$$\begin{aligned} \therefore \text{No. of Honda cars produced in 2017} &= 105,000 - 26,000 - 36,750 \\ &= 42,250 \end{aligned}$$

S107. Ans.(a)

$$\begin{aligned} \text{Sol. Required percentage} &= \frac{(30+35+45)-(35+30+25)}{(30+35+45)} \times 100 \\ &= \frac{110-90}{110} \times 100 \\ &= 18 \frac{2}{11} \% \text{ less} \end{aligned}$$

S108. Ans.(d)

$$\begin{aligned} \text{Sol. Required total} &= \frac{80}{100} \times 15,000 + \frac{75}{100} \times 40,000 + \\ &\frac{60}{100} \times 30,000 \\ &= 12,000 + 30,000 + 18,000 \\ &= 60,000 \end{aligned}$$

S109. Ans.(b)

$$\begin{aligned} \text{Sol. Required difference} &= 3.5[25 + 30 + 35] \times 1000 \\ &- 4.5[10 + 15 + 40] \times 1000 \\ &= 315,000 - 292,500 = \text{Rs. } 22,500 \text{ Lakh} \end{aligned}$$

S110. Ans. (d)

$$\begin{aligned} \text{Sol. Required difference} &= \left[\frac{20+35+30+25+40}{5} - \right. \\ &\left. \frac{(10+15+40+35+30)}{5} \right] \times 1000 \\ &= 30,000 - 26,000 = 4000 \end{aligned}$$

S111. Ans(d)

$$\begin{aligned} \text{Sol. No. of mobile sold by MI in rural area} &= 10010 \times \frac{5}{11} \times \\ &\frac{8}{13} = 2800 \\ \text{No. of laptop sold by APPLE in rural area} &= 20020 \times \frac{4}{7} \times \\ &\frac{76}{143} = 6080 \\ \text{Required difference} &= 6080 - 2800 = 3280 \end{aligned}$$

S112. Ans(a)

$$\begin{aligned} \text{Sol. Total laptop sold by MICROSOFT} &= 14300 \times \frac{7}{22} = \\ &4550 \\ \text{Non-defective laptop} &= 4550 - 650 = 3900 \\ \text{Hence, selling price of 3900 laptop is equal to cost price of} \\ &4550 \text{ laptop} \\ \text{Required percentage} &= \frac{650}{3900} \times 100 = 16 \frac{2}{3} \% \end{aligned}$$

S113. Ans(a)

$$\begin{aligned} \text{Sol. Average no. of mobile sold by MI, MICROSOFT and} \\ \text{APPLE in rural area} &= \\ &\frac{10010 \times \frac{5}{11} \times \frac{8}{13} + 14300 \times \frac{15}{22} \times \frac{22}{52} + 20020 \times \frac{4}{7} \times \frac{67}{143}}{3} = 4095 \\ \text{Required ratio} &= \frac{4095}{77000 \times \frac{3}{11}} = \frac{39}{200} \\ &\Rightarrow 39 : 200 \end{aligned}$$

S114. Ans(d)

Sol. Average no. of product sold by all companies
 $\Rightarrow \frac{10010+77000+14300+91000+20020}{5} = 42466$

Total product sold by HP in urban area = $91000 \times \frac{7}{13} = 49000$
 Required difference = $49000 - 42466 = 6534$ less

S115. Ans(c)

Sol. Required part = $\frac{20020 \times \frac{4}{7} \times \frac{76}{143}}{10010 \times \frac{6}{11} \times \frac{23}{39}} = \frac{304}{161}$

S116. Ans(c)

Sol.
 Required number of births in 2015 = $\{(29+27+26+23+22+36) - (30+25+28+22+20+35)\} = 3$

S117. Ans(b)

Sol.
 Number of births in 2018 = $189 - 181 = 8$
 Number of children born in 2012 is of 5 years in 2017 and will be of 6 years in 2018
 So required number of births that happened in 2012 = $32 + 8 - 33 = 7$

S118. Ans(a)

Sol.
 Required increased number of people = $189 - 163 = 26$

S119. Ans(e)

Sol.
 Number of births in 2016 = $176 - 163 = 13$
 Number of people whose age group from 0-5 in 2015 is changed to age group of 6-20 in 2016 = $29 + 13 - 31 = 11$
 Number of people whose age group from 6-20 in 2015 is changed to age group of 21-35 in 2016 = $11 + 27 - 29 = 9$
 Number of people whose age group from 21-35 in 2015 is changed to age group of 36-50 in 2016 = $9 + 26 - 32 = 3$

S120. Ans(b)

Sol.
 Number of people whose age is more than 20 years in 2017 = $33 + 20 + 26 + 42 = 121$
 Number of people whose age is less than 51 years in 2018 = $33 + 27 + 32 + 23 = 115$
 Required difference = 6

S121. Ans(a)

Sol.
 Let total income = $100x$
 ATQ -

$$100x \times \left(\frac{25}{100} \times \frac{20}{100} + \frac{30}{100} \times \frac{40}{100} \right) = 40800$$

$$17x = 40800$$

$$x = 2400$$

$$\text{Income of C} = 240000 \times \frac{30}{100} = 72000 \text{ Rs.}$$

S122. Ans(b)

Sol.
 Let total income in 2016 = $100n$
 Total income of B & D in the year 2016 = $100n$
 $\times \left(\frac{35}{100} + \frac{10}{100} \right) = 45n$
 Total income of B & D in the year 2017 = $100n$
 $\times \left(\frac{35}{100} \times \frac{120}{100} + \frac{10}{100} \times \frac{140}{100} \right) = 56n$
 Required ratio = $\frac{45n}{56n} = 45 : 56$

S123. Ans(d)

Sol.
 Let total income = $100b$
 And total expenditure of each A & B be 'E'
 ATQ -
 Required percent = $\frac{(35b - E) - (25b - E)}{10b} \times 100$
 $= \frac{10b}{10b} \times 100 = 100\%$

S124. Ans(b)

Sol.
 Let total income = $100x$
 ATQ -
 $25x - 10x = 30000$
 $x = 2000$
 Required difference = $200000 \left(\frac{35}{100} \times \frac{140}{100} - \frac{30}{100} \times \frac{120}{100} \right)$
 $= 26000 \text{ Rs.}$

S125. Ans(c)

Sol.
 Let total income = $100x$
 Total income of A & D = $35x$
 Required angle = $\frac{35x}{100x} \times 360 = 126^\circ$

S126. Ans(e)

Sol. cost price of product B = $28000 \times \frac{136}{100} = \text{Rs. } 38080$
 Profit = $28000 \times \frac{36}{100} \times \frac{1}{6} = \text{Rs. } 1680$
 Selling price of product B = $38080 + 1680 = \text{Rs. } 39760$
 Market price = selling price = $\text{Rs. } 39760$

S127. Ans(c)

Sol. cost price of product A = $10000 \times \frac{140}{100} = \text{Rs. } 14000$

cost price of product E = $36000 \times \frac{110}{100} = \text{Rs. } 39600$

required ratio = $\frac{14000}{39600} = \frac{35}{99}$

S128. Ans(a)

Sol. cost price of product D = $40000 \times \frac{104}{100} = \text{Rs. } 41600$

Cost price of product D after excluding transportation cost

$$41600 - 40000 \times \frac{4}{100} \times \frac{10}{100} = \text{Rs. } 41440$$

S.P for product D = $41440 \times \frac{125}{100} = \text{Rs. } 51800$

S129. Ans(b)

Sol. production cost of product B = $28000 \times \frac{36}{100} = \text{Rs. } 10080$

Production cost of product C = $22000 \times \frac{18}{100} = \text{Rs. } 3960$

Required percentage = $\frac{10080-3960}{3960} \times 100$

$$\Rightarrow \frac{6120}{3960} \times 100 \approx 155\%$$

S130. Ans(e)

Sol. selling price of product E = $36000 \times \frac{110}{100} \times \frac{1200}{1100} = \text{Rs. } 43200$

Cost price of product B = $28000 \times \frac{136}{100} = \text{Rs. } 38080$

Required profit percentage (d) = $\frac{43200-38080}{38080} \times 100 \approx 13\%$

S131. Ans(b)

Sol.

Total stock of plant C in 2002 = $960 \times \frac{125}{100} + (960 -$

$$960 \times \frac{50}{100}) = 1680$$

Total stock of plant E in 2002 = $1200 \times \frac{120}{100} + (1200 -$

$$1200 \times \frac{60}{100}) = 1920$$

Required percent = $\frac{1920-1680}{1680} \times 100$

$$= \frac{240}{1680} \times 100 = 12.5\%$$



S132. Ans(d)

Sol.

Total stock of plant A in 2002 = $900 \times \frac{112}{100} + (900 -$

$$900 \times \frac{35}{100}) = 1593$$

Average of unsold mobiles by plant D & E in 2001 =

$$\frac{1080 \times \frac{60}{100} + 1200 \times \frac{40}{100}}{2} = \frac{1128}{2} = 564$$

Required difference = $1593 - 564 = 1029$

S133. Ans(a)

Sol.

Total 8GB mobiles manufactured by plant B in 2001 = 720

$$\times \frac{55}{100} = 396$$

Total unsold 8GB mobiles of plant B in 2001 = 396

$$- 720 \times \frac{5}{8} \times \frac{64}{100} = 396 - 288 = 108$$

Total stock of plant D in 2002 = $1080 \times \frac{112.5}{100} +$

$$(1080 - 1080 \times \frac{40}{100}) = 1863$$

Required ratio = $\frac{108}{1863}$

$$= 4 : 69$$

S134. Ans(e)

Sol.

Total stock of plant B in the year 2001 = $720 \times \frac{115}{100} + (720 -$

$$720 \times \frac{5}{8}) = 1098$$

Total unsold mobiles of plant B & E together in 2016 =

$$720 \times \frac{3}{8} + 1200 \times \frac{40}{100} = 270 + 480 = 750$$

Required percentage = $\frac{1098-750}{750} \times 100$

$$= \frac{348}{750} \times 100 = 46.4\%$$

S135. Ans(c)

Sol.

Total stock of plant A in 2002 = $900 \times \frac{112}{100} + (900 -$

$$900 \times \frac{35}{100}) = 1593$$

Total stock of plant D in 2002 = $1080 \times \frac{112.5}{100} + (1080 -$

$$- 1080 \times \frac{40}{100})$$

= 1863

Total unsold mobiles of plant A & D together in 2002

$$= (1593 - 900 \times \frac{35}{100} \times \frac{120}{100}) + (1863 - 1080 \times \frac{40}{100} \times \frac{125}{100})$$

= 1215 + 1323

= 2538

S136. Ans(b)

Sol.

$$\text{Required average} = \frac{30+40+35+30}{4} = 33.75$$

S137. Ans(e)

Sol.

Total cars by A = 30+25 = 55

Total cars by B & C together = 40 + 30 + 35 + 40 = 145

$$\text{Required \%} = \frac{55}{145} \times 100 = 37.93\% \approx 38\%$$

S138. Ans(a)

Sol.Total production of hatchback cars in next month =

$$(30 + 40 + 35 + 30) \times \frac{120}{100} = 162$$

$$\text{Total sales} = (30 + 40 + 35 + 30) \times \frac{80}{100} = 108$$

$$\text{Unsold cars in next month} = 162 - 108 = 54$$

S139. Ans(a)

Sol.

Total revenue from sales of sedan cars of company C =

$$40 \times 7 \text{ lakh} = \text{Rs. } 280 \text{ lakh}$$

Total revenue from sales of sedan cars of company D =

$$35 \times 9 \text{ lakh} = \text{Rs. } 315 \text{ lakh}$$

$$\text{Required \%} = \frac{315-280}{315} \times 100$$

$$= 11 \frac{1}{9} \%$$

S140. Ans(d)

Sol.

$$\text{Required ratio} = \frac{40+35}{40+35} = 1:1$$

S141. Ans(c)

Sol. Average number of male labours from 2012,2013 and

$$2015 \text{ together} = \frac{120+240+300}{3}$$

=220

Average number of female labours from 2011 and 2013

$$\text{together} = \frac{260+120}{2} = 190$$

$$\text{Required difference} = 220 - 190 = 30$$

S142. Ans(b)

Sol. total male labours from 2014 and 2015

$$\text{together} = 300 + 160 = 460$$

total female labours from 2012 and 2013

$$\text{together} = 180 + 120 = 300$$

$$\text{Required ratio} = \frac{460}{300} = \frac{23}{15} = 23:15$$

S143. Ans(d)

Sol. Average number of total male labours from all the

$$\text{given years together} = \frac{80+120+240+160+300+360}{6} = 210$$

average number of female labours from 2014,2015 and

$$2016 \text{ together} = \frac{240+360+300}{3} = 300$$

$$\text{Required percentage} = \frac{300-210}{300} \times 100 = 30\%$$

S144. Ans(a)

Sol. Total male labours from 2011,2012 and 2016

$$\text{together} = 80 + 120 + 360 = 560$$

total female labours from 2011,2013 and 2014

$$\text{together} = 260 + 120 + 240 = 620$$

$$\text{Required difference} = 620 - 560 = 60$$

S145. Ans(e)

$$\text{Sol. total male labours in 2017} = 300 \times \frac{110}{100} = 330$$

$$\text{total female labours in 2017} = 360 \times \frac{115}{100} = 414$$

Total numbers of male and female labours together in

$$2017 = 330 + 414 = 744$$

S146. Ans.(b)

$$\text{Sol. Invalid votes of village A} = 50000 \times \frac{70}{100} \times \frac{20}{100} = 7000$$

$$\text{Invalid votes of village D} = 100000 \times \frac{75}{100} \times \frac{28}{100} = 21000$$

$$\text{So, required ratio} = \frac{7000}{21000} = \frac{1}{3} = 1:3$$

S147. Ans.(d)

Sol. Total valid votes of village B and E together = 40000 ×

$$\frac{75}{100} \times \frac{60}{100} + 80000 \times \frac{90}{100} \times \frac{70}{100}$$

$$= 18000 + 50400 = 68400$$

Total votes polled in village A, B & D together = 50000 ×

$$\frac{70}{100} + 40000 \times \frac{75}{100} + 100000 \times \frac{75}{100}$$

$$= 35000 + 30000 + 75000 = 140000$$

$$\text{Required difference} = \frac{140000}{3} - \frac{68400}{2} = \frac{280000 - 205200}{6} =$$

$$\frac{74800}{6} = 12466.67 = 12500 \text{ (approx.)}$$

S148. Ans.(a)

Sol. Invalid votes of village B & C together = 40000 ×

$$\frac{75}{100} \times \frac{40}{100} + 75000 \times \frac{80}{100} \times \frac{25}{100}$$

$$= 12000 + 15000 = 27000$$

Total votes polled in village C & E together = 75000 × $\frac{80}{100} + 80000 \times \frac{90}{100}$
 = 60000 + 72000 = 132000
 Required % = $\frac{27000}{132000} \times 100 = \frac{225}{11}\%$
 = 20 $\frac{5}{11}\%$

S149. Ans.(b)

Sol. Valid votes of village E = 80000 × $\frac{90}{100} \times \frac{70}{100} = 50400$
 Invalid votes of village E = 80000 × $\frac{90}{100} \times \frac{30}{100} = 21600$
 Required % = $\frac{(50400 - 21600)}{50000} \times 100 = \frac{28800}{500}\%$ = 57.6% = 58% (approx.).

S150. Ans.(e).

Sol. Invalid votes in village C & D together = 75000 × $\frac{80}{100} \times \frac{25}{100} + 100000 \times \frac{75}{100} \times \frac{28}{100}$
 = 15000 + 21000 = 36000
 Invalid votes in village A, B & E together
 = 50000 × $\frac{70}{100} \times \frac{20}{100} + 40000 \times \frac{75}{100} \times \frac{40}{100} + 80000 \times \frac{90}{100} \times \frac{30}{100}$
 = 7000 + 12000 + 21600 = 40600
 Required % = $\frac{40600 - 36000}{40600} \times 100 = \frac{4600}{40600} \times 100 = 11.33\%$ = 11% (approx.)

S151. Ans.(e)

Sol.
Quantity I –
 Ratio of age of Anurag, Bhumi, Dharmendra & Ekta = 6 : 7 : 9 : 5
 Let age of Anurag, Bhumi, Dharmendra & Ekta be 6x, 7x, 9x and 5x years respectively.
 And age of Chiru = (9x - 6) years
ATQ,
 $\frac{6x+7x+9x+5x}{4} = \frac{9}{10}$
 $\frac{27x}{36x-24} = \frac{9}{10}$
 270x = 324x - 216
 54x = 216
 x = 4 years
 Age of Chiru = (9 × 4 - 6)
 = 30 years
Quantity II –
 Ratio of age of Anurag, Bhumi, Dharmendra & Ekta = 6 : 7 : 9 : 5
 Let age of Anurag, Bhumi, Dharmendra & Ekta be 6x, 7x, 9x and 5x years respectively.
 And. age of Chiru = (9x - 6) years

ATQ,
 $\frac{6x+7x+9x+5x}{4} = \frac{9}{10}$
 $\frac{27x}{36x-24} = \frac{9}{10}$
 270x = 324x - 216
 54x = 216
 x = 4

Average age of Anurag & Dharmendra
 = $\frac{6 \times 4 + 9 \times 4}{2}$
 = $\frac{24 + 36}{2}$
 = 30 years

So, Quantity I = Quantity II

S152. Ans.(a)

Sol.
ATQ,
 $(x + 16) \times \frac{80}{100} = (x + 56) \times \frac{160}{3} \times \frac{1}{100}$
 4x = 256
 x = 64 ℓ
Quantity I –
 total milk in vessel A = (64+16) × $\frac{5}{8}$
 = 50ℓ
 Total milk in vessel B = (64 + 56) × $\frac{7}{12}$
 = 70 ℓ
 Total milk in vessel A & B = (50 + 70) = 120 ℓ
Quantity II –
 140% of (64 + 16) = $\frac{140}{100} \times 80$
 = 112ℓ
So, Quantity I > Quantity II

S153. Ans(b)

Sol.
Quantity I –
 Radius of cone (r) = Side of square - 4 cm
 Area of square, a² = 324 cm²
 Side of square(a) = 18 cm
 So, r = 18 - 4
 r = 14cm
 now,
 Radius of circle = $\frac{44}{22} \times \frac{7}{2} = 7$ cm
 (circumference of circle = 2πr)
 Height of cone = Radius of circle + 5
 = 7 + 5 = 12 cm
 Volume of cone = $\frac{22}{7} \times 14 \times 14 \times \frac{12}{3}$
 = 2464 cm³

Quantity II – 2488 cm³

So, Quantity I < Quantity II

S154. Ans(d)

Sol.

Quantity I – $x^2 - 21x + 108 = 0$

$$x^2 - 12x - 9x + 108 = 0$$

$$x(x - 12) - 9(x - 12) = 0$$

$$(x - 9)(x - 12) = 0$$

$$x = 9, 12$$

Quantity II – $x^2 - 30x + 216 = 0$

$$x(x - 12) - 18(x - 12) = 0$$

$$(x - 18)(x - 12) = 0$$

$$x = 18, 12$$

So, Quantity I ≤ Quantity II

S155. Ans (b)

Sol.

Let speed of longer train and smaller train be $7x$ and $8x$ m/s respectively.

ATQ—

$$(7x + 8x) \times \frac{5}{18} = \frac{(240+210)}{6}$$

$$25x = 450$$

$$x = 18$$

Speed of longer train = $18 \times 7 = 126$ km/hr

Speed of smaller train = $18 \times 8 = 144$ km/hr

Let length of platform be L meter

$$144 \times \frac{5}{18} = \frac{L+210}{9}$$

$$L = 150 \text{ meter}$$

Then, length of bridge = $150 + 60 = 210$ meters

Let time taken by slower train to cross bridge be T sec.

$$126 \times \frac{5}{18} = \frac{240+210}{T}$$

$$35T = 450$$

$$T = \frac{90}{7} \text{ sec.}$$

Quantity II – 16 sec

So, Quantity I < Quantity II

S156. Ans(c)

Sol.

From I, speed of bike = $\frac{100}{5} = 20 \frac{\text{km}}{\text{hr}}$

From II,

$$\text{Speed ratio } \frac{\text{bike}}{\text{car}} = \frac{5}{7}$$

Speed of car = 28 kmph

$$\text{Time taken} = \frac{100}{28} = 3 \frac{4}{7} \text{ hour}$$

So, both statement I and II together is sufficient.

S157. Ans(d)

Sol.

From I, Let time taken by Kareena alone and Deepika alone to complete the work be K days & D days respectively.

ATQ,

$$\frac{1}{K} + \frac{1}{D} = \frac{1}{10}$$

From II, Let time taken by Kareena alone and Madhuri alone to complete the work be K days & M days respectively.

ATQ,

$$\frac{1}{K} + \frac{1}{M} = \frac{1}{6}$$

From both, we cannot determine the time taken by Deepika when working alone.

So, neither statement I nor II is sufficient.

S158. Ans(a)

Sol.

From I, Boys = 12 Girls = 20 – 12 = 8

No. of ways = ${}^{12}C_4 \times {}^8C_5 = 27720$

From II, boys : girls = 3:2

No other information provided.

So, only statement I alone is sufficient.

S159. Ans(e)

Sol. let height, slant height and radius of tent be h , l , and r cm respectively.

$$\text{From I, } \frac{h}{r} = \frac{4}{3}$$

$h + r = 14$; from here we can determine values of h and r and then we can find volume of tent.

$$\text{From II, } l = \sqrt{r^2 + h^2}$$

From here, value of h can be determined then we can find volume of tent.

So, either statement I or II alone is sufficient.

S160. Ans(c)

Sol.

$$\text{From I, } \frac{a}{b} = \frac{3}{2}$$

$$\text{From II, } a^3 - b^3 = (a - b)(a^2 + b^2 + ab) = 19$$

On combining I & II:

$$(3x - 2x)((3x)^2 + (2x)^2 + (3x)(2x)) = 19$$

$$\Rightarrow x = 1$$

Hence, $a = 3$ & $b = 2$

So, both statements I & II together are sufficient.

S161. Ans.(b)

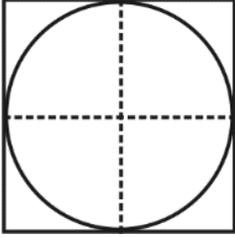
Sol.

Quantity I – if solid body is sphere of radius 5 cm

Smallest side of cuboidal box = diameter of sphere

= 10cm

So, minimum volume of cuboidal box = $\ell \times b \times h$
 = $10 \times 10 \times 10$
 = 1000 cm^3



Quantity II - If solid body is hemispherical of diameter 13 cm

Smallest side of cuboidal box = radius of hemisphere
 And other two sides will be equal to diameter of hemisphere

So, minimum volume of cuboidal box = $\ell \times b \times h$
 = $13 \times 13 \times \frac{13}{2}$
 = $\frac{2197}{2} = 1098.5 \text{ cm}^3$

Quantity II > Quantity I

S162. Ans.(b)

Sol.

Quantity I - $6x^2 + 3x + 2x + 1 = 0$

$(3x + 1)(2x + 1) = 0$

$x = -\frac{1}{2}, -\frac{1}{3}$

Quantity II - $20y^2 + 5y + 4y + 1 = 0$

$(4y + 1)(5y + 1) = 0$

$y = -\frac{1}{4}, -\frac{1}{5}$

⇒ Quantity II > Quantity I

S163. Ans.(b)

Sol.

Quantity I - Work done by 1 man in 1 day = $\frac{1}{24 \times 16} = \frac{1}{384}$

Work done by 1 woman in 1 day = $\frac{1}{32 \times 24} = \frac{1}{768}$

Work done by (16M + 16W) in 12 days = $\left[\frac{16}{384} + \frac{16}{768}\right] \times 12$
 = $\frac{3}{4}$

Work done by (16M + 16W) in 2 days = $\left[\frac{16}{384} + \frac{16}{768}\right] \times 2$

= $\left[\frac{1}{24} + \frac{1}{48}\right] \times 2$

= $\frac{1}{8}$

Remaining work = $1 - \frac{3}{4} - \frac{1}{8} = \frac{1}{8}$

Additional men required to complete remaining work in 2

days = $\frac{384}{2 \times 8} = 24$

Quantity II - Consonants = (T, T, T, Q)

Vowels = (E, E, E, E, U)

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

Required ways = ${}^5C_4 \times \frac{4!}{3!} \times \frac{5!}{4!}$

= $5 \times 4 \times 5$

= 100

⇒ Quantity II > Quantity I

S164. Ans.(a)

Sol.

Quantity I - $2x^2 - 3x - 4x + 6 = 0$

$x(2x - 3) - 2(2x - 3) = 0$

$(x - 2)(2x - 3) = 0$

$x = 2, \frac{3}{2}$

Quantity II - $2y(y - 1) + 1(y - 1) = 0$

$(2y + 1)(y - 1) = 0$

$y = -\frac{1}{2}, 1$

Quantity I > Quantity II

S165. Ans.(b)

Sol.

Quantity I -

SI = $\frac{15000 \times 18 \times 3}{100} = 8100$

CI = $18000 \left[1 + \frac{15}{100}\right]^2 - 18000 = 5805$

Difference = $8100 - 5805 = \text{Rs. } 2295$

Quantity II - Let no. of males be 5x and females be 4x in 2017

∴ ATQ,

$x = 990$

Total population in 2017 = 9x

= 9×990

= 8910

No. of male in 2018 = $8910 \times \frac{110}{100} \times \frac{5}{9}$

= 5445

Quantity II > Quantity I

Sol (166-170):

Distance covered in still water = 175 km

distance covered in upstream = $\frac{375-175}{10} \times 3 = 60 \text{ km}$

distance covered in downstream = $200 - 60 = 140$

let fuel consumption in still water = 8x lit per km

then, fuel consumption in upstream = $8x \times \frac{9}{8} =$

$9x \text{ lit per km}$

and fuel consumption in downstream = $8x \times \frac{75}{100} =$

$6x \text{ lit per km}$

ATQ

In return journey downstream distance will become upstream distance and vice-versa

$$175 \times 8x + 140 \times 9x + 60 \times 6x - 175 \times 8x -$$

$$140 \times 6x - 60 \times 9x = \frac{10}{3}$$

$$1620x - 1380x = \frac{10}{3}$$

$$x = \frac{1}{72}$$

S166. Ans(c)

Sol. In return journey downstream distance will become upstream distance and vice-versa

Let speed of boat in upstream = S km/h

ATQ

$$\frac{140}{S} - \frac{60}{40} = \frac{11}{2}$$

$$\frac{140}{S} = 7$$

$$S = 20 \text{ km/h}$$

S167. Ans(b)

Sol. total distance covered in downstream = 140 + 60 = 200km

$$\text{Rate of fuel consumption} = 6x = 6 \times \frac{1}{72} = \frac{1}{12}$$

$$\text{Fuel required} = \frac{200}{12} = 16.67 \approx 17 \text{ lit.}$$

S168. Ans(d)

Sol. total distance covered in still water = 175 + 175 = 350 km

$$\text{Total distance covered in upstream} = 140 + 60 = 200 \text{ km}$$

$$\text{Required percentage} = \frac{350-200}{200} \times 100 = 75\%$$

S169. Ans(b)

Sol. rate of fuel consumption in upstream = 9x = 9 \times \frac{1}{72} =

$$\frac{1}{8}$$

8 km in 1 lit

S170. Ans(b)

Sol. distance covered in still water in return journey = 175 km

$$\text{Required sum} = 175 \times 8 \times \frac{1}{72} \times 81 = \text{Rs. } 1575$$

S(171-175)

$$\text{Total students appeared in all exams} = 50000 \times \frac{60}{100} = 30000$$

$$\text{Total Students appeared in railway exams} = 30000 \times$$

$$\frac{20}{100} = 6000$$

$$\text{Total Students appeared in ctet exams} = 30000 \times \frac{10}{100} = 3000$$

$$\text{Total Students appeared in cgl exams} = 30000 \times \frac{15}{100} = 4500$$

$$\text{Total Students appeared in chsl exams} = 30000 \times \frac{13}{100} = 3900$$

$$\text{Total Students appeared in cpo exams} = 30000 \times \frac{12}{100} = 3600$$

$$\text{Total Students appeared in banking exams} = 30000 \times \frac{30}{100} = 9000$$

S171. Ans(d)

Sol. students passed from general category in banking =

$$9000 \times \frac{15}{36} \times \frac{20}{100} = 750$$

students passed from obc category in banking =

$$9000 \times \frac{10}{36} \times \frac{10}{100} = 250$$

students passed from other category in banking = 1330 - 750 - 250 = 330

$$\text{required percentage} = \frac{330}{9000 \times \frac{11}{36}} \times 100 = 12\%$$

S172. Ans(b)

Sol. no. of students appeared in cgl exam from general category = 4500 \times \frac{5}{18} = 1250

no. of students appeared in cpo exam from other category = 3600 \times \frac{5}{20} = 900

$$\text{required ratio} = 1250 : 900 = 25 : 18$$

S173. Ans(a)

Sol. total no. of students belonging to obc who appeared in all exam

$$6000 \times \frac{8}{20} + 3000 \times \frac{4}{15} + 4500 \times \frac{6}{18} + 3900 \times \frac{7}{13} +$$

$$3600 \times \frac{8}{20} + 9000 \times \frac{10}{36} = 10740$$

$$\text{Required average} = \frac{10740}{6} = 1790$$

S174. Ans(e)

Sol. Total no. of students belonging to general category and appeared in banking exam = 9000 \times \frac{15}{36} = 3750

Total no. of students applied for all the exams belonging to rural area = 50000 - \frac{3750}{15} \times 100 = 25000

S175. Ans(b)

$$\text{Sol. required percentage} = \frac{6000}{50000-30000} \times 100 = 30\%$$

S176. Ans(b)

Sol.

$$\text{Total girls appeared from AP} = 48000 \times \frac{70}{100} \times \frac{80}{100} \times \frac{11}{24} = 12320$$

$$\text{Total girls appeared from UP} = 54000 \times \frac{70}{100} \times \frac{90}{100} \times \frac{4}{9} = 15120$$

$$\text{Required difference} = 15120 - 12320 = 2800$$

S177. Ans(d)

Sol.

$$\text{Total girls appeared from Bihar} = 36000 \times \frac{68}{100} \times \frac{75}{100} \times \frac{1}{3} = 6120$$

$$\text{Total girls from Bihar} = 36000 \times \frac{32}{100} = 11520$$

$$\text{Required percentage} = \frac{6120}{11520} \times 100 = 53.125\%$$

S178. Ans(e)

Sol.

$$\text{Total girls appeared in exam from MP} = 42000 \times \frac{60}{100} \times \frac{80}{100} \times \frac{9}{16} = 11340$$

$$\text{Total boys appeared in exam from AP} = 48000 \times \frac{70}{100} \times \frac{80}{100} = 26880$$

$$\text{Required ratio} = \frac{11340}{26880} = 27 : 64$$

S179. Ans(e)

Sol.

$$\text{Total girls appeared in the exam from Rajasthan} = 50000 \times \frac{56}{100} \times \frac{96}{100} \times \frac{3}{4} = 20160$$

$$\text{Total boys from Rajasthan} = 50000 \times \frac{56}{100} = 28000$$

$$\text{Required percentage} = \frac{28000 - 20160}{28000} \times 100 = \frac{7840}{28000} \times 100 = 28\%$$

S180. Ans(a)

Sol.

$$\text{Total boys appeared in exam from Bihar} = 36000 \times \frac{68}{100} \times \frac{75}{100} = 18360$$

$$\text{Total boys appeared in exam from MP} = 42000 \times \frac{60}{100} \times \frac{80}{100} = 20160$$

$$\text{Required average} = \frac{18360 + 20160}{2} = \frac{38520}{2} = 19260$$

S181. Ans(c)

Sol.

From I -

$$\text{Let income of Sameer} = 25x$$

$$\text{So, income of Veer} = 25x \times \frac{96}{100} = 24x$$

$$\text{Let expenditure of Veer} = 7y$$

$$\text{So, expenditure of Sameer} = 8y$$

$$\text{Deepak spend } \frac{3}{5} \text{ th of his income.}$$

From II -

$$\text{Saving of Sameer} = 7000 \text{ Rs.}$$

$$\text{Saving of Veer} = 7400$$

And, Income of Deepak is Rs. 1000 more than that of Sameer

From I & II -

$$\frac{(25x - 7000)}{(24x - 7400)} = \frac{8y}{7y}$$

$$17x = 10200$$

$$x = 600 \text{ Rs.}$$

$$\text{Income of Deepak} = 25 \times 600 + 1000 = 16000 \text{ Rs.}$$

$$\text{Saving of Deepak} = \frac{2}{5} \times 16000 = 6400 \text{ Rs.}$$

$$\text{Respective ratio of saving of Veer \& Deepak} = 7400 : 6400 = 37 : 32$$

So, Statement I & II together is sufficient to give answer of the question.

S182. Ans(b)

Sol.

$$\text{Let cost price} = 100x$$

$$\text{Marked price} = 140x$$

From I -

$$140x \times \frac{75}{100} - 100x = 50$$

$$5x = 50$$

$$x = 10 \text{ Rs.}$$

$$\text{Cost price} = 1000 \text{ Rs.}$$

Statement I alone is sufficient.

From II -

$$(140x \times \frac{6}{7} \times \frac{90}{100}) - 100x = 80$$

$$8x = 80$$

$$x = 10 \text{ Rs.}$$

$$\text{Cost price} = 1000 \text{ Rs.}$$

Statement II alone is sufficient.

So, either statement I or II alone is sufficient to give answer of the question.

S183. Ans(a)

Sol.

$$\text{Given, number of green balls} = 5$$

$$\text{So, let total number of blue balls} = x$$

$$\text{So, number of red balls} = (7 - x)$$

From I -

$$\frac{x}{12} + \frac{7-x}{12} = \frac{7}{12}$$

So, we can't determine value of x from statement I

From II -

$$\frac{x(x-1)}{12 \times 11} + \frac{(7-x)(6-x)}{12 \times 11} = \frac{1}{6}$$

$$2x^2 - 14x + 42 = 22$$

$$2x^2 - 14x + 20 = 0$$

$$2x^2 - 10x - 4x + 20 = 0$$

$$2x(x-5) - 4(x-5) = 0$$

$$x = 2, 5$$

From II alone we can determine the difference between blue & red balls in the bag.

So, only statement II alone is sufficient to give answer of the question.

S184. Ans(b)

Sol.

Let radius of circle = r cm

So, side of square = r + 3.5 cm

From I -

$$2 \times \frac{22}{7} \times r - 2r = 45$$

$$r = 10.5 \text{ cm}$$

$$\text{side of square} = 10.5 + 3.5 = 14 \text{ cm}$$

$$\text{Area of square} = 196 \text{ cm}^2$$

Statement I alone is sufficient to give answer.

From II -

Let breadth of rectangle = 2x

So, radius of circle will be = 3x

ATQ -

$$\frac{2 \times \frac{22}{7} \times 3x}{2(2x+15)} = \frac{3}{2}$$

$$x = 3.5 \text{ cm}$$

$$\text{Radius of circle} = 10.5 \text{ cm}$$

$$\text{side of square} = 10.5 + 3.5 = 14 \text{ cm}$$

$$\text{Area of square} = 196 \text{ cm}^2$$

So, either statement I or Statement II alone is sufficient.

S185. Ans(e)

Sol.

From I -

Difference between speed of train A & B = 10 meters/sec

And, length of train B = 240 meters

From I, we can't determine

From II -

Train B cross pole in 8 sec

And train B cross train A in 12 sec

From II, we can't determine

From I & II -

$$\text{Speed of train B} = \frac{240}{8} = 30 \text{ meters/sec}$$

$$\text{Speed of train A} = 30 - 10 = 20 \text{ meters/sec}$$

Let length of train A = L meters

$$\text{So, } (30 + 20) = \frac{240+L}{12}$$

$$L = 600 - 240$$

$$L = 360 \text{ meters}$$

So, Statement I and II both together sufficient to give answer of the questions

S186. Ans(d)

Sol.

Quantity I:

$$\text{length of train} = \frac{24 \times 75}{18} \times 5 = 500 \text{ meter.}$$

Quantity II:

Let speed of train be 'V km/hr' and length of train be 'x meter'.

ATQ,

$$\frac{x}{12} = V \dots(i)$$

Now,

$$\frac{x+1800}{55.2} = V \dots(ii)$$

On solving (i) & (ii), we get:

$$x = 500 \text{ meter}$$

So, **Quantity II = quantity I**

S187. Ans(b)

Sol.

Quantity I: Let C. P = Rs. 100 x

$$\text{Then M. P} = 100 x \times \frac{150}{100}$$

$$= \text{Rs. } 150x$$

$$\text{S.P} = 100x \times \frac{120}{100} = \text{Rs. } 120x$$

ATQ,

$$120 x = \text{Rs. } 1020$$

$$x = \text{Rs. } 8.5$$

$$\text{So, } 150x = \text{Rs. } 1275$$

Quantity II:

$$\text{Perimeter of field} = 37.5 \times 4$$

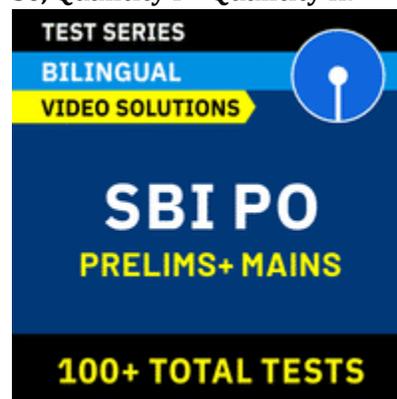
$$= 150 \text{ meter}$$

$$= 15000 \text{ cm.}$$

$$\text{Total cost of fencing} = 15000 \times 0.17$$

$$= \text{Rs. } 2550$$

So, **Quantity I < Quantity II.**



S188. Ans(e)

Sol.

Quantity I:

$$\begin{aligned}(x+3)^2 &= (x-3)^2 + x^2 \\ x^2 + 9 + 6x &= x^2 + 9 - 6x + x^2 \\ x^2 - 12x &= 0 \\ x(x-12) &= 0 \\ x &= 0, 12\end{aligned}$$

Quantity II:

$$\begin{aligned}y^2 - 29y + 204 &= 0 \\ y^2 - 12y - 17y + 204 &= 0 \\ y(y-12) - 17(y-12) &= 0 \\ (y-12)(y-17) &= 0 \\ y &= 12, 17\end{aligned}$$

So, **Quantity II** \geq **Quantity I**

S189. Ans(a)

Sol.

Quantity I:

$$\begin{aligned}\text{Amount} &= 2450 + 2450 \times \frac{1}{7} \times 2 \\ &= 2450 + 700 \\ &= \text{Rs. } 3150\end{aligned}$$

Quantity II:

$$\begin{aligned}\text{Amount} &= 2450 \left(1 + \frac{1}{8}\right)^2 \\ &= 2450 \times \frac{81}{64} \\ &= \text{Rs } 3100.78.\end{aligned}$$

So, **Quantity I** $>$ **Quantity II**

S190. Ans(d)

Sol.

Quantity I:

Let total M. R. P of 5 article = Rs. 100x
1 article is free, then S. P for 5 articles = $100x - 20x = \text{Rs. } 80x$
Again, he gives 20% discount, S.P become of each article =
 $80x \times \frac{80}{100} \times \frac{1}{5}$

$$= \text{Rs. } 12.8x$$

$$\text{Actual Discount percentage} = \frac{20x - 12.8x}{20x} \times 100$$

$$\begin{aligned}&= \frac{7.2}{20} \times 100 \\ &= 36\%\end{aligned}$$

Quantity II:

Let C.P = Rs.x
Let Initial S.P= Rs. 7y
Final S.P = Rs. 8y
ATQ
 $\frac{36}{19} \left(\frac{7y-x}{x}\right) \times 100 = \frac{8y-x}{x} \times 100$

$$252y - 36x = 152y - 19x$$

$$\frac{x}{y} = \frac{100}{17}$$

Let C.P= Rs. 100a

Final S.P= Rs. 136a

$$\text{Final profit \%} = \frac{136a - 100a}{100a} \times 100 = 36\%$$

So, **Quantity I** = **Quantity II**

S191. Ans. (e)

Sol.

$$\begin{aligned}\text{(i)} \quad x^2 - 25x + 156 &= 0 \\ x^2 - 13x - 12x + 156 &= 0 \\ x &= 13, 12 \\ \text{(ii)} \quad y^2 - 21y + 108 &= 0 \\ y^2 - 12y - 9y + 108 &= 0 \\ y &= 12, 9 \\ x &\geq y\end{aligned}$$

S192. Ans. (d)

Sol.

$$\begin{aligned}\text{(i)} \quad 3x + 5y &= 18 \\ \text{(ii)} \quad 7x + 8y &= 42 \\ \text{Multiple (i) } \times 7 \text{ and (ii) } \times 3 \\ 21x + 35y &= 126 \\ 21x + 24y &= 126 \\ \text{On solving above equations} \\ y &= 0 \\ x &= 6 \\ x &> y\end{aligned}$$

S193. Ans. (c)

Sol.

$$\begin{aligned}\text{(i)} \quad 2x^2 + 15x + 27 &= 0 \\ 2x^2 + 9x + 6x + 27 &= 0 \\ x &= -\frac{9}{2}, -3 \\ \text{(ii)} \quad 3y^2 + 25y - 18 &= 0 \\ 3y^2 + 27y - 2y - 18 &= 0 \\ y &= -9, \frac{2}{3} \\ \therefore \text{No relation can be established between } x \text{ and } y\end{aligned}$$

S194. Ans. (a)

Sol.

$$\begin{aligned}\text{(i)} \quad 6x^2 + 29x + 35 &= 0 \\ 6x^2 + 15x + 14x + 35 &= 0 \\ x &= -\frac{5}{2}, -\frac{7}{3} \\ \text{(ii)} \quad 20y^2 + 27y + 9 &= 0 \\ 20y^2 + 15y + 12y + 9 &= 0 \\ y &= -\frac{3}{5}, -\frac{3}{4} \\ \therefore y &> x\end{aligned}$$

S195. Ans. (d)

Sol.

$$(i) x^2 - 7x - 30 = 0$$

$$x^2 - 10x + 3x - 30 = 0$$

$$x = 10, -3$$

$$(ii) y^2 + 15y + 50 = 0$$

$$y^2 + 10y + 5y + 50 = 0$$

$$y = -10, -5$$

$$x > y$$

S196. Ans.(a)

Sol.

$$I. x^2 - 4x - x + 4 = 0$$

$$(x - 1)(x - 4) = 0$$

$$x = 1, 4$$

$$II. y^2 + 2y + y + 2 = 0$$

$$y(y + 2) + 1(y + 2) = 0$$

$$(y + 1)(y + 2) = 0$$

$$\Rightarrow y = -1, -2$$

$$\Rightarrow x > y$$

S197. Ans.(b)

Sol.

$$I. 6x^2 - 2x - 3x + 1 = 0$$

$$2x(3x - 1) - 1(3x - 1) = 0$$

$$(2x - 1)(3x - 1) = 0$$

$$x = \frac{1}{2}, \frac{1}{3}$$

$$II. 15y^2 - 3y - 5y + 1 = 0$$

$$3y(5y - 1) - 1(5y - 1) = 0$$

$$(3y - 1)(5y - 1) = 0$$

$$y = \frac{1}{3}, \frac{1}{5}$$

$$\Rightarrow x \geq y$$

S198. Ans.(e)

Sol.

$$I. x^2 + 4x + x + 4 = 0$$

$$x(x + 4) + 1(x + 4) = 0$$

$$(x + 1)(x + 4) = 0$$

$$x = -1, -4$$

$$II. y^2 - 7y + 2y - 14 = 0$$

$$(y - 7)(y + 2) = 0$$

$$y = -2, 7$$

$$\Rightarrow \text{No relation}$$

S199. Ans.(c)

Sol.

$$I. x^2 + 4x + 5x + 20 = 0$$

$$(x + 4)(x + 5) = 0$$

$$x = -4, -5$$

$$II. y^2 + 3y + y + 3 = 0$$

$$(y + 1)(y + 3) = 0$$

$$y = -1, -3$$

$$\Rightarrow x < y$$

S200. Ans.(b)

Sol.

$$I. x^2 - 4x - 2x + 8 = 0$$

$$(x - 4)(x - 2) = 0$$

$$x = 2, 4$$

$$II. y^2 + 4y - 2y - 8 = 0$$

$$(y + 4)(y - 2) = 0$$

$$y = -4, 2$$

$$\Rightarrow x \geq y$$