Quantitative Aptitude for RRB NTPC

Q1. If the area of the base of a regular hexagonal pyramid is $96\sqrt{3}$ m^2 and the area of one of its side faces is $32\sqrt{3}$ m^3, then the volume of the pyramid is:

(a) $380\sqrt{3}$ m^3
(b) $382\sqrt{2}$ m^3
(c) $384\sqrt{3}$ m^3
(d) $386\sqrt{3}$ m^3

Q2. What part of a ditch, 48 metres long 16.5 metres broad and 4 metres deep can be filled by the sand got by digging a cylindrical tunnel of diameter 4 metres and length 56 metres? (use $\pi = 22/7$)

(a) 1/9
(b) 2/9
(c) 7/9
(d) 8/9

Q3. A cylindrical rod of iron whose height is eight times its radius is melted and cast into spherical balls each of half the radius of the cylinder. The number of such spherical balls is

(a) 12
(b) 16
(c) 24
(d) 48

Q4. Water flows at the rate of 10 meters per minute from a cylindrical pipe 5 mm in diameter. How long it take to fill up a conical vessel whose diameter at the base is 30 cm and depth 24 cm?

(a) 28 minutes 48 seconds
(b) 51 minutes 12 seconds
(c) 51 minutes 24 seconds
(d) 28 minutes 36 seconds

Q5. A semi-circular sheet of metal of diameter 28 cm is bent into an open conical cup. The depth of the cup is approximately:

(a) 11 cm
(b) 12 cm
(c) 13 cm
(d) 14 cm

Q6. The height of a right prism with a square base 15 cm. If the total S.A. of prism of 608 cm^2. The find its volume.

(a) 480

(b) 460

(c) 1500

(d) 960

Q7. A slab of ice 8 inches in length 11 inches in breadth, and 2 inches thick was melted and resolidified in the form of a rod of 8 inches diameter. The length of such a rod, in inches, is nearest to.

(a) 3

(b) 3.5

(c) 4

(d) 4.5

Q8. A storage tank consists of a circular cylinder with a hemisphere adjoined on either side. If the external diameter of the cylinder be 14 m and its length be 50 m, then what will be the cost of painting it at the rate of Rs. 10 per sq m?

(a) Rs. 38160

(b) Rs. 28160

(c) Rs. 39160

(d) None of the above

Q9. The diameter of the iron ball used for the shotput game is 14 cm. It is melted and then a solid cylinder of height $2\frac{1}{3}$ cm is made. What will be the diameter of the base of the cylinder?

(a)14 cm

(b) 28 cm

(c) 14/3 cm

(d) 28/3 cm

Q10. If the area of the circular shell having inner and outer radii of 8 cm and 12 cm respectively is equal to the total surface area of cylinder of radius R_1 and height h, then h, in terms or R_1 will be.

(a) $\frac{3R_1^2 - 30}{7R_1}$

(b) $\frac{R_1^2 - 40}{R_1^2}$

(c) $\frac{30 - R_1}{R_1^2}$

(d) $\frac{40 - R_1^2}{R_1}$

Q11. A cycle dealer offers a discount of 10% and still makes a profit of 26%. What does he pay for a cycle whose marked price is Rs. 840?
(a) Rs. 600
(b) Rs. 650
(c) Rs. 700
(d) Rs. 750

Q12. If the cost price of an item is two fifth of its marked price and if it is sold at a discount of 10%, then there will be
(a) 25% profit
(b) 40% profit
(c) 50% profit
(d) 125% profit

Q13. Prakash lends a part of Rs. 20,000 at 8% simple interest and remaining at 4/3% simple interest. His total income after a year was Rs. 800. Find the sum lent a 8%.
(a) Rs. 8,000
(b) Rs. 12,000
(c) Rs. 6,000
(d) Rs. 10,000

Q14. 20 litres of a mixture contains 20% alcohol and the rest water. If 4 litres of water be mixed in it, the percentage of alcohol in the new mixture will be
(a) 33(1/3)%
(b) 16(2/3)%
(c) 25%
(d) 12(1/2)%

Q15. A man divides his property so that his son's share to his wife's and wife's share to his daughter's are both as in the ratio 3 : 1. If the daughter gets Rs. 10,000 less than son, the value (in rupees) of the whole property is
(a) Rs. 16,250
(b) Rs. 16,000
(c) Rs. 18,250
(d) Rs. 17,000

Q16. There are two containers of equal capacity. The ratio of milk to water in the first container is 3 : 1, in the second container 5 : 2. If they are mixed up, the ratio of milk to water in the mixture will be
(a) 28 : 41
(b) 41 : 28
(c) 15 : 41
(d) 41 : 15

Q17. The sum of two numbers is equal to 25 and their difference is 20. The ratio of the two numbers is

(a) 9 : 1

(b) 7 : 9

(c) 3 : 5

(d) 2 : 7

Q18. A man travelled a distance of 80 km in 7 hrs partly on foot at the rate of 8 km per hour and partly on bicycle at 16 km per hour. The distance travelled on the foot is

(a) 32 km

(b) 48 km

(c) 36 km

(d) 44 km

Q19. The average monthly expenditure of a family for the first four months is Rs. 2570, for the next three months Rs. 2490 and for the last five months Rs. 3030. If the family saves Rs. 5320 during the whole year, the average monthly income of the family during the year is

(a) Rs. 3000

(b) Rs. 3185

(c) Rs. 3200

(d) Rs. 3580

Q20. After replacing an old member by a new member, it was found that the average age of five members of a club is the same as it was 3 years ago. The difference between the ages of the replaced and the new members is

(a) 2 years

(b) 4 years

(c) 8 years

(d) 15 years

Q21. If $2x + \frac{1}{3x} = 5$, the value of $\frac{5x}{6x^2 + 20x + 1}$ is

(a) 1/4

(b) 1/6

(c) 1/5

(d) 1/7

Q22. If a + b = 10 and ab = 21, then the value of $(a - b)^2$ is

(a) 15

(b) 16

(c) 17

(d) 18

Q23. If $(x - 4)(x^2 + 4x + 16) = x^3 - P$, then P is equal to

(a) 27

(b) 8

(c) 64

(d) 0

Q24. If $4x + \frac{1}{x} = 5$, $x \neq 0$, then the value of $\frac{5x}{4x^2 + 10x + 1}$ is

(a) 1/2

(b) 1/3

(c) 2/3

(d) 3

Q25.

If $C + \frac{1}{c} = \sqrt{3}$, then the value of $C^3 + \frac{1}{c^3}$ is equal to

(a) 0

(b) $3/\sqrt{3}$

(c) $1/\sqrt{3}$

(d) $6/\sqrt{3}$

Q26. If $x = 222$, $y = 223$, $z = 225$ then the value of $x^3 + y^3 + z^3 - 3xyz$ is

(a) 4590

(b) 4690

(c) 4950

(d) 4960

Q27. If $a + b + c = 0$, then the value of $a^3 + b^3 + c^3$ is

(a) abc

(b) 2abc

(c) 3abc

(d) 0

Q28.

The value of $\left(x^{\frac{1}{3}} + x^{\frac{-1}{3}}\right)\left(x^{\frac{2}{3}} - 1 + x^{\frac{-2}{3}}\right)$ is

(a) $x^{-1} + x^{\frac{2}{3}}$

(b) $x + x^{-\frac{1}{3}}$

(c) $x^{\frac{1}{3}} + x^{-1}$

(d) $x + x^{-1}$

Q29.

If, $\frac{1}{p}+\frac{1}{q}=\frac{1}{p+q}$, then the value of $p^3 - q^3$ is

(a) p – q
(b) p q
(c) 1
(d) 0

Q30. If x = 93, y = 93, z = 94 then the value of $x^2 - y^2 + 10xz + 10yz$ is

(a) 104784
(b) 147840
(c) 174840
(d) 184740