Test

Quantitative Ability

Time: 30 Minutes

Direction for questions 1 to 30: Select the correct alternative from the given choices.

1. P, Q, R, and S have a total amount of ₹220 with them. P has ₹30 more than Q. S has half the amount with Q. R has ₹10 more than S. Find the amount with S (in ₹).
(A) 20 (B) 40
(C) 30 (D) 50

2. In a room, there are some girls and some benches. If 5 girls sit on each bench, three girls will have no bench to sit on. If there is one bench less, 6 girls can sit on each bench. Find the number of benches.
(A) 6 (B) 8
(C) 7 (D) 9

3. A test has 60 questions. Each correct answer fetches 1 mark. For each wrong answer and each unanswered question 1 mark is deducted. A candidate who wrote this test scored 20 marks. Find the number of questions he correctly answered.
(A) 50 (B) 45
(C) 35 (D) 40

4. If $\frac{a+b-c}{x} = \frac{a-b+c}{y} = \frac{c+b-a}{z}$ then $x(b-a) + y(a-c) + z(c-b) =$
(A) 0 (B) 2
(C) 3 (D) 1

5. The value of a diamond varies directly with the cube of its weight. It broke into two pieces whose weights are in the ratio 3 : 4. The loss due to breakage is ₹504000. Find its initial value (in ₹).
(A) 1029000 (B) 686000
(C) 1372000 (D) 1715000

6. The average of 25 observations is 120. By mistake one of the observations, 144, is taken as 169. Find the average of the 25 observations, after the mistake is corrected.
(A) 120 (B) 119
(C) 125 (D) 132

7. The average of 13 observations is 50. The average of first seven observations is 45 and the average of last seven observations is 52. Find the value of seventh observation.
A) 41 (B) 30
(C) 29 (D) 62

8. A container contains 100 litres of milk. 10 litres of milk is replaced by 10 litres of water. From the solution formed, 10 litres of solution is replaced by 10 litres of water, and this process is repeated one more time. Find the percentage of water in the resulting solution.
(A) 33.3% (B) 67%
(C) 36.5% (D) 27.1%

9. In a 729 ml of solution, the ratio of acid to water is 7 : 2. How much more water should be mixed so that the resulting mixture contains acid and water in the ratio 7 : 3 (in ml)?
(A) 100 (B) 40
(C) 37 (D) 81

10. A merchant buys sulphuric acid at a certain rate per gallon and after mixing it with water, sells it at the same rate. If the merchant makes a profit of 20%, how many gallons of water are there per gallon of acid?
(A) 0.2 (B) 0.5
(C) 0.7 (D) 0.25

11. If A travelled a certain distance at 6 km/h, he would have reached his destination 10 minutes early. If he travelled it at 4 km/h, he would have reached his destination 10 minutes late. Find the speed at which he must travel to reach his destination on time (in km/h).
(A) 5 (B) 5.4
(C) 4.8 (D) 4.5

12. A car travelled the first hour of its journey at 30 km/h, the next 5 hours of its journey at 50 km/h, and the remaining 4 hours of its journey at 75 km/h. Find its average speed for its journey (in km/h).
(A) 56 (B) 60
(C) 58 (D) 62

13. Without stoppages, a train can cover 54 km in an hour. With stoppages it can cover 36 km in an hour. Find its stoppage time per hour in a journey it covers with stoppages (in minutes).
(A) 15 (B) 18
(C) 20 (D) 12

14. A and B can complete a job in 40 days. B and C can complete it in 30 days. A and C can complete it in 20 days. Find the time taken by A to complete it (in days).
(A) $\frac{180}{7}$ (B) 30
(C) 48 (D) $\frac{240}{7}$

15. 3 men and 4 women can complete a job in 10 days. 24 men and 2 women can complete it in 2 days. Find the time taken by 5 men and 10 women to complete it (in days).
(A) 4 (B) 5
(C) 3 (D) 6

16. Abhilash spends 25% of his income towards rent, 20% of the remaining income towards food, 8% of the remaining towards medical expenses, and 25% of the remaining towards miscellaneous expenses. If he saves ₹82,800, what is his income?
(A) ₹2,00,000 (B) ₹2,25,000
(C) ₹2,40,000 (D) ₹2,50,000

17. By selling 30 articles, a shopkeeper gained the selling price of 10 articles. Find the profit percent.
(A) 20% (B) 30%
(C) 50% (D) 40%

18. When 1036 is divided by N, the remainder is 12 and when 1545 is divided by N, the remainder is 9. Find the greatest possible value of N.
(A) 128 (B) 512
(C) 250 (D) 64

19. Five bells toll at regular intervals of 10, 15, 20, 25, and 30 seconds, respectively. If they toll together at 8:00 am, then at what time will they toll together for the first time after 8:00 am?
(A) 8:04 am (B) 8:06 am
(C) 8:05 am (D) 8:07 am

20. Find the value of
$$\frac{3}{\sqrt{2}+\sqrt{11}}+\frac{3}{\sqrt{5}+\sqrt{8}}+\frac{3}{\sqrt{8}+\sqrt{11}}+\cdots+\frac{3}{\sqrt{26}+\sqrt{29}}.$$
(A) $\sqrt{29}-\sqrt{2}$ (B) $\sqrt{26}+\sqrt{5}$
(C) $\sqrt{29}+\sqrt{26}$ (D) $\sqrt{26}-\sqrt{8}$

21. If $a+b+c=0$, find the value of $(3^{a^8})^{\frac{1}{a^6bc}}(3^{b^8})^{\frac{1}{ab^6c}}(3c^8)^{\frac{1}{abc^6}}$
(A) 2 (B) 6
(C) 27 (D) 81

22. If $3^{x+3}-3^{x+2}=486$, then find x.
(A) 3 (B) 5
(C) 6 (D) 2

23. $\log_p q=\frac{5}{4}, \log_r q=\frac{5}{6}$ and $\log_r p=3x$, then find x.
(A) $\frac{1}{9}$ (B) $\frac{2}{3}$
(C) $\frac{1}{18}$ (D) $\frac{2}{9}$

24. $\frac{5}{1+\log_p qr}+\frac{5}{1+\log_q pr}+\frac{5}{1+\log_r pq}=$
(A) 0 (B) 1
(C) 5 (D) 10

25. If $\log_{10}2=0.3010$ then find the number of digits in 2^{55}.
(A) 17 (B) 11
(C) 18 (D) 16

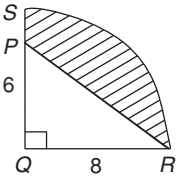
26. The maximum sum of the arithmetic progression 45, 41, 37, ... is
(A) 256 (B) 274
(C) 276 (D) 264

27. The greatest value of n such that $1+3+3^2+3^3+\cdots+3^n$, which is less than 3000 will be:
(A) 6 (B) 8
(C) 7 (D) 9

28. $3+33+333+\cdots+$ upto n terms =
(A) $\frac{(10^n-1)}{3}-n$ (B) $\frac{10(10^n-1)}{27}-n$
(C) $\frac{(10^n-1)}{3}-\frac{n}{9}$ (D) $\frac{10(10^n-1)}{27}-\frac{n}{3}$

29. What is the minimum value of the function $f(x)=x^2-15x+9$?
(A) $\frac{289}{4}$ (B) $\frac{-200}{9}$
(C) $\frac{295}{2}$ (D) $\frac{-189}{4}$

30. Find the area of the shaded region, where PQR is a triangle and QRS is a quadrant. $PQ=6$ cm and $QR=8$ cm.



(A) $4\pi-8$ sq. cm. (B) $2\pi-3$ sq. cm.
(C) $8\pi-16$ sq. cm. (D) $16\pi-24$ sq. cm.

Answer Keys

1. C	**2.** D	**3.** D	**4.** A	**5.** B	**6.** B	**7.** C	**8.** D	**9.** D	**10.** A
11. C	**12.** C	**13.** C	**14.** C	**15.** B	**16.** A	**17.** C	**18.** B	**19.** C	**20.** A
21. C	**22.** A	**23.** D	**24.** C	**25.** A	**26.** C	**27.** C	**28.** D	**29.** D	**30.** D