PAPER – 3:
QUANTITATIVE APTITUDE

QUESTIONS

1. If ½, 1/3 ,1/5 and 1/x are in proportion, then the value of x will be -

   (a) 15/2

   (b) 6/5

   (c) 10/3

   (d) 5/6

2. If $p = x^{1/3} + x^{-1/3}$, then find value of $3p^3 - 9p$

   (a) 3

   (b) ½(x+1/x)

   (c) (x+1/x))

   (d) 2((x+1/x))

3. If α and β are the roots of the equation $x^2 + 7x + 12 = 0$, then the equation whose roots $(\alpha + \beta)^2$ and $(\alpha - \beta)^2$ will be:

   (a) $x^2 - 14x + 49 = 0$

   (b) $x^2 - 24x + 144 = 0$

   (c) $x^2 - 50x + 49 = 0$

   (d) $x^2 - 19x + 144 = 0$

4. The rules and regulations demand that the employer should employ not more than 5 experienced hands to 1 fresh one and this fact is represented by (Taking experienced person as x and fresh person as y) -

(a) $y \geq \frac{x}{5}$

(b) $5y \leq x$

(c) $5x > y$

(d) none of these

5. The number of ways of arranging 6 boys and 4 girls in a row so that all 4 girls are together is

(a) 6!. 4!

(b) 2 (7! 4!)

(c) 7! 4!

(d) 2. (6! 4!)

6.. What will be the population after 3 years. When the population increases at the rate 3 % in I year, 4 % in II year and 5% in III year. If the beginning of the population was 25,000?

(a) 28,119

(b) 29,118

(c) 27,000

(c) 30,000

7. If ₹ 10,000 is invested at 8 % per annum, then compounded quarterly. Then value of investment after 2 years is

(a) ₹ 11,716.59

(b) ₹ 10,716.59

(c) ₹ 12,715.59

(d) none of these

8. In how many years will a sum of money become double at 5% p.a. compound interest:

(a) 14 years

(b) 15 years

(c) 16 years

(d) 14.3 years

9.. The future value of an annuity of ₹ 1,000 is made annually for 5 years at interest rate of 14% compounded annually [Given that $(1.14)^5 = 1.92541$] is _____

(a) ₹ 5610

(b) ₹ 6610

(c) ₹ 6160

(d) ₹ 5160

10. If f(x) = x+2, g(x) = 7^x, then gof(x) = ____

(a) $7^x.x+2.7^x$

(b) 7^{x-2}

(c) $49(7^x)$

(d) none of these

11. Given x = 2t + 5; y = t^2-2, then $\frac{dy}{dx}$ is calculated as -

(a) t

(b) 1/t

(c) -1/t

(d) none of these

12. If Z = 52 and ACT = 48, then BAT will be equal to -

(a) 39

(b) 41

(c) 44

(d) 46

13. If ROSE is coded as 6821, CHAIR is coded as 73456 and PREACH is coded as 961473, what will be the code for SEARCH?

(a) 246173

(b) 214673

(c) 214763

(d) 216473

14. Find the missing term in each of the following series: 28, 33,31,36, 34?

(a) 48

(b) 39

(c) 54

(d) 62

15.. Raju leaves his house and walks 12 km towards North. He turns right and walks another 12 km. He turns right, walks 12 km more and turns left to walk 5 km. How far is he from his home and in which direction?

(a) 7 km east

(b) 10 km east

(c) 17 km east

(d) 24 km east

16. For a symmetric distribution:

(a) Mean = Median = Mode

(b) Mode = 3 Median – 2 Mean

(c) Mode = 1/3 Median = 1/2 Mean

(d) None

17. Sanjay has three daughters, and each daughter has a brother. How many male members are there in the family?

(a) 4

(b) 2

(c) 3

(d) 1

18. Median of a distribution can be obtained from -

(a) Frequency polygon

(b) Histogram

(c) ogives

(d) None of these.

19. Cost of sugar in a month under the heads raw Materials, labour, direct production and others were 12, 20, 35 and 23 units respectively. What is the difference between the central angles for the largest and smallest components of the cost of sugar?

(a) 72°

(b) 48°

(c) 56°

(d) 92°

20. For open-end classification, which of the following is the best measure of central tendency?

(a) AM

(b) GM

(c) Median

(d) Mode

21. The quartiles of a variable are 45, 52 and 65 respectively. Its quartile deviation is -

(a) 10

(b) 20

(c) 25

(d) 8.30

22. If x and y are related by y = 2x+ 5 and the SD and AM of x are known to be 5 and 10 respectively, then the coefficient of variation of y is -

(a) 25

(b) 30

(c) 40

(d) 20

23. Given that for two events A and B, P (A) = 3/5, P (B) = 2/3 and P (A) = 3/4, what is P (A/B)?

(a) 0.655

(b) 13/60

(c) 31/60

(d) 0.775

24. The SD of a binomial distribution with parameter n and p is -

(a) n (1– p).

(b) np (1 – p).

(c) np.

(d) $\sqrt{np(1-p)}$.

25. X and Y stand in a line with 6 other people. What is the probability that there are 3 persons between them?

(a) 1/5

(b) 1/6

(c) 1/7

(d) 1/3

26. The deviations are minimum when taken from -

(a) Mean

(b) Median

(c) Mode

(d) GM

27. Histogram is useful to determine graphically the value of -

(a) Arithmetic Mean

(b) Median

(c) Mode

(d) HM

28. If x and y are related as 3x-4y= 20 then the Quartile Deviation of x is 12, then the Quartile Deviation of y is -

(a) 14

(b) 15

(c) 16

(d) 9

29. If the coefficient of correlation between two variables is –0 .9, then the coefficient of determination is -

(a) 0.9

(b) 0.81

(c) 0.1

(d) 0.19

30. For a Poisson Variate x, P(x=2) =3 P(x=4), then the standard deviation of x is

(a) 2

(b) 4

(c) √2

(d) 3

SUGGESTED ANSWERS/HINTS

1.	**(a)**	2.	**(c)**	3.	**(c)**	4.	**(a)**	5.	**(c)**
6.	**(a)**	7.	**(a)**	8.	**(d)**	9.	**(b)**	10.	**(c)**
11.	**(a)**	12.	**(d)**	13.	**(b)**	14.	**(b)**	15.	**(c)**
16.	**(a)**	17.	**(b)**	18.	**(c)**	19.	**(d)**	20.	**(c)**
21.	**(a)**	22.	**(c)**	23.	**(d)**	24.	**(d)**	25.	**(c)**
26.	**(b)**	27.	**(c)**	28.	**(d)**	29.	**(b)**	30.	**(c)**