

MAY 2012

P/ID 77719/MBN2D

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Time : Three hours

Maximum : 100 marks

SECTION A — (10 × 3 = 30 marks)

Answer any TEN questions.

All questions carry equal marks.

1. Distinguish between classification and tabulation.
2. What is simple bar diagram?
3. Define mode.
4. What is Lorenz curve?
5. Distinguish between positive and negative correlation.
6. What is meant by regression?
7. Define sampling unit.
8. What is conditional probability?
9. Define median.
10. Write short notes on time series.
11. What do you mean by dispersion?
12. Write short notes on derivative.

SECTION B — (5 × 6 = 30 marks)

Answer any FIVE questions.

All questions carry equal marks.

13. What are the different parts of a table? Prepare a blank table to show the distribution of population according to age, sex and marital status.
14. What do you understand by central tendency? What are the merits and demerits of arithmetic mean?
15. Draw a correlation graph from the following data :
- | Period     | Jan | Feb | Mar | April | May | June |
|------------|-----|-----|-----|-------|-----|------|
| Variable 1 | 15  | 18  | 22  | 20    | 25  | 20   |
| Variable 2 | 30  | 35  | 43  | 41    | 51  | 40   |
16.  $A = \begin{bmatrix} 2 & 3 & 5 \\ 6 & 7 & 8 \end{bmatrix}$      $B = \begin{bmatrix} 7 & 6 & 3 \\ 1 & 4 & 5 \end{bmatrix}$     find (a)  $A + B$   
(b)  $B - A$ .
17. Two cards are drawn from a pack of cards at random. What is the probability that it will be (a) a diamond and a heart (b) a king and a queen (c) two kings?
18. Explain the importance of significance of sample.

19. A wholesaler selling apples claims that only 4% of the apples supplied by him are defective. A random sample of 600 apples contained 36 defective apples. Test the claim of the wholesaler.
20. Evaluate  $\lim_{x \rightarrow 0} \frac{a^x - 1}{b^x - 1}$ .

SECTION C — (2 × 20 = 40 marks)

Answer any TWO questions.

All questions carry equal marks.

21. Out of 8000 graduates in a town 800 are females; out of 1600 graduate employees 120 are females. Use  $\chi^2$  to determine if any distinction is made in appointment on the basis of sex. Value of  $\chi^2$  for 5% level for one degree of freedom is 3.84.
22. From the following data determine the line of trend and find the expected value for 2004.

Year :	1994	1995	1996	1997	1998
Production (in tons) :	110.2	143.3	143.3	134.5	138.55
Year :	1999	2000	2001	2002	
Production (in tons) :	74	129	150	140	

23. Explain different types of sampling techniques.
  24. Explain what do you understand by the term probability. Discuss its importance in business decision making.
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