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BBA/M-18
BUSINESS STATISTICS
Paper: BBA-210

Time: Three Hours

Maximum Marks: 80

Note: Attempt five questions including No. 1 which is compulsory. All questions carry equal marks.

Compulsory Question

1. Explain the following in short :
 - (a) Importance of scatter diagram in correlation
 - (b) Secular trend
 - (c) Independent and Dependent Events
 - (d) Conditional probability
 - (e) Properties of Binominal Distribution
 - (f) Hypothesis.
2. The following results were obtained on prices of Ten stocks (x) at the Delhi Stock Exchange on a certain day along with the volume of sales in thousands of shares (y). Find the regression equation of price of stocks on the volume of sales of shares, given the following :

$$\{x = 580, \{y = 370, \{xy = 11494, \{x^2 = 41658 \text{ and } \{y^2 = 17206.$$

Also estimate x when y = 40 and the coefficient of determination.

3. Fit a straight line trend to the following data by method of least squares :

Years	Sales (Rs. in Lakhs)
1991	5
1992	8
1994	12
1996	20
1997	25

Also estimate the trend value of 1999 and find out monthly increase in sales volume.

4. What is meant by probability? Explain various approaches and importance of probability.

5. (a) A student trying to seek admission in either of the two colleges. The probability that he is admitted in first college is $\frac{3}{5}$ and that in second college is $\frac{1}{3}$. Find the probability that he is admitted at least one of the colleges.
- (b) The probability that a Boy will solve problem is $\frac{3}{4}$ and the probability that a Girl will solve it is $\frac{4}{5}$. Find the probability that :
- (i) None will solve the problem
 - (ii) Both will solve the problem
 - (iii) Only Girl will solve the problem.
6. What is normal distribution? Explain the various properties of normal distribution.
7. The average daily sale of 500 branch offices of a limited concern was Rs. 150 thousand and the standard deviation was Rs. 15 thousand. Assuming the distribution to be normal tell how many branch offices have sales between :
- (i) Rs. 120 thousand and Rs. 145 thousand
 - (ii) Rs. 140 thousand and Rs. 165 thousand.
8. (a) A stenographer claims that she can take dictation at the rate of 120 words per minute. Can we reject her claim on the basis of 100 trials in which she demonstrates a mean of 116 words with a standard deviation of 15 words. (Use 5% level).
- (b) In 324 throws of six-faced dice, even points appeared 160 times. Would you say that the die is fair? Use $\alpha = 0.05$.