

10904

First Semester M.B.A. Degree Examination, August/September 2021

(CBCS Scheme – 2014-15 onwards)

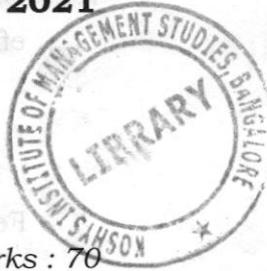
Management

Paper 1.4 – STATISTICS FOR MANAGEMENT

Time : 3 Hours]

[Max. Marks : 70

Instructions to Candidates : Statistical Tables and Calculators are allowed.



SECTION – A

Answer any **FIVE** questions. Each question carries **5** marks : **(5 × 5 = 25)**

1. Explain the role of Statistics in managerial decision making. Illustrate with examples.
2. A batsmen's scores for six games were 182, 178, 184, 190, 170 and 172. Using these data as a sample compute the following descriptive statistics :
 - (a) Standard Deviation
 - (b) Variance
 - (c) Coefficient of Variation
3. What is meant by asymmetric distribution? Explain the types with suitable illustrations.
4. Five students A, B, C, D and E are given a problem to solve the probabilities are $\frac{1}{3}$, $\frac{1}{5}$, $\frac{1}{6}$, $\frac{1}{9}$ and $\frac{1}{8}$ of solving the problem. What is the probability that the problem will be solved?
5. From the following data, find the linear trend and forecast the production for the next two years of a certain company :

Year :	2014	2015	2016	2017	2018	2019
Production ('000 kgs) :	64	70	82	69	75	90
6. A company manufactures metal boxes. The monthly production is 4750 boxes. If the average diameter of the boxes is 6 cm and the standard deviation 2.5 cm, find :
 - (a) How many boxes have a diameter between 9 cm and 12 cm?
 - (b) How many boxes have a diameter between 5 cm and 2 cm?

7. Using the Chi Square Test, determine whether the medicine given to cattle was effective or not.

Details	Took medicine	Did not take medicine	Total
Fell ill	150	250	400
Did not fall ill	375	475	850
Total	525	725	1250

SECTION - B

Answer any **THREE** questions. Each question carries **10** marks : **(3 × 10 = 30)**

8. Construct Laspeyre's, Paache's and Ideal index for the following data and prove that Ideal index satisfies the time reversal and factor reversal tests for the data below :

Commodity	Price		Quantity	
	2018	2019	2018	2019
P	13	15	9	18
Q	16	17	12	19
R	14	15	16	10
S	12	13	20	15

9. What is meant by Sampling? Discuss the various methods of Sampling.

10. From the data given below, you are required to

- Calculate the correlation coefficient.
- Find the standard error and discuss the significance of correlation.
- Find the two regression equations.

Sales :	42	44	50	54	60	70	85
Purchases :	26	30	35	37	45	50	65

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11. A study was carried out on the advertising methods of a brand of product. The unit sales achieved by five stores was recorded as under :

	Store A	Store B	Store C	Store D	Store E
Method 1	78	85	82	88	79
Method 2	81	92	77	80	75
Method 3	78	83	70	76	82

At 1% level of significance establish there is a significant difference between the Sales in the different stores using F-ratio.

SECTION - C

Compulsory question :

(1 × 15 = 15)

12. Case Study :

Prakash has two investment options, but he can take up only one option at a time.

Option one : He can start a restaurant for an investment of Rs.10,00,000. The outcome will be success (probability of 90%) with a cash inflow of Rs.12,00,000. If he fails he incurs a loss of Rs.2,00,000. If he succeeds he can decide to open a fast food joint for Rs.6,00,000. The outcome would be success (probability 75%) with a cash inflow of Rs.8,50,000. Failure means he can still salvage Rs.3,25,000.

Option two : He can start a readymade dress showroom for Rs.8,00,000. The success will be 80% with a cash inflow of Rs.10,00,000. Failure means he can still salvage of Rs.5,00,000.

Draw a decision tree and a pay off table. Advise Prakash on the most profitable option to undertake.