



PG – 915

I Semester M.B.A. Degree Examination, February 2017  
(CBCS)  
Management  
Paper – 1.4 : STATISTICS FOR MANAGEMENT

Time : 3 Hours

Max. Marks : 70

**Instruction :** Statistical tables and calculators are allowed.

SECTION – A

Answer any five questions. Each question carries five marks. (5×5=25)

1. Explain the role of statistics in managerial decision-making. Illustrate with examples.
2. A bowler's scores for six games were 182, 168, 184, 190, 170 and 174. Using these data as a sample, compute the following descriptive statistics.
  - a) Standard Deviation
  - b) Variance
  - c) Coefficient of variation.
3. What is Sampling ? Explain the different methods of sampling.
4. Five students P, Q, R, S and T are given a problem to solve. The probabilities are  $\frac{1}{3}$ ,  $\frac{1}{5}$ ,  $\frac{1}{6}$ ,  $\frac{1}{8}$  and  $\frac{1}{9}$  of solving the problem. What is the probability that the problem will be solved ?
5. The mean circumference of 1500 shafts manufactured in a company is 15 cm and the deviation from the mean is 3 cm. Assuming normal distribution find out how many shafts have a circumference
  - a) greater than 13 cm
  - b) lesser than 19 cm.

P.T.O.



6. From the following data, find the straight line trend and forecast the production figures for the next two years of a certain company. A graph is not necessary.

Year	2007	2008	2009	2010	2011	2012	2013	2014
Production ('000 kgs)	64	70	82	69	75	88	90	94

7. Using the chi square test, determine whether a new drug discovered for preventing poultry disease is successful or not, based on the data given below : You may use a 5% degree of significance.

	Got disease	Did not get disease
Administered the drug	175	810
Did not administer the drug	215	620

### SECTION - B

Answer any three questions. Each question carries ten marks. (3×10=30)

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

Commodity	2015		2016	
	Price	Quantity	Price	Quantity
A	3	9	5	8
B	6	12	7	9
C	4	14	5	10
D	2	18	3	15



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

	Store – A	Store – B	Store – C	Store – D	Store – E
Method I	78	85	82	88	79
Method II	81	92	77	83	81
Method III	79	83	71	78	80

Calculate the F-ratio, using ANOVA and 15% level of significance. Establish there is a significant difference between the sales in the different stores.

10. Explain the following concepts briefly with suitable diagrams :

- a) One tailed and two tailed tests
- b) Type I and Type II errors
- c) Skewness
- d) Kurtosis.

11. Find the coefficient of correlation and the probable error for the following data.

X	12	24	30	45	56	70	83
Y	29	31	44	56	72	88	90

Comment on the significance of the correlation.

SECTION – C

12. Case study (compulsory) :

(1×15=15)

Anil has 2 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. 8,00,000. The outcome will be success (probability of 90%) with a cash inflow of Rs. 10,00,000. 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 70%) with a cash inflow of Rs. 8,00,000. Failure means he can still salvage Rs. 3,00,000.

Option two : He can start a readymade dress showroom for Rs. 8,00,000. The outcome will be success (probability 80%) with a cash inflow of Rs. 11,00,000. Failure means he can still salvage Rs. 5,00,000. Draw a decision tree and a pay off table. Advise Anil on the most profitable option to undertake.