Total No. of Questions : 16

B.Tech. (Ind. Engg. & Mgt. (TQM)   (Sem.–2)
FUNDAMENTALS OF STATISTICS
Subject Code : IEM-203
M.Code : 61008

Time : 3 Hrs.   **Max. Marks : 40**

INSTRUCTIONS TO CANDIDATES :

1. **Attempt any EIGHT out of TEN Questions from SECTION-A carrying THREE marks each.**

2. **Attempt any FOUR out of SIX questions from SECTION-B carrying NINE marks each.**

SECTION-A

Write briefly :

1) Define Geometric and Arithmetic Mean

2) Difference between descriptive and inferential statistics

3) Discuss Type I and Type II error

4) Differentiate between Stratified and Systematic Sampling

5) A bag contains 8 white and 4 red balls. Five balls are drawn at random. What is the probability that 2 of them are red and 3 white?

6) Give two properties of binomial distribution

7) Difference between positive and negative correlation

8) What do you understand by level of significance?

9) What do you mean by standard error of estimate?

10) How histogram is different for pi - chart?

SECTION-B

11) Haveli Restaurant near the railway station at Mumbai has been having average sales of 500 tea cups per day. Because of the development of bus stand nearby, it expects to increase its sales. During the first12 days after the start of the bus stand, the daily sales were as under :

550, 570, 490, 615, 505, 580, 570, 460, 600, 580, 530, 526

On the basis of this sample information, can one conclude that Raju Restaurant's sales have increased? (Test at 5% level of significance and table value of t = 1.796 at 11 d.f.)

12) If the probability of defective bolts is 0.1, find (a) the mean and standard deviation for the distribution of defective bolts in a total of 500, and (b) the moment coefficient of skewness and kurtosis of the distribution.

13) The following data gives the sales of the company for various years. Fit the straight line using least square method.

Year	2009	2010	2011	2012	2013	2014	2015	2016	2017
Sales ('000)	13	20	20	28	30	32	33	38	43

14) Explain the multiplication theorem of probability.

15) Define the following terms :

a) Attribute data   b) Variable data   c) Coefficient of correlation

d) Range   e) Standard deviation   f) Variance

16) Write a short note on the following :

a) Central limit theorem   b) Skewness and its measures

NOTE : Disclosure of Identity by writing Mobile No. or Marking of passing request on any paper of Answer Sheet will lead to UMC against the Student.