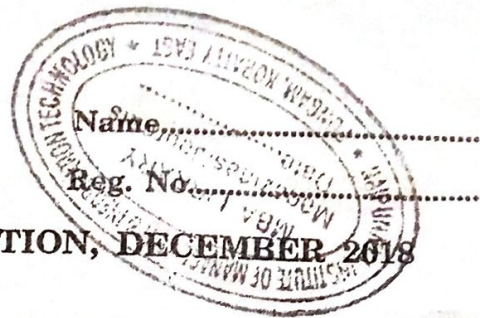


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FIRST SEMESTER M.B.A. DEGREE EXAMINATION, DECEMBER 2018

(CUCSS)

M.B.A.

BUS 1C 08—QUANTITATIVE TECHNIQUES

(2013 Admissions)

Time : Three Hours

Maximum : 36 Weightage

Part A

*Answer all the questions.
Each question carries 1 weightage.*

1. What is Random experiment ?
2. Define conditional probability.
3. Define Regression.
4. What is standard error ?
5. Explain the term "Null Hypothesis".
6. What is Chi-square test ?

(6 × 1 = 6 weightage)

Part B

*Answer any six questions.
Each question carries 3 weightage.*

7. Explain the features of SPSS.
8. Write a note on student's t -test.
9. What is meant by sampling ? Discuss the essential qualities of good sample.
10. Define Correlation and explain the various types of correlation.
11. Write down the important properties of normal distribution.
12. Number of road accidents on a highway during a month follows a Poisson Distribution with mean 6. Find the probability that in a certain month number of accidents will be (i) not more than 3 ; (ii) between 2 and 4. (Given $e^{-6} = 0.00248$).
13. What are non-parametric tests ? Explain the advantages and limitations of non-parametric tests.
14. Box A contains 4 white and 3 red balls and Box B contains 2 white and 5 red balls. One of the Boxes is to be chosen at random and a ball is to be selected from the chosen box. What is the probability of drawing a white ball ?

(6 × 3 = 18 weightage)

Turn over

Part C

Answer any two questions.
Each question carries 6 weightage.

15. In a cross-breeding experiment with plants of certain species, 240 offspring were classified into 4 classes with respect to the structures of their leaves as follows :

Class	I	II	III	IV	Total
Frequency	21	127	40	52	240

According to the theory of heredity, the probabilities of the four classes should be in the ratio of 1 : 9 : 3 : 3.

Are these data consistent with theory ?

(Use 5% value of X^2 for 3 df = 7.82)

16. Three different machines are used for a production. On the basis of the outputs, test whether the machines are equally effective :

Outputs		
Machine 1	Machine 2	Machine 3
10	9	20
5	7	16
11	5	10
10	6	14

[Given : Value of F a 5% level of significance with (2, 9) d.f = 4.26].

17. The following data shows the Maximum and Minimum temperature on a certain day at 10 important cities located throughout India :

Maximum Temperature	29	23	25	15	27	29	24	31	32	35
Minimum Temperature	8	3	7	5	8	19	10	7	5	8

- Fit a regression line of X on Y and Y on X.
- Estimate the maximum temperature when minimum temperature is 12.
- Estimate the minimum temperature when maximum temperature is 40.
- Calculate correlation coefficient.

(2 × 6 = 12 weightage)