MASTER OF BUSINESS ADMINISTRATION EVERONN (MBAEV)

Term-End Examination

June, 2013

MCN-038 : QUANTITATIVE TECHNIQUES

Time : 3 hours *Maximum Marks : 100*

Note : *Answer any five questions. All questions carry equal marks.*

1. (a) Give a brief description of an LP problem with illustrations. How can it be solved graphically ? **10**

    (b) What is a feasible region ? Is it necessary that it should always be a convex set ? **10**

2. (a) What is degeneracy in transportation problem ? How is a transportation problem solved when the demand and supply are not equal ? **10**

    (b) In a factory, the following null hypothesis is formulated for its defect levels. **10**

    H0 : $\mu \leq 60$

    H1 : $\mu > 60$.

    From an inspection report, the samples showed the following value, $n = 16$ $T = 12$

    and $\bar{x} = 62$. Test the hypothesis.

3. The rank correlation coefficient between marks 20 obtained by some students in Statistics and Accountancy is 0.8. If the total of squares of rank differences is 33, find the number of students.

4. Consider the population of 20

   3, 5, 7, 9, 10, 4, 7, 8, 11, 13, 12, 8, 6, 7, 10. Find the probability that the sample mean is more than 6 and less than 7, in all possible sample size 15, provided the sample are drawn with replacement.

5. A person has two choices to choose from : 20

| Choice - 1 : | Winning Rs. 25, 000 or nothing with 50/50 chance on a bet. |
| Choice - 2 : | A sure gift of Rs. 10, 000 |

   Suggest a most likely choice chosen by him.

6. Briefly comment on **any four** of the following : 5x4=20

   (a) Dependent variable is sales volume and the independent variable are price levels.

   (b) Cluster sampling consists of forming suitable groups or clusters.

   (c) Time series is a series of values or data arranged in a chronological order.

(d) The value of F - static indicates we are well within the range of acceptance of null hypothesis.

(e) A decision tree analysis involves the construction of a diagram.

7. Distinguish between **any four** of the following :
   (a) EVPI Vs EPPI   **5x4=20**
   (b) Statistical Probability Vs Axiomatic Probability
   (c) Linear Trend Vs Second Degree Trend in time series
   (d) Simple random sampling Vs Stratified Random sampling
   (e) Estimation Vs Hypothesis

8. Write short notes on **any four** of the following :
   (a) Least square method   **5x4=20**
   (b) Chi - square
   (c) Decision Tree Analysis
   (d) Hungarian method
   (e) Application of t - distribution

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