MASTER OF BUSINESS ADMINISTRATION (MBACN)

Term-End Examination

December, 2013

MCN-006 : QUANTITATIVE ANALYSIS FOR BUSINESS DECISIONS

Time : 3 hours   *Maximum Marks : 100*

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

1.   Write the Average Cost and Marginal Cost for   **20**
     the total cost of function given as

     $$Tc = \frac{1}{3} x^3 - 3x^2 + 9x$$

     Where x is the output in thousand units. Calculate Minimum Average Cost.

2.   A committee of four has to be formed from among   **20**
     3 economies, 4 engineers, 2 statistician and a doctor.
     (a)   What is the probability that each of the four professions is represented on the committee.
     (b)   What is the probability that the committee consists of the doctor and at least one economist.

3.   "Quantifying the elements of a decision problem   **20**
     in the easy part ; the hard part in solving the model. Do you agree ? Why or why not ?

4. Calculate the mean deviation from :   **20**
    (a) arithmetic mean
    (b) mode
    (c) median

    In respect of the marks obtained by nine students given below and show that the mean deviation from median is minimum.

    | Mark (out of 25) : 7, 4, 10, 9, 15, 12, 7, 9, 7 |

5. A random sample of size 16 has 53 as mean. The   **20**
    sum of the squares of the deviation taken from the mean is 150. Can this sample be regarded as taken from the population having 56 as mean. Obtain 95% and 99% confidence limits of the mean population.

    | $t_{0.01} = 2.95$ | | $t_{0.05} = 2.13$ |

6. Briefly comment on **any four** of the following : **5x4=20**
    (a) Standard deviation in the measure of the dispersion of observations.
    (b) Concept of relationship between two variables is denoted by correlations.
    (c) Transportation problems are encountered in physical distribution of goods.
    (d) Gamma distribution is derived by the sum of n identically distributed and independent exponential random variables.
    (e) Translation of a discrete distribution to a continuous distribution is not completely straight forward.

7. Distinguish between on **any four** of the
    following :   5x4=20
    (a) MODI and Stepping stone
    (b) Classification and Tabulation
    (c) Addition theorem and multiplication
         theorem in probability
    (d) Unions and Intersections
    (e) Positive and Negative correlation

8. Write short notes on **any four** of the following :
    (a) Bi-variate distribution analysis.   5x4=20
    (b) Random variable.
    (c) Non-Sampling Error.
    (d) Testing of Hypothesis.
    (e) Statistical Table.

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