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[5304]-207

M.A. (Part I) (Second Semester) EXAMINATION, 2018

ECONOMICS

EC-207 : Statistical Techniques

(2008 PATTERN)

Time : Three Hours

Maximum Marks : 80

N.B. :— (i) Attempt *All* questions.

(ii) Answers should be precise and to the point.

(iii) Use of non-programmable calculator is allowed.

(iv) Figures to the right indicate full marks.

1. Attempt any *one* : [20]

(a) A problem of statistics is given to two students 'A' and 'B'.

The odds in favour of 'A' solving the problem are 6 to 9 and against 'B' solving the problem 12 to 10. If 'A' and 'B' attempt, find the probability of problem being solved.

(b) Define and discuss index numbers and give their uses, also give the chain base method of constructing a Price Index Numbers.

P.T.O.

2. Attempt any *one* : [20]

(a) From the prices of shares of 'X' and 'Y' below, find out which is more stable in value :

X	Y
34	108
54	107
52	105
53	105
56	106
58	107
52	104
50	103
51	104
49	101

(b) What is a time series ? Distinguish between the secular trend, the seasonal variations and the cyclical fluctuations. How would you measure secular trend in any given data ?

3. Attempt any *two* : [20]

(a) The average test marks in a particular class is 79. The standard deviation is 8. If the marks are distributed normally, how many students in a class of 200 did not receive marks between 72 and 82. Given :

$$\Pr\{0 \leq Z \leq 0.7\} = 0.2580$$

$$\Pr\{0 \leq Z \leq 0.8\} = 0.2881$$

$$\Pr\{0 \leq Z \leq 0.6\} = 0.2257$$

where Z is a standard normal variable.

- (b) The first three moments of distribution about the value 67 of the variable are 0.45, 8.73 and 8.91. Calculate the second and third central moments, and the moment coefficient of skewness. Indicate the nature of distribution.
- (c) Between the hours 2 P.M. and 4 P.M. the average numbers of phone calls per minute coming into the switch board of a company is 2.35. Find the probability that during one particular minimum there will be at most two phone calls.
(Given : $e^{-2.35} = 0.95374$.)
- (d) The number of scooter accidents per month in a certain town were as follows :

12, 08, 20, 02, 14, 10, 15, 06, 09, 04.

are these frequencies in agreement with the belief that accident conditions were the same during 10 months period.

4. Attempt any *four* : [20]

- (a) Discuss the weak points of various measures of central tendency.
- (b) Comment : Regression equations are irreversible.
- (c) What are the main features of Poisson Distribution.
- (d) Give the various applications of ' t ' distribution in statistics.
- (e) Discuss measures of dispersion, indicating the uses.
- (f) Explain the types of errors in hypothesis testing.