(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 1138/7105   Roll No. ☐☐☐☐☐☐☐☐☐☐

M. B. A.

(Semester-I) Theory Examination, 2012-13

BUSINESS STATISTICS

Time : 3 Hours]   *[Total Marks : 100*

Note : Attempt questions from each Section as per instructions.

Section-A

Attempt *all* parts of this question. Each part carries 2 marks.   2×10=20

1. (a) State applications of inferential statistics.
    (b) State the objectives and essentials of an ideal average.
    (c) Define coefficient of variation.
    (d) Explain components of time-series.
    (e) Distinguish between partial and multiple correlation.
    (f) Level of significance.
    (g) Define Poisson distribution.
    (h) What is Addition theorem of probability ?
    (i) Properties of Normal distribution.
    (j) Techniques of association of attributes.

Section-B

Attempt any *three* parts of this question. Each part carries 10 marks.   10×3=30

2. (a) How do you make a choice of suitable measure of central tendency ?
    (b) Distinguish between skewness and kurtosis.
    (c) What is regression ? What is its significance ?
    (d) State the important uses of index numbers.
    (e) What are the steps in a test of significance problem ?

Section-C

Attempt *all* questions of this Section. Each question carries 10 marks.   10×5=50

3. Mean and coefficient of standard deviation of 100 observations are found by a student as 50 and 0.1. If at the time of calculation two items are wrongly taken as 40 and 50 instead of 60 and 30, find the correct mean and standard deviation.

Or

From the following data calculate Karl Pearson's coefficient of skewness :

Marks less than	10	20	30	40	50	60	70
No. of Students	10	30	60	110	150	180	200

4. From the following table, calculate the coefficient of correlation by Karl Pearson's method :

X	6	2	10	4	8
Y	9	11	?	8	7

Arithmetic means of X and Y series are 6 and 8 respectively.

Or

Below are the figures of production (thousand tons) of a sugar factory :

Year	2006	2007	2008	2009	2010	2011
Production	700	600	500	900	1100	1200

Fit a straight line trend by the method of Least squares and tabulate the trend values.

5. Distinguish between the following pairs :
   (a) Laspeyre's and Paasche's index number formula
   (b) Time Reversal and Factor Reversal tests
   (c) Fixed base index and Chain base index numbers.

Or

On an average, 20% of persons going to the handicraft emporium are foreigners, and the remaining 80% are local persons. 75% of such foreigners and 50% of such local persons are found to make purchases. If a bundle of purchase items is sent to the cash counter, what is the probability that the purchaser is a foreigner ?

6. What is meant by theoretical distribution ? Define binomial distribution. Give two examples of binomial distribution.

Or

   (a) Define normal distribution.
   (b) Scores in an examination were considered as normally distributed with a mean 75 and a standard deviation of 15. If the lowest passing score is 60, what percentage of those who took the examination failed to pass it ?

Given area under standard normal curve (between $z = 0$ and z) :

z	0	0.5	1.0	1.5	2.0
Area	0.0000	0.1915	0.3413	0.4332	0.4772

7. Write short notes on any two of the following :
   (a) Bayes theorem
   (b) Spearman Rank correlation coefficient
   (c) Distinguish between t-test and z-test
   (d) Chi-square test.

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