15552

MBA 1st Semester Examination

Business Statistics (NS)

MBA-102

Time : 3 Hours   Max. Marks : 60

The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.

Note :   All questions are compulsory in Section A which carry two marks each. Attempt any four questions from Section B carrying five marks each and attempt any two questions from Section C which carry ten marks each.

SECTION - A

1.   (a)   Define statistics.

   (b)   What is random variable?

   (c)   What are the methods used for the collection of primary data?

   (d)   What do you mean by range?

   (e)   Distinguish between variation and skewness.

   (f)   Differentiate between mutually exclusive events and sample space.

   (g)   What is the use of scatter diagram?

   (h)   What is the use of studying regression?

   (i)   What is bionomial distribution?

   (j)   What are the components of time series?   (10×2=20)

[P.T.O.]

SECTION - B

2.   A FMCG company has selling offices in every metro city in the country. It makes 25 kinds of products which are sold in both in retail and wholesale by the offices. The head office wishes to plan a sales campaign based on the past sales and likely the future demand. Design a questionnaire for the collection of the requisite data and draft instructions for completing the questionnaire.   (5)

3.   The profit earned by 200 companies during 2013-2014 are given below:

Profits (Rs. crores)	No. of Companies	Profits (Rs. Crores)	No. of Companies
0-10	10	50-60	28
10-20	26	60-70	31
20-30	34	70-80	13
30-40	40	80-90	09
40-50	05	90-100	04

   Calculate: (i) Quartile (Q_1) (ii) Median   (5)

4.   "The choice of suitable base period is at best a temporary solution." Why? Discuss the statement.   (5)

5.   It is believed that 40 per cent of all stolen cars are recovered and returned to the owners. In a month when 400 cars are stolen, what is the probability that between 85 and 95 cars will be recovered and returned to their owner?   (5)

6.   Define the standard error of a statistic. How it is helpful in the testing of hypothesis and decision-making?   (5)

SECTION - C

7.   How is the F-distribution related to the student's t-distribution and Chi-square distribution? What important hypothesis can be tested by the F-distribution? Explain.   (10)

8. Find out the regression coefficient of y on x and x on y from the following data:

    $\Sigma x = 60, \bar{x} = 5, \Sigma y = 80, \bar{y} = 9, \Sigma xy = 450$
    variance of x=6, variance of y=11.   (10)

9. What are regression lines? Point out the role of regression analysis in business decision-making.   (10)

10. From the following data pertaining to the income of 5,800 persons, Find Bowley's co-efficient of skewness and interpret its value:

Income (Rs.)	No. of persons	Income (Rs.)	No. of persons
Below 10,000	170	40,000-50,000	1,350
10,000-20,000	630	50,000-60,000	1,000
20,000-30,000	1,000	60,000 and above	400
30,000-40,000	1,250		

(10)