S.No. : 86 MBA 3105

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

PAPER ID : 37205 Roll No. 1 2 2 0 4 7 5 1 1 1

MBA Examination 2023-24

(Odd Semester)

BUSINESS STATISTICS

Time : Three Hours] *[Maximum Marks : 60*

Note :– Attempt all questions.

SECTION–A

1. Attempt all parts of the following : 8×1=8

   (a) Find the mode for the following data :

   1, 2, 3, 3, 4, 5, 4, 6, 2, 3

   (b) Find the median for the following data :

   18, 12, 17, 22, 20

   (c) Define simple correlation.

   (d) For a certain distribution, if mean is 180, mode is 175 and standard deviation is 12. Calculate Karl Pearson's coefficient of skewness.

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(e) What do you understand by the independent events in probability?

(f) Define conditional probability.

(g) What do you understand by systematic sampling?

(h) What do you mean by Type II error in hypothesis testing?

SECTION – B

2. Attempt any two parts of the following : 2×6=12

(a) Calculate the standard deviation from the following data :

Marks	No. of students
0 – 10	10
10 – 20	15
20 – 30	25
30 – 40	25
40 – 50	10
50 – 60	10
60 – 70	5

(b) Discuss the types of correlation with examples.

(c) Explain Addition theorem or Addition rule of probability with example.

(d) Explain the process of hypothesis formulation.

SECTION – C

Note :– Attempt all questions. Attempt any two parts from each question. 5×8=40

3. (a) Calculate median from the following data :

Marks	No. of students
0 – 10	10
10 – 20	9
20 – 30	25
30 – 40	30
40 – 50	16
50 – 60	10

(b) Calculate mean deviation about mean for the following data :

X	10	11	12	13	14	Total
f	3	12	18	12	3	48

(c) Discuss about the skewness. How do you test skewness of any frequency curve?

4. (a) Ten competitors in a beauty contest are ranked by two judges in the following order :

Judge-I	1	6	5	10	3	2	4	9	7	8
Judge-II	6	4	9	8	1	2	3	10	5	7

Calcualte the Spearman's rank correlation coefficient.

(b) Calculate 5-yearly moving averages for the following data :

Year	Value ('000 ₹)
1981	123
1982	140
1983	110
1984	98
1985	104
1986	133
1987	95
1988	105
1989	150
1990	135

(c) Explain the concept of index numbers. Discuss the uses of index numbers.

5. (a) Explain multiplication theorem or multiplication rule of probability with example.

(b) From a well-shuffled pack of 52 cards, a card is drawn at random. Find the probability that it is either a heart or a queen.

(c) What do you understand by binomial probability distribution? Discuss the applications also in brief.

6. (a) Differentiate between Type-1 and Type-2 error in hypothesis testing.

(b) Explain various types of sampling techniques in brief.

(c) Differentiate between t-test and z-test.

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