

Roll No



**PRESIDENCY UNIVERSITY  
BENGALURU**

**SET B**

**SCHOOL OF MANAGEMENT  
MID TERM EXAMINATION - DEC 2023**

**Semester :** Semester I - 2023

**Course Code :** MBA1007

**Course Name :** Sem I - MBA1007 - Business Statistics

**Program :** MBA

**Date :** 04-DEC-2023

**Time :** 10:00AM - 11:30AM

**Max Marks :** 50

**Weightage :** 25%

**Instructions:**

- (i) Read all questions carefully and answer accordingly.
- (ii) Question paper consists of 3 parts.
- (iii) Scientific and non-programmable calculator are permitted.
- (iv) Do not write any information on the question paper other than Roll Number.

**PART A**

**ANSWER ALL THE QUESTIONS**

**(5 X 2 = 10M)**

1. What are mutually exclusive events? Give an example. (CO1) [Knowledge]
2. What are complimentary events? Give an example. (CO1) [Knowledge]
3. Define the addition rule of probability for any two events. (CO1) [Knowledge]
4. Mention any two advantages of mean. (CO2) [Knowledge]
5. Mention any two advantages of median. (CO2) [Knowledge]

**PART B**

**ANSWER ALL THE QUESTIONS**

**(3 X 6 = 18M)**

6. The following are the room price (in \$) paid by U.S. travellers in six British cities in 2020: 185 160 126 116 112 105, Compute mean and median. (CO1) [Comprehension]
7. The radio music listener market is diverse. Listener formats might include adult contemporary, album rock, top 40, oldies, rap, country and western, classical, and jazz. In targeting audiences, market researchers need to be concerned about the ages of the listeners attracted to particular formats. Suppose a market researcher surveyed a sample of 170 listeners of country music radio stations and obtained the following age distribution.

Age	Frequency
15–under 20	9
20–under 25	16
25–under 30	27
30–under 35	44
35–under 40	42
40–under 45	23
45–under 50	7
50–under 55	2

Compute P25 and P50

(CO2) [Comprehension]

8. According to the U.S. Bureau of Labour Statistics, 75% of the women 25 through 49 years of age participate in the labour force. Suppose 78% of the women in that age group are married. Suppose also that 61% of all women 25 through 49 years of age are married and are participating in the labour force. What is the probability that a randomly selected woman in that age group is married or is participating in the labour force?

(CO1) [Knowledge]

### PART C

#### ANSWER THE FOLLOWING QUESTION

(2 X 11 = 22M)

9. The marketing manager of a large supermarket chain would like to use shelf space to predict the sales of pet food. A random sample of 12 equal-sized stores is selected, with the following results. Compute the correlation coefficient.

#### Store Shelf Space (X) (Feet) Weekly Sales (Y) (\$)

1	5	160
2	5	220
3	5	140
4	10	190
5	10	240
6	10	260
7	15	230
8	15	270
9	15	280
10	20	260
11	20	290
12	20	310

(CO1) [Application]

10. Shown here are the percentages of consumer loans with payments that are 30 days or more overdue for both bank credit cards and home equity loans over a 10-year period according to the American Bankers Association. Compute a Spearman's rank correlation to determine the degree of association between these two variables.

Year	Bank Credit Card	Home Equity Loan
1	2.51%	2.07%
2	2.86	1.95
3	2.33	1.66
4	2.54	1.77
5	2.53	1.51
6	2.18	1.47
7	3.34	1.75
8	2.85	1.73
9	2.74	1.48
10	2.52	1.54

(CO2) [Application]