Roll No. | | | | | | | | | | | | **Total No. of Pages : 03**

Total No. of Questions :10

MBA/MBA(IB)(Sem.–1)

QUANTITATIVE TECHNIQUES

Subject Code :MBA-103-18

M.Code :75404

Date of Examination:08-01-2026

Time : 3 Hrs. **Max. Marks :60**

INSTRUCTION TO CANDIDATES :

1. **SECTION-A contains EIGHT questions carrying TWO marks each and students has to attempt ALL questions.**
2. **SECTION-B consists of FOUR Subsections : Units-I, II, III & IV. Each Subsection contains TWO questions each carrying EIGHT marks each and student has to attempt any ONE question from each Subsection.**
3. **SECTION-C is COMPULSORY carrying TWELVE marks.**

SECTION-A

1. Write short notes on the following :

a) Median

b) Range

c) Rank Correlation

d) Conditional Probability

e) Binomial Distribution

f) Duality

g) Saddle Point

h) Critical Path

SECTION-B

UNIT - I

2. ***'Statistics is science as well as an art'.*** Explain with suitable examples. Also, discuss the importance and limitations of statistics.

3. **Following information is given regarding the overall miles per gallon (MpG) of 2024 small SUVs:**

   56, 57, 43, 55, 42, 35, 7, 25, 42, 17, 43, 6, 31, 28, 59, 20, 27, 36, 45, 80, 57 and 56

   You are required to compute:

   a) Compute the mean, median, and mode.

   b) Compute the variance, standard deviation and range.

UNIT - II

4. **From the following information, you are required to compute the coefficient of correlation between calories and fat component in coffee drinks:**

Coffee	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Calories	238	259	346	347	419	505	527	550	559	561
Fat	8	4	22	20	16	22	19	20	11	18

5. What is the difference between mutually exclusive events and collectively exhaustive events? How does conditional probability relate to the concept of independence?

UNIT - III

6. What is linear programming problem? Discuss the process for formulating a linear programming problem. Also, briefly discuss various methods of solving linear programming problem.

7. A set of final examination grades in an introductory statistics course is normally distributed, with a mean of 78 and a standard deviation of 9. You are required to compute the following:

   a) What is the probability that a student scored below 93 on this exam?

   b) What is the probability that a student scored between 69 and 103?

   c) The probability is five percent that a student taking the test scores higher than what grade?

   d) Ifthe professor grades on a curve (i.e., gives As to the top ten percent of the class, regardless of the score), are you better off with a grade of 87 on this exam or a grade of 72 on a different exam, where the mean is 64 and the standard deviation is 4?

UNIT - IV

8. Is transportation problem is of maximization type or minimization type problem? If it is one of the two, how do you solve the other version of the transportation model?

9. Solve the traveling salesman problem given below for minimizing the total distance travelled. Distance in Km.

Cities	**A**	**B**	**C**	**D**	**E**
A	7	10	8	29	12
B	16	14	12	10	9
C	6	3	17	14	12
D	12	19	17	14	12
E	11	8	16	13	18

SECTION-C

10. **Case Study:**

Assume that the activity time estimates (in days) for the swimming pool construction project are as follows:

Activity	**Immediate Predecessor**	**Optimistic**	**Most Likely**	**Pessimistic**
A	—	3	5	6
B	—	2	4	6
C	A, B	5	6	7
D	A, B	7	9	10
E	B	2	4	6
F	C	1	2	3
G	D	5	8	10
H	D,F	6	8	10
I	E,G and H	3	4	5

You are required to calculate:

a) What are the critical activities?

b) What is the expected time to complete the project?

c) What is the probability that the project can be completed in 25 or fewer days?

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.