

Roll No.

Total No. of Pages : 03

Total No. of Questions : 10

MBA (IB) (Sem.-1)
QUANTITATIVE TECHNIQUES
Subject Code : MBA-103-18
M.Code : 75404
Date of Examination : 15-06-2024

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTION TO CANDIDATES :

- SECTION-A contains EIGHT questions carrying TWO marks each and students has to attempt ALL questions.
- 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.
- SECTION-C is COMPULSORY carrying TWELVE marks.

SECTION-A

1. Answer briefly :

- Statistics in Singular Sense
- Percentile
- Rank Correlation
- Conditional Probability
- Poisson Distribution
- Rule of Dominance
- CPM
- Least Cost Method.

SECTION-B

UNIT-I

- Explain features of Statistics. Elaborate scope and limitations of Statistics.
- The following is the distribution of weights (in lbs.) of 60 students of a class:

Weights:	93-97	98-102	103-107	108-11	113-117	118-122	123-127	128-132	Total
No. of Students:	2	5	12	?	14	?	3	1	60

If the mean weight of the students is 110.917, find the missing frequencies.

UNIT-II

- Obtain the regression lines of Y on X and X on Y from the following data and estimate the blood pressure when the age is 50. Also find the value of coefficient of correlation:

Age (x)	56	42	72	36	63	47	55	49	38	42	63	60
Blood pressure(y)	147	125	160	118	149	128	150	145	115	140	152	155

- What do you mean by Probability? Explain various approaches to the; calculation of Probability.

UNIT-III

- A biscuit manufacturing company plans to produce two types of biscuits, one with a round shape and another with a square shape. The following resources are used in manufacturing the biscuits,

- Raw material, of which daily availability is 150 kg.
- Machinery, of which daily availability is 25 machine hours.
- Labour, of which daily availability is 40 man-hours.

The resources used are shown in-Table 1. If the unit profit of round and square biscuits is Rs 3.00 and Rs 2.00 respectively, how many round and square biscuits should be produced to maximize total profit?

Resources	Requirement/Unit		Daily availability
	Round	Square	
Raw Material	100	115	1500 grains
Machine	10	12	720 minutes
Manpower	3	2	240 minutes

7. Explain the assumptions made in the game theory. Explain two criteria of Minimax & Maximin of Optimality.

UNIT-IV

8. Obtain the Optimal Solution of Transportation problem using the MODI Method:

Destination

		D ₁	D ₂	D ₃	D ₄	Supply
Source	S ₁	19	30	50	10	7
	S ₂	70	30	40	60	9
	S ₃	40	8	70	20	18
Demand		5	8	7	14	

9. Explain the Steps involved in solving the Assignment Problem. What is meant by an Unbalanced Assignment Problem? :

SECTION-C

10. Case Study

An Assembly having the following sequence of activities given along with their predecessor in the table below. Draw a network diagram for the assembly :

Activity	Description	Predecessor
A	Pick bolt & washer	-
B	Insert washer in screw	A
C	Fix the bolt in flange	A
D	Screw the nut with bolt	B, C
E	Pick the spanner	D
F	Tighten the nut	E
G	Place the assembly apart	F

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.