

**K-827**

Total Pages : 4

Roll No. ....

**MS-104**

**Quantitative Techniques in Management**

Master of Business Administration (MBA))

1st Semester Examination, 2023 (Dec.)

**Time : 2 Hours]**

**Max. Marks : 70**

**Note :** This paper is of Seventy (70) marks divided into two (02) Sections A and B. Attempt the questions contained in these sections according to the detailed instructions given therein. Candidates should limit their answers to the questions on the given answer sheet. No additional (B) answer sheet will be issued.

**SECTION–A**

**(Long Answer Type Questions)**

**Note :** Section 'A' contains Five (05) long answer type questions of Nineteen (19) marks each. Learners are required to answer any Two (02) questions only.

(2×19=38)

1. Define Business Statistics. Explain its concept and significance in decision-making for businesses. Highlight the limitations of using statistics in the business context. Support your answer with relevant examples.
2. Given two sets of data,  $X : (12, 15, 18, 21)$  and  $Y : (8, 10, 14, 20)$ , calculate the Pearson correlation coefficient. Interpret the result, including the strength and direction of the relationship between  $X$  and  $Y$ .
3. Discuss significance of probability. Provide examples to illustrate the concept of probability in real-world scenarios. Also explain types of probability.
4. Solve the following transportation problem. Obtain the initial solution by North West corner rule :

		To				
		1	2	3	4	
	A	7	3	8	6	60
From	B	4	2	5	10	100
	C	2	6	5	1	40
	Demand	20	50	50	80	200

5. What do you mean by primary data and secondary data? Using example, also elaborate the process of classification and tabulation of data.

## SECTION-B

### (Short Answer Type Questions)

**Note :** Section 'B' contains Eight (08) short answer type questions of Eight (08) marks each. Learners are required to answer any Four (04) questions only. (4×8=32)

1. Given the following dataset :  
12, 18, 21, 25, 28, 30, 35, 40, 45, 50,  
Calculate the mean, median and mode.
2. Explain the concepts of Range, Mean Deviation, and Standard Deviation in statistics. Provide brief formulas for each.
3. Discuss the significance of multiple correlation in the context of regression analysis. How does it differ from partial correlation?
4. Explain the concept of seasonality in a time series. How can seasonality affect the interpretation of trends and patterns in the data?
5. A box contains 5 red balls and 7 black balls. If two balls are drawn without replacement, what is the probability that both are red?

6. Explain the Poisson Distribution in probability theory.
7. Describe the concept of decision theory and its main components.
8. A small project consists of seven activities for which the relevant data are given below :

Activity	Preceding Activities	Activity Duration (Days)
A	–	4
B	–	7
C	–	6
D	A, B	5
E	A, B	7
F	C, D, E	6
G	C, D, E	5

- (a) Draw the network and find the project completion time.
- (b) Calculate total float for each of the activities.

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