GL BAJAJ Institute of Management & Research Greater Noida
FIND YOUR SPARK

Roll No.....

Plot No. 2, Knowledge Park-III, Greater Noida (U.P.) –201306

POST GRADUATE DIPLOMA IN MANAGEMENT (2025-27)

MID TERM EXAMINATION (TERM -I)

Subject Name: **STATISTICS FOR DECISION MAKING** Time: **01.00 hrs**

Sub. Code: **PG104** Max Marks: **20**

Note: All questions are compulsory. Read the case and answer the questions

Kindly write the all the course outcomes as per your TLEP in the box given below:

CO1- Identify and explain the fundamental concepts of statistics, including types of data, variables and methods of data collection. (L2, L4) **CO2-** Organize, classify, and represent data using frequency tables, graphs and diagrams to facilitate analysis. (L2, L3) **CO3-** Compute and interpret measures of central tendency and dispersion such as mean, median, mode, range, variance and standard deviation. (L3, L4) **CO4-** Analyze and evaluate the relationship between variables using correlation and regression techniques, including rank correlation and regression lines. (L4, L5) **CO5-** Apply basic probability concepts and distributions (Binomial, Poisson and Normal) to solve business-related problems under uncertainty. (L2, L3) **CO6-** Build and evaluate forecasting models using moving averages and regression techniques to support data-driven business decision making. (L3, L5, L6)

SECTION - A

Attempt all questions. All questions are compulsory. **4*5 = 20 Marks**

	CO	Bloom's Level
Read the case and answer the questions *Q-1 Case Study: Logistics and Operations at SwiftMove Couriers* **Background:** SwiftMove Couriers is a growing logistics company that handles last-mile delivery services in Delhi–NCR. To improve efficiency, the operations manager decided to analyze the **delivery times (in minutes)** for packages delivered over the last month. The data collected was grouped into the following frequency distribution:	**CO1,2**	**L2,L3**

Delivery Time (Minutes)	Number of Deliveries
10 – 20	15
20 – 30	25

30 – 40	40
40 – 50	30
50 – 60	20
60 – 70	10

The company also wants to use this statistical information to improve route planning and customer satisfaction.

Questions (for Decision Making)

Q1 Calculate the **mean delivery time** using the mean method. Based on this, also write the interpretation of the result. (5 marks)

Q2 Find the **median and mode** delivery times. From an operations perspective, which measure (median or mode) would be more useful for managers to monitor daily performance, and why?. (5 marks)

Q-2 Case Study: Production Consistency at Alpha Manufacturing Ltd.

CO1, 2

L2, L3

Background: Alpha Manufacturing Ltd. produces steel rods that must meet strict quality standards in length (in centimeters). The operations manager collected data on the **length of rods** produced in a day from two different machines (Machine A and Machine B). The aim is to assess **consistency** in production, since high variability increases wastage and customer complaints.

The data (in cm) for a sample of rods from both machines is summarized below:

Length (cm)	Frequency (Machine A)	Frequency (Machine B)
95 – 100	6	5
100 – 105	12	10
105 – 110	20	25
110 – 115	8	15
115 – 120	4	5

Questions (Decision-Making Oriented)

Q1: Compute the **standard deviation** for both machines. Based on your results, which machine produces rods more consistently? (5marks)

Q2 : Calculate the **Coefficient of Variation (CV)** for both machines. Which machine is more reliable in terms of relative consistency, and why might management prefer it? (5 marks)		

Kindly fill the total marks allocated to each CO's in the table below:

COs	Blooms Taxonomy Levels	Marks Allocated
CO1	L2	10 Marks
CO2	L3	10 Marks

Blooms Taxonomy Levels given below for your ready reference:

L1= Remembering

L2= Understanding

L3= Apply

L4= Analyze

L5= Evaluate

L6= Create