Roll No……

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

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

POST GRADUATE DIPLOMA IN MANAGEMENT (2024-26)
END TERM EXAMINATION (TERM -III)

Subject Name: **Data Modelling** Time: **02.00 hrs**
Sub. Code: **PGIT33** Max Marks: **40**

Note: All questions are compulsory. Section A carries 12 marks: 6 questions of 2 marks each, Section B carries 18 marks having 3 questions (with internal choice question in each) of 6 marks each and Section C carries 10 marks one Case Study having 2 questions of 5 marks each.
1. All questions are compulsory.
2. All questions are to be solved using MS-Excel on an individual Computer/LAPTOP.
3. EACH AND EVERY QUESTION NEEDS TO BE SOLVED ON THE DEFINED INDIVIDUAL WORKSHEETSHEET. Each sheet is renamed with the Question numbers.
4. Student are supposed to save the file using Room No., Admission No., full name and section: example (PGDM24123_Rajesh_B).

CO-1	**Understand and apply Data Modelling techniques for decision-making in business**
CO-2	**Apply Optimization techniques for resolving business problems**
CO-3	**Analyze the data models for validity and feasibility in business.**
CO-4	**Create data models and simulations to solve business problems**
CO-5	**Evaluate and analyze time series data**

SECTION - A

Attempt all questions. All questions are compulsory. **2×6 = 12 Marks**

Questions	CO	Bloom's Level
Q. 1: (A). _____ is the Excel feature used to determine how different input values impact a specific output **Q. 1: (B).** The _____ function in Excel is typically used to measure the degree of asymmetry in stock return distributions. **Q. 1: (C).** Excel's _____ tool can solve optimization problems by adjusting variables to minimize or maximize a specified objective **Q. 1: (D**). _____ mean is particularly appropriate when averaging ratios or rates like price-to-earnings (P/E) ratios or speeds**.** **Q. 1: (E).** The analysis that examines the effect of changing multiple variables simultaneously is called _____ analysis in Excel. **Q. 1: (F).** In financial data, the _____ mean is most suitable for calculating average annual growth rates.	CO1	

SECTION – B

All questions are compulsory (Each question has an internal choice. Attempt anyone (either A or B) from the internal choice) **6 x 3 = 18 Marks**

Questions	CO	Bloom's Level
Q. 2: (A). The Profit of a Business is calculated as given in sheet "Q2". Create a Three Scenarios which estimate the profit as follows:	CO2	

Particular	Best	Average	Worst
Revenue	200000	100000	80000
Raw Material	70000	45000	38000

Wages and Salaries	40000	25000	25000
Admin Exp	30000	20000	22000

Or

Q. 2: (B). Calculate the Skewness, Kurtosis, standard deviation and variance for the student scores in maths and History(Sheet:Q2(B)) and interpret the same.

Q. 3: (A). Use simplex method to solve the following Linear Programming Problem:

Maximize Z= 107a + b +2c

Subject to:

6a + b -c <=3

16a + 3b – 6c <=5

3a – b -c <=0

CO3

Or

Q. 3: (B). The Daily closing price of a stock is given. Smoothen the price series using exponential smoothening, keep the dampening factor (alpha) = 0.2, and create a relevant chart for closing price and exponential series.

Q. 4: (A). The Actual Home Prices and Predicted Home Prices for Interest rate as Independent variable are given. Calculate Error, Error^2, MSE and RMSE for the data

CO5

Or

Q. 4: (B). Explain various components of a time series and their applications

SECTION - C

Read the case and answer the questions **5×02 = 10 Marks**

Questions	**CO**	**Bloom's Level**

Q. 5: Case Study:

Ramesh plans to start a business venture, for which the expected data is as follows:

	Revenue	Raw Material	Wages	Admin Exp	Advt and Sales Exp.
Mean	10,00,000	5,00,000	2,00,000	1,00,000	150,000
Std Dev	4,00,000	3,00,000	1,00,000	60,000	90,000

CO4

Questions:

Q. 5: (A). What is Monte-Carlo Simulation and explain its applications in Business

Q. 5: (B). Apply Monte-Carlo Simulation to the given case and calculate the probability of getting a profit of more than Rs. 100,000 by applying 10 runs of thousand simulations each.

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

COs	**Question No.**	**Marks Allocated**
CO1	1	12
CO2	**2**	**6**
CO3	3	6
CO4	5	10
CO5	4	6

(Please ensure the conformity of the CO wise marks allocation as per your TLEP.)

Blooms Taxonomy Levels given below for your ready reference:

L1= Remembering, L2= Understanding, L3= Apply, L4= Analyze, L5= Evaluate, L6= Create