GL BAJAJ
Institute of Management & Research
Greater Noida
F I N D Y O U R S P A R K

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POST GRADUATE DIPLOMA IN MANAGEMENT (2025-27)
END TERM EXAMINATION (TERM -II)

Subject Name: Research Methods in Business	Time: 02.00 hrs
Sub. Code: PG205	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)

Instructions: QNos.1, 2 and 4(B) are to be attempted using pen and paper and submitted to the invigilator within 45 minutes of the start of exam. QNos. 3, 4(A) and 5 are to be attempted using SPSS on your laptops.
Note: Paste SPSS output along with your answers in a word file saved as Name_Admission Number_Section_RMB and submit in the pen drive provided.

SECTION – A		
Attempt all questions. All questions are compulsory. **2×6 = 12 Marks**		
Questions	**CO**	**Bloom's Level**
Q. 1: (A). In a study on consumer buying behaviour, the researcher collects data on: • Type of smartphone brand used • Monthly income of respondents Identify the level of measurement used for each variable	CO1	L2
Q. 1: (B) A human resource department plans to study employee turnover in the organization. Identify any two steps of the research process that should be undertaken *after* defining the research problem.	CO1	
Q. 1: (C) A startup wants to study customer preference for online food delivery apps. Frame one specific and measurable research objective.	CO1	
Q. 1: (D). What is a double-barrelled question? Give one example.	CO2	
Q. 1: (E). Which research design should be used in the following cases: a) A management student collects data using a structured questionnaire with Likert-scale questions to analyze consumer brand preference. b) A telecom company surveys the same group of customers every six months for two years to track changes in satisfaction levels. c) A company wants to first gain insights into customer complaints about its service and later use the findings to design a structured survey d) A retail chain wants to estimate the percentage of customers who prefer online shopping over in-store shopping during the festive season	CO2	
Q. 1: (F) Classify the following as primary or secondary data: a) Focus group discussions about a new mobile app b) Diary entries collected from participants in a psychological study	CO2	

c) Customer feedback forms filled at a service desk
d) Sales records stored in company databases
e) Website analytics (like Google Analytics data)
f) Observations of consumer behaviour inside a store
g) Books written by experts or academics
h) Survey responses collected from customers about product satisfaction

L3

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
Q2(A) An HR researcher wants to study job satisfaction among employees in a large IT organization with offices in multiple locations. The organization has employees at entry, middle, and senior levels. a) Which sampling technique should be used to ensure adequate representation? (2) b) Explain how the sampling frame would be formed and how sampling would be done.(4) <center>Or</center> **Q2(B)** A consumer electronics company wants to study brand switching behaviour for smartphones in four metro cities. Customer lists are available from retailers, but many buyers purchase phones online and are not on these lists. a) Identify an appropriate sampling technique. (2) b) Explain how the sampling frame and sample units would be defined. (2) c) State one limitation of the proposed sampling design. (2)	CO3	L3
Q3(A) The following data has been collected from 8 customers regarding their online shopping habits:	CO4	

Customer Id	Gender	Age (Years)	Monthly Income (000)	Frequency of Online Purchases (per month)	Overall Satisfaction (1-5)
1	Male	24	35	3	4
2	Female	30	50	5	5
3	Male	28	45	4	3
4	Female	35	60	6	4
5	Male	40	70	5	5
6	Female	32	55	4	4
7	Male	26	40	3	3
8	Female	38	65	6	5

L4

Use SPSS to enter these variables in SPSS Variable View (Variable Name, Type, Label, Measure). *Note: Pls take screenshot of the data entered (in variable view) and paste in the word file.*

<center>Or</center>

Q. 3: (B) A company wants to analyze the performance of its employees across different departments. You are given data on Age, Years of Experience, Monthly Sales (in ₹000), Customer Rating (1–10 scale), and Department for 10 employees.
The dataset is as follows:

EmpID	Age	Experience (Years)	Monthly_Sales (₹000)	Customer_Rating (1–10)	Department
1	25	2	120	7	Sales
2	28	3	95	6	Sales
3	31	5	180	9	Marketing
4	35	8	210	8	Marketing
5	29	4	140	7	Sales
6	42	15	300	9	Finance
7	38	10	260	8	Finance
8	30	6	150	7	HR
9	26	2	110	6	HR
10	34	7	200	8	Marketing

a) Use SPSS to run descriptive statistics for the variables:
   Age, Experience, Monthly_Sales and Customer_Rating

b) Based on the descriptive statistics obtained in part (a), interpret the results. Discuss which variable shows the highest variability, whether the employees' ratings are consistent, and what the average sales and experience levels suggest about the workforce.

Note: Please copy the relevant tables/graphs from SPSS in the word file

CO5

Q. 4: (A) A training institute claims that participants of its online coding course spend an average of 12 hours per week practicing programming. To verify this claim, a random sample of 12 students was taken, and their weekly practice hours were recorded:

Student	Hours of Practice per Week
1	10
2	14
3	12
4	9
5	16
6	11
7	15
8	13
9	12
10	17
11	14
12	10

L4

a) Enter the data into SPSS and perform a One-Sample t-Test to test the following hypothesis at $\alpha = 0.05$:
   Null Hypothesis (H$_0$): $\mu = 12$ hours
   Alternative Hypothesis (H$_1$): $\mu \neq 12$ hours

b) Report and interpret the results. Also state whether the sample provides enough evidence to reject the training institute's claim
   Note: Report your findings (by copying and pasting relevant tables from SPSS) and write your interpretations in the Word File

Or

4(B) You are a data analyst for a multinational company evaluating three different policy decisions using SPSS. For each situation below, identify which type of t-test (one-sample, independent samples, or paired samples) is appropriate and justify your choice based on the research design, data structure, and measurement objectives.

1. The company plans to introduce a global performance benchmark of 75 points. Before applying it, the management wants to test whether the current average performance score of employees in the Indian branch is significantly different from 75.
2. The Learning & Development team wants to measure whether a new AI-assisted training module leads to measurable improvement in analytical skills. The same employees took a skills test before the module and after completing the training.
3. The HR division is investigating whether the shift from contract-based work to full-time employment has impacted stress levels. Stress scores (1–10) were collected from two different employee groups: contract employees and full-time employees

SECTION - C

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

	CO	Bloom's Level
Q. 5: Case Study: A dietetics student wanted to look at the relationship between calcium intake and knowledge about calcium in sports science students. Further she wants to know if knowledge about calcium can be used to predict calcium intake of the students Table below shows the data she collected:	CO6	L5

Respondent No.	Knowledge Score (Out of 50)	Calcium Intake (mg/day)	Respondent No.	Knowledge Score (Out of 50)	Calcium Intake (mg/day)
1	10	450	11	38	940
2	42	1050	12	25	733
3	38	900	13	48	985
4	15	525	14	28	763
5	22	710	15	22	583
6	32	854	16	45	850
7	40	800	17	18	798
8	14	493	18	24	754
9	26	730	19	30	805
10	32	894	20	43	1085

Research question 1: Is there a relationship between calcium intake and knowledge about calcium in sports science students?
Research question 2: Does knowledge about calcium predict calcium intake in sports science students?
Q. 5: (A). Use SPSS to draw a scattergram. Do you see any trend? Run correlation and report your findings. (5)
Q. 5: (B). Estimate the regression equation. A student with knowledge of calcium score equal to 30 (out of 50) could be predicted to have an approximate calcium intake of how many mgs/day? (5)

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

COs	Question No.	Marks Allocated
CO1	1(a,b,c)	6
CO2	1(d,e,f)	6
CO3	2	6
CO4	3	6
CO5	4	6
CO6	5	10

(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