**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 (2024-25)
## END TERM EXAMINATION (TERM -II)

| | |
|---|---|
| Subject Name: Research Methods in Business | Time: 02.00 hrs |
| Sub. Code: PG25 | 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(A) are to be attempted using pen and paper and submitted to the invigilator within 45 minutes of the start of exam. QNos. 3, 4(B) 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).** Please indicate the scale of measurement in which the following variables could be measured: <br> a) Brand Loyalty b) Income c) Share Prices d) Performances of employees | CO1 | L2 |
| **Q. 1: (B).** A marketing research organization is trying to find the variables that are important in the buyer's mind when they buy a refrigerator. List four variables in the customer's purchase decision of the refrigerator | CO1 | |
| **Q. 1: (C)** Indicate which type of comparative/non-comparative scale has been used in the following: <br><br> a) Scale for studying opinions on food products: | CO1 | |

| Particular | Strongly Agree | Agree | Neither Agree nor Disagree | Disagree | Strongly Disagree |
|---|---|---|---|---|---|
| If the price of raw materials fall, firms too should reduce the price of the food products | 1 | 2 | 3 | 4 | 5 |
| There should be uniform price through out the country for food products | 1 | 2 | 3 | 4 | 5 |

b) Scale to determine how important the attributes of price, fragrance, packaging, cleaning power, and lather of a detergent are to consumers:

| Attribute | No. of Points |
|---|---|
| Price | 50 |
| Fragrance | 5 |

| | | |
|---|---|---|
| Packaging | 10 | |
| Cleaning Power | 30 | |
| Lather | 05 | |
| Total Points | 100 | |

**Q. 1: (D).** What type of research would you use to investigate an area that has been under researched with preliminary data that helps shape the direction for future research? — CO2 L3

**Q. 1: (E).** Indicate whether you would use a longitudinal or cross-sectional study in the following cases: — CO2
  a) A researcher wants to track cholesterol levels in women over 40 who walk daily for 20 years
  b) You want to compare the memory of two groups, one that receives a memory pill and one that doesn't
  c) A food company wants to determine how people feel about a new flavour
  d) A social media platform wants to track how users interact with a new feature over time — CO2

**Q. 1: (F).** Classify the following as a source of primary or secondary data:
a) Tweets
b) Blog entries
c) Market Reports
d) Press Releases
e) Speeches
f) Newspaper articles

## SECTION – B

All questions are compulsory (Each question have 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)** Differentiate between probability and non-probability sampling techniques. In the following cases indicate what type of probability/non-probability sampling technique is being used:<br><br>(A). Employees of the company are listed in alphabetical order. From the first 10 numbers, you randomly select a starting point: number 6. From number 6 onwards, every 10th person on the list is selected (6, 16, 26, 36, and so on), and you end up with a sample of 100 people.<br>(B) A company has offices in 10 cities across the country (all with roughly the same number of employees in similar roles). You do not have the capacity to travel to every office to collect your data, so you use random sampling to select 3 offices<br>(C) You are researching opinions about student support services in your university, so after each of your classes, you ask your fellow students to complete a survey on the topic.<br><br>Or<br>**Q.2(B)** Differentiate between population, sampling frame, sample and sampling unit. Suppose a company wants to estimate the average income of its employees, what would be the population, sampling frame, sample and sampling unit? | CO3<br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br>CO4 | L3<br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br>L4 |

**Q. 3: (A).** At the end of a trimester course, the faculty decides to obtain student's feedback regarding their perceptions of the course, through the administration of a survey. The second item on the survey states 'I liked the subject the way it was taught', and students are asked whether or not they 'agree', 'don't know', or 'disagree' with this statement. All 12 students complete the survey and the following data is collected:

| Student Number | Item_02 |
|---|---|
| 1 | Agree |
| 2 | Agree |
| 3 | Don't Know |
| 4 | Agree |
| 5 | Agree |
| 6 | Disagree |
| 7 | Agree |
| 8 | Don't Know |
| 9 | Agree |
| 10 | Agree |
| 11 | Agree |
| 12 | Don't Know |

**Use SPSS to enter the data, assign variable names and labels and assign value labels.**
*Note:  Pls take screenshot of the data entered (in variable view) and paste in the word file.*

**Or**

**Q. 3: (B).** Use the following data to run 'Descriptives' for each variable:

**Data Description**
Var1 Respondent's identification number (ID)
Var2 Respondent's gender (GENDER)1male 2female
Var3 Respondent's age (AGE)
Var4 Respondent' s mother's education - years of schooling (MEDUC)

**Data Set**

|  | ID | Gender | Age | meduc |
|---|---|---|---|---|
| 1 | 1 | 1 | 32 | 16 |
| 2 | 2 | 2 | 37 | 13 |
| 3 | 3 | 2 | 72 | 20 |
| 4 | 4 | 2 | 86 | 12 |
| 5 | 5 | 1 | 30 | 5 |
| 6 | 6 | 1 | 32 | 10 |
| 7 | 7 | 2 | 29 | 18 |
| 8 | 8 | 1 | 29 | 4 |
| 9 | 9 | 2 | 53 | 6 |
| 10 | 10 | 1 | 68 | 9 |
| 11 | 11 | 1 | 19 | 2 |
| 12 | 12 | 2 | 43 | 14 |
| 13 | 13 | 2 | 38 | 12 |
| 14 | 14 | 1 | 45 | 17 |
| 15 | 15 | 1 | 24 | 1 |
| 16 | 16 | 2 | 53 | 3 |
| 17 | 17 | 1 | 20 | 7 |
| 18 | 18 | 1 | 27 | 11 |
| 19 | 19 | 2 | 54 | 8 |
| 20 | 20 | 1 | 25 | 15 |
| 21 | 21 | 2 | 20 | 1 |
| 22 | 22 | 2 | 38 | 7 |
| 23 | 23 | 1 | 20 | 5 |
| 24 | 24 | 2 | 34 | 10 |
| 25 | 25 | 2 | 67 | 19 |

CO5 | L4

*Note: Report your findings (by copying and pasting relevant tables from SPSS) and write your interpretations in the Word File*

**Q. 4: (A).** A company that manufactures plastic chairs has launched a new brand. The company sells through various retail outlets across the country. The management of the company believes that average price for new brand is Rs. 550 in all outlets. A researcher wants to verify this claim and has taken a random sample of selling price of the new brand from 25 outlets across the country. Below is the data:

Selling Price

| 540 | 555 | 560 | 563 | 567 | 555 | 552 |
|-----|-----|-----|-----|-----|-----|-----|
| 543 | 546 | 560 | 551 | 542 | 558 | 556 |
| 552 | 550 | 556 | 559 | 554 | 557 | 558 |
| 556 | 543 | 553 |     |     |     |     |

Use SPSS to test whether average price for new brand is significantly different from Rs. 550 at the 5% level of significance. Assume the population follows a normal distribution.
*Note: Report your findings (by copying and pasting relevant tables from SPSS) and write your interpretations in the Word File*
**Or**


**Q. 4: (B).** Explain the concept of a hypothesis, including the definitions and implications of Type I and Type II errors, with the help of a relevant example. Additionally, outline the steps involved in the process of hypothesis testing."

# SECTION - C
Read the case and answer the questions          **5×02 = 10 Marks**

| Questions | CO | Bloom's Level |
|-----------|-----|---------------|
| Q. 5: Case Study:<br><br>A retail company wants to analyze the relationship between its advertising expenditure and sales revenue to understand how advertising impacts sales performance. The company collected data for the past 12 months on:<br><br>  1. Advertising Expenditure (in thousands of USD), and<br>  2. Sales Revenue (in thousands of USD).<br><br>The dataset for the 12 months is provided below: | CO6 | L5 |

| Month | Advertising Expenditure (X) | Sales Revenue (Y) |
|-------|------------------------------|-------------------|
| 1 | 20 | 210 |
| 2 | 25 | 230 |
| 3 | 30 | 250 |
| 4 | 35 | 270 |
| 5 | 40 | 290 |
| 6 | 45 | 310 |
| 7 | 50 | 330 |
| 8 | 55 | 350 |
| 9 | 60 | 370 |

| 10 | 65 | 400 |
|----|----|-----|
| 11 | 70 | 420 |
| 12 | 75 | 440 |

**Questions:**

**Q. 5: (A).** Calculate the correlation coefficient between advertising expenditure and sales revenue. Interpret the result.

**Q. 5: (B).** Perform a regression analysis to predict sales revenue based on advertising expenditure. Write the regression equation and interpret its findings.

**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**