## JAIPURIA
### INSTITUTE OF MANAGEMENT
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### JAIPURIA INSTITUTE OF MANAGEMENT, NOIDA

### PGDM / PGDM (M) / PGDM (SM)

### FIFTH TRIMESTER (Batch 2023-25)

### END TERM EXAMINATIONS, JANUARY 2025

### MAIN EXAM

| Course Name | Marketing Research | Course Code | X0131 |
|---|---|---|---|
| Max. Time | **2 hours** | Max. Marks | **40 MM** |

1. Discriminant analysis is a statistical technique used to classify observations into predefined groups based on their characteristics. It works by identifying a linear combination of predictor variables (e.g., OUTDOOR, SOCIAL, CONSERVATIVE) that best separates the groups. This combination is used to develop a discriminant function, which assigns new observations to one of the predefined categories. Refer **excel sheet 1** for this question

   a. Using the discriminant analysis technique, determine the most suitable job for an individual with given scores (20 for OUTDOOR, 25 for SOCIAL, and 10 for CONSERVATIVE).    (3 marks)

   b. Critically evaluate the accuracy of your classification using a confusion matrix. Use excel to demonstrate this classification.    (7 marks)

2. Determine how various attributes impact the purchase of a car. There are four attributes, each with three levels:

   ■ Brand: Ford = 0, Chrysler = 1, GM = 2

   ■ MPG: 15 MPG = 0, 20 MPG = 1, 25 MPG = 2

   ■ Horsepower (HP): 100 HP = 0, 150 HP = 1, 200 HP = 2

   ■ Price: \$18,000 = 0, \$21,000 = 1, \$24,000 = 2

   The nine product profiles ranked in following Figure were evaluated by a  consumer.

| | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| 1 | | (F,C,GM) | (15,20,25) | (100,150,200) | (18000,21000,24000) | |
| 2 | Trial | Brand | MPG | Power | Price | Rank |
| 3 | 1 | 0 | 0 | 0 | 0 | 4 |
| 4 | 2 | 0 | 1 | 1 | 2 | 7 |
| 5 | 3 | 0 | 2 | 2 | 1 | 3 |
| 6 | 4 | 1 | 0 | 1 | 1 | 6 |
| 7 | 5 | 1 | 1 | 2 | 0 | 2 |
| 8 | 6 | 1 | 2 | 0 | 2 | 9 |
| 9 | 7 | 2 | 0 | 2 | 2 | 8 |
| 10 | 8 | 2 | 1 | 0 | 1 | 5 |
| 11 | 9 | 2 | 2 | 1 | 0 | 1 |

**a.** Analyze the product attributes for this market segment and evaluate their importance. Rank these attributes from most to least significant based on consumer preferences and justify your rankings. ( 5 marks)

**b.** Consider a car that currently gets 20 MPG and sells for $21,000. If the MPG were increased by 1 mile, evaluate how much the price of the car could be increased while maintaining its attractiveness to the target market segment. ( 5 marks)

c. Based on this analysis, evaluate each car brand's strengths and weaknesses, and propose actionable suggestions for improvement. Express your results in tabular form. ( 5marks)

3. A shopping mall management team is trying to segment consumers based on their attitudes toward shopping. To achieve this, a survey was conducted, and respondents rated six attitudinal variables on a 7-point scale. Using this data, you are tasked with applying a clustering technique to identify distinct consumer segments. These insights will be leveraged to develop targeted strategies for enhancing customer satisfaction and boosting revenue. **Refer sheet 2 in excel.**

a. Using the provided attitudinal data, apply an appropriate clustering technique to segment the respondents into three distinct clusters. For each cluster, analyze the key characteristics of consumer attitudes and explain the underlying rationale for the groupings. ( 7 marks )

b. Evaluate how the shopping behavior of each segment differs and propose specific, actionable strategies that shopping mall management can implement to address the unique preferences and needs of each segment. ( 8 marks )