Seat No._____   Enrollment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY
MBA-SEMESTER-I-EXAMINATION-SUMMER-2025

Subject Code: MB01000031   **Date: 29/05/2025**
Subject Name: Business Research and Statistical Analysis
Time: 02:30 PM TO 05:30 PM   **Total Marks: 70**

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**
4. **Use of simple calculators and non-programmable scientific calculators are permitted.**

Q.1		Definitions / terms / explanations / short questions based on concepts of theory/practical	**14**
		(a) Define Research.	
		(b) Name some sources for literature review.	
		(c) Name the four levels of measurement with examples of each.	
		(d) What is Null Hypothesis?	
		(e) Name some non-probabilistic sampling methods.	
		(f) What is primary and secondary sources of data?	
		(g) Name measures of central tendency and variability.	
Q.2	**(a)**	Explain Significance of Literature Review in Research.	**07**
	(b)	A marketing team claims that a new advertisement campaign increases customer engagement by 15%. Frame a null and alternate hypothesis for testing this claim and describe how a business can use quantitative research methods to validate these hypotheses.	**07**

OR

	(b)	A company is planning to expand into a new geographic market but is unsure of customer preferences. Frame three research questions and corresponding research objectives to guide the study.	**07**
Q.3	**(a)**	Explain the role of focus groups and depth interviews in qualitative research. How do these methods contribute to generating insights during the exploratory phase?	**07**
	(b)	Describe the process of conducting a survey as part of descriptive research. What are the key factors to consider when choosing between different survey methods (e.g., online, face-to-face, or telephone)?	**07**

OR

Q.3	**(a)**	What are the key differences between qualitative and quantitative research?	**07**
	(b)	What are the differences between lab experiments and field experiments in causal research?	**07**
Q.4	**(a)**	Explain the importance of validity and reliability in measurement and scaling. How do these concepts affect the quality of research findings?	**07**
	(b)	A coffee shop wants to predict daily profit (in Rs.) based on the number of customers served each day. It has collected the following data:	**07**

Number of Customers (X)	50	65	70	80	90	100	110	120	130	140
Daily Profit (Y) in Rs.	250	320	350	400	450	500	550	600	650	700

Find the regression equation for Y on X. What will be the profit for 150 customers.

OR

Q.4 **(a)** Explain concepts and components of research proposal. **07**

(b) A supermarket chain wants to determine whether there is an association between customer age group and preferred payment method. The management believes understanding this relationship can help in targeting promotions and improving customer experience. They obtained the following data: **07**

Age Group	Cash	Credit/ Debit Card	Mobile Wallet
18–25	30	40	50
26–40	40	60	30
41–60	50	70	20
60+	60	30	10

Test whether age group and payment method are independent or not by using 5% level of significance.

Q.5 **CASE STUDY:**

ABC Foods Pvt. Ltd., a mid-sized food company specializing in organic snacks, is planning to launch its products in a new market segment: urban working professionals.

The company aims to understand customer preferences, purchasing behavior, and factors influencing product adoption. The management is uncertain about the best approach to gather insights and validate their market entry strategy.

To develop a robust market entry strategy, ABC Foods needs to conduct research in two phases: exploratory research to understand the target market better and conclusive research to validate findings and test hypotheses.

For exploratory Analysis they organize focus group discussions with 6–8 participants per session from the target demographic to understand their preferences, challenges, and perceptions of organic snacks. They also conducted depth interviews with nutritionists, fitness enthusiasts, and busy professionals to gather detailed insights on factors influencing their snack choices.

For quantitative descriptive study they plan to develop a structured survey to collect data from 500 urban professionals across major metropolitan cities.

They also conducted Lab Experiment by Conducting controlled taste tests to evaluate customer preferences for different flavors of snacks. Participants will rate products based on taste, appearance, and overall satisfaction without knowing the brand identity. They also resorted to Field Experiment by introducing products in select supermarkets with different pricing strategies and promotional offers to measure the impact on sales over four weeks.

	(a)	Develop a questionnaire for the survey. Questions will focus on frequency of snack consumption, preferred product features (taste, health benefits, packaging), and price sensitivity.	**07**
	(b)	Why is it important to use both lab and field experiments in causal research?	**07**

OR

Q.5	(a)	What insights can ABC Foods expect to gain from the exploratory research phase?	**07**
	(b)	How can the results of the conclusive research phase guide ABC Foods in their market entry strategy?	**07**

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