Exam. Code : 223801

Subject Code : 504845

Master of Commerce 1" Sem. (Batch 2025-27) (CBGS)

STATISTICAL ANALYSIS FOR BUSINESS

Paper : MCO01002T

Time Allowed—3 Hours]   [Maximum Marks—75

Note :— Attempt **FIVE** questions in all, selecting at least
ONE question from each section. The **fifth** question
may be attempted from any section. All questions
carry equal marks.

SECTION—A

1. (a) A security analyst feels that the chances are 40 percent
that the price of the shares of company A would
increase next week, and 10 percent that the price of
the shares of company B would rise. The two prices
are expected to move independently of each other.
Find the probability that in the next week,

(i)   Both prices will increase.

(ii) Only one company's share prices will increase.

(iii) Neither of the prices would increase.

(b) The following table gives the details of the consumer preference for a new product to be introduced in the market :

	Number of consumers		
	Like	Dislike	Neutral
Male	500	250	125
Female	200	350	75

What is the probability that a consumer selected at random from the group will be :

(i) A male who disliked the product.

(ii) One who likes the product, given that the person is a female.

(iii) Either male or one who dislikes the product

8.7

2. (a) A sales tax officer has reported that the average sales of the 500 businesses that he has to deal with during a year amount to Rs. 36,000 with a standard deviation of Rs.10,000. Assuming that the sales in these businesses are normally distributed, find

(i) The number of businesses the sales of which are over Rs.40,000

(ii) The percentage of businesses, the sales of which are likely to range between Rs.30,000 and Rs.40,000

(iii) The probability that the sales of a business selected at random will be over Rs.30,000.

Proportions of area under the Normal curve:

Z	0.25	0.40	0.50	0.60
Area	0.0987	0.1554	0.1915	0.2257

(b) What do you understand by Binomial Distribution? Explain its features. Also, differentiate between Binomial Distribution and Normal Distribution. 9,6

SECTION—B

3. Define Sampling. Explain the various types of Non-Probability Sampling Techniques. Identify a situation where in a Non-Probability Sampling methods would be followed by a researcher over the Probability method.

4. What is Primary Data? Differentiate between primary data and secondary data. Also, discuss the various sources of primary data.

SECTION—C

5. (a) Define the term 'Hypothesis'. Explain in detail the procedure of testing a Hypothesis.

(b) Describe the issues involved in pretesting a questionnaire. 8,7

6. What is a Questionnaire? Discuss the characteristics of a well-designed questionnaire. Also, differentiate between open-ended questions and close-ended questions with the help of suitable examples.

SECTION—D

7. A motion study is conducted for assembling of wall clocks. After thorough training, four assemblers are made to work on five work designs. The number of clocks assembled by each mechanic on each design for a day is recorded below :

Assembler	Work design				
	1	2	3	4	5
A	10	13	9	14	11
B	5	10	5	10	6
C	6	12	5	10	6
D	4	8	4	11	5

Test at 5% level of significance whether:

(a) Assemblers are same in productivity

(b) Work designs are same in efficiency

8. (a) You are given the following :

X_1 = Job satisfaction level, X_2 = Salary and X_3 = Working conditions

Co-efficient of correlation between X_1 and X_2 = 0.65

Co-efficient of correlation between X_1 and X_3 = 0.80

Co-efficient of correlation between X_2 and X_3 = 0.70

Calculate the co-efficient of correlation between X_1 and X_3 eliminating the effect of X.

(b) A market research firm used a sample of individuals to rate the purchase potential of a particular product before and after the individuals saw a new television commercial about the product. The purchase potential ratings were based on a scale from 0 to 10, with higher values indicating a higher purchase potential. Test the hypothesis that the commercial improved the mean purchase potential. Use a level of significance of 5% and comment on the value of the commercial.

Individual :	1	2	3	4	5	6	7	8
Purchase rating after :	6	6	7	4	3	9	7	6
Purchase rating before :	5	4	7	3	5	8	5	6

5.10