D 131248 (Pages : 3) Name.....................................

Reg. No................................

FIRST SEMESTER M.Com. DEGREE (REGULAR/SUPPLEMENTARY) EXAMINATION, NOVEMBER 2025

(CBCSS)

Master of Commerce

MCM 1C03—QUANTITATIVE TECHNIQUES FOR BUSINESS DECISIONS

(2019 Admission onwards)

Time : Three Hours Maximum : 30 Weightage

Answers should be written in English only.

Section A

Answer any **four** *questions.*
Each question carries 2 *weightage.*

1. State the points of difference between qualitative and quantitative approaches in decision making.

2. Define Regression. What are the different types of regression ?

3. Explain the concept of Standard Error of Estimation.

4. State the procedure to be followed in testing hypotheses.

5. What is SPSS ? What are its features ?

6. List out the properties of Binomial Distribution.

7. What are the uses of chisquare test ?

(4 × 2 = 8 weightage)

Section B

Answer any **four** *questions.*
Each question carries 3 *weightage.*

8. Explain the important applications of Quantitative techniques.

9. Discuss the different methods of calculating correlation.

Turn over

10. One fifth percent of the blades produced by a blade manufacturing company turn out to be defective. The blades are supplied in packets of 10. Use Poisson distribution to calculate the approximate number of packets containing : (a) No defective ; (b) One defective ; and (c) Two defective.

11. A machine turns out 16 defective items in a batch of 500. After overhauling, it turns out 3 defective items in a batch of 100. Has the machine improved after overhauling ?

12. For 17 observations on price (x) and supply (y), the following data were obtained.

$\sum X = 544, \sum X^2 = 19040, \sum Y = 244, \sum Y^2 = 3773, \sum XY = 8413.$

   (a)   Obtain the equations of the two regression lines ; and (b) What is the supply when price is Rs. 40 ?

13. 50 children were given special diet for a certain period and control group of 50 other children were given normal diet. The average gain in weight were found to be 7.2 kg. and 5.7 kg. respectively and common standard deviation for gain in weight was 2 kg. Assuming normality of the distribution, would you conclude that the special diet really promoted weight ?

14. In a simple random sample of 600 men taken from a big city, 400 are found to be smokers. In another simple random of 900 men taken from another city, 450 are smokers. Do the data indicate that there is significant difference in the habit of smoking in the two cities.

                                                                      ($4 \times 3 = 12$ weightage)

Section C

Answer any **two** *questions.*
Each question carries 5 *weightage.*

15. Four salesmen recorded their sales of refrigerators in three seasons. The data is given below. Find out whether there is any significant difference in the sales recorded : (a) Salesmen wise and (b) Season wise.

Seasons	*Salesmen*				*Season Total*
	A	B	C	D	
Summer	360	360	210	350	1280
Winter	280	290	310	320	1200
Monsoon	260	280	290	290	1120
Salesmen Total	900	930	810	960	3600

16. From the data given below about the treatment of 250 patients suffering from a disease, state whether the new treatment is superior to the conventional treatment.

Treatment		No. of Patients		
		Favorable	Not Favourble	Total
New	...	140	30	170
Conventional	...	60	20	80
Total	...	200	50	250

17. To know the effect of advertising campaign, a mango fruits company has conducted a survey. People chosen at random were called and asked how many mango-fruit sachets had bought in the past week and how many related advertisements they had either read or seen in that week :

Number of advertisements	:	6	8	4	3	2	7	5	6
Mango-fruit sachets purchased	:	10	12	6	4	3	5	4	5

Examine whether there is a correlation between purchase of mango-fruit sachets and advertisements.

18. Explain different types of two sample tests.

(2 × 5 = 10 weightage)