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Name.....

Reg. No.....

**RST SEMESTER M.Com. DEGREE (REGULAR/SUPPLEMENTARY)
EXAMINATION, NOVEMBER 2024**

(CBCSS)

M.Com.

MCM 1C 03—QUANTITATIVE TECHNIQUES FOR BUSINESS DECISIONS

(2019 Admission onwards)

: 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 different techniques of analysis of variance.
2. Distinguish between discrete and continuous probability distribution.
3. Briefly explain the scope of quantitative techniques.
4. What do you mean by sign test ? State its assumptions.
5. List out the advantages and disadvantages of SPSS in data analysis.
6. What are non-parametric tests. State some of its types.
7. Write note on :
 - (a) Null hypotheses ; and
 - (b) Alternate hypotheses.

(4 × 2 = 8 weightage)

Turn over

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Section B

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

8. Define Correlation. Explain the different types of correlation.
9. A box contains 100 transistors, 20 of which are defective. 10 are selected for inspection. Indicate what is the probability that :
- All the 10 are defective ;
 - Atleast one is defective ; and
 - At the most 3 are defective.
10. What is Normal Distribution. What are its properties.
11. A machine produces a component of a product with a standard deviation of 1.6 cm in length. A random sample of 64 components was selected from the output and this sample has a mean length of 90 cm. The customer will reject the part if it is either less than 88 cm or more than 92 cm. Can we conclude that the product produced by the machine will be accepted by the customers.
Test at 95 % confidence level.
12. Four coins were tossed 160 times and the following results were obtained :
- | | | | | | | |
|----------------------|---|----|----|----|----|---|
| No. of heads | : | 0 | 1 | 2 | 3 | 4 |
| Observed Frequencies | : | 17 | 52 | 54 | 31 | 6 |
- Under the assumption that coins are balanced, find the expected frequencies of getting 0, 1, 2, 3 and 4 heads and test the goodness of fit.
13. Find out spearman's co-efficient of correlation between the two kinds of assessment of graduate students' performance in a college :
- | | | | | | | | | | | |
|------------------|---|----|----|----|----|----|----|----|----|----|
| Name of students | : | A | B | C | D | E | F | G | H | I |
| Internal Exam | : | 51 | 68 | 73 | 46 | 50 | 65 | 47 | 38 | 60 |
| External Exam | : | 49 | 72 | 74 | 44 | 58 | 66 | 50 | 30 | 35 |
14. 1000 articles from a factory were examined and found to be 3 % defective. Among 1500 similar articles from a second factory, 2 % are found to be defective. Can it be reasonably concluded that the product of the first factory is inferior to second ?

(4 × 3 = 12 weightage)

Section C

Answer any **two** questions.

Each question carries 5 weightage.

et up an ANOVA table and also state whether variety differences are significant at 5 % level

Per Acre Production data of Wheat

Varieties of fertilisers	Varieties of seeds		
	A	B	C
W	6	5	5
X	7	5	4
Y	3	3	3
Z	8	7	4

The following data gives the age and blood pressure (BP) of 10 sports persons :

Name	:	A	B	C	D	E	F	G	H	I	J
Age (X)	:	42	36	55	58	35	65	60	50	48	51
BP (Y)	:	98	93	110	85	105	108	82	102	118	99

(a) Find regression equations of Y on X and X on Y ; and

(b) Estimate the blood pressure of a sports person whose age is 45.

17. Given below is a contingency table for production in three shifts and the number of defective good that turn out. Is it possible that the number of defective goods depend on the shifts run by them ?

Number of shifts

Shifts	I Week	II Week	III Week	Total
I	15	5	20	40
II	20	10	20	50
III	25	15	20	60
	60	30	60	150

18. Explain the different tools available in Excel, for data analysis.

(2 × 5 = 10 weightage)