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Name.....

Reg. No.....

FIRST SEMESTER M.Com. DEGREE (REGULAR/SUPPLEMENTARY) EXAMINATION, NOVEMBER 2021

[November 2020 session for SDE/Private students]

(CBCSS)

M.Com.

MCM 1C 03—QUANTITATIVE TECHNIQUES FOR BUSINESS DECISIONS

(2019 Admission onwards)

(Covid instructions are not applicable for Pvt/SDE students (November 2020 session))

Time : Three Hours Maximum : 30 Weightage

General Instructions

1. *In cases where choices are provided, students can attend* **all** *questions in each section.*
2. *The minimum number of questions to be attended from the Section / Part shall remain the same.*
3. *The instruction if any, to attend a minimum number of questions from each sub section / sub part / sub division may be ignored.*
4. *There will be an overall ceiling for each Section / Part that is equivalent to the maximum weightage of the Section / Part.*

Part A

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

1. What is confidence interval ?
2. Define Hypothesis.
3. What is non-parametric test ?
4. What is partial Correlation ?
5. What is point estimation ?
6. Define Chi-square.
7. Briefly explain the uses of MS Excel in quantitative methods.

(4 × 2 = 8 weightage)

Turn over

Part B

Answer any four questions.

Each question carries 3 weightage.

8. If the probability of defective bolts is 0.1, find the mean and standard deviation for the distribution of defective bolts in a total of 500.

9. On an average 1 house in 1,000 in a certain district has a fire during a year. If there are 2,000 houses in that district, what is the probability that exactly five houses will have a fire during the year ?

10. A person throws 10 dice 500 times and obtains 2580 times 4, 5 or 6. Can this be attributed to fluctuations of sampling ?

11. Two samples of 100 electric bulbs each has a means 1500 and 1550, standard deviations 50 and 60. Can it be concluded that two brands differ significantly at 1 % level of significance ?

12. In a sample of 8 observations, the sum of squared deviations of items from the mean was 102.6. In another sample of 10 observations, the value was found to be 102.8. Test whether the difference is significant at 5 % level.

You are given that at 5 % level of significance, critical value of F for $v_1 = 7$ and $v_2 = 9$ degrees of freedom is 3.29 and for $v_1 = 8$ and $v_2 = 10$ degrees of freedom, its value is 3.07.

13. In an anti-malarial campaign in a certain area, quinine was administered to 812 persons out of a total population of 3248. The number of fever cases is shown below :

Treatment		*Fever*	*No fever*	*Total*
Quinine	...	20	792	812
No quinine	...	220	2216	2436
Total	...	240	3008	3248

Discuss the usefulness of quinine in checking malaria.

14. Given $\sum dx = 0$; $\sum dx^2 = 776$; $\sum dy = 0$; $\sum dy^2 = 550$; and $\sum dxdy = 280$; $n = 5$.

Calculate Karl Pearson's co-efficient of correlation.

(4 × 3 = 12 weightage)

Part C

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

15. The following data show the number of seeds germinating out of 5 lb damp filter for 80 sets of seeds. Fit a binomial distribution of this data and find the expected frequencies.

X	:	0	1	2	3	4	5
Y	:	6	20	28	12	8	6

16. The demand for a particular spare part in a factory was found to vary from day to day. In a sample study, the following information was obtained :

Days	:	*Monday*	*Tuesday*	*Wednesday*	*Thursday*	*Friday*	*Saturday*
No. Parts demanded	:	1.124	1.125	1.110	1.120	1.126	1.115

Test the hypothesis that the number of parts demanded does not depend on the day of the week. (The table value of Chi-square for 5 d.f. and 5% level of significance is 11.07).

17. For 17 observations on price (x) and supply (y), the following data were obtained in appropriate units. $\sum x = 544$; $\sum x^2 = 19040$; $\sum y = 244$; $\sum y^2 = 3773$; $\sum xy = 8413$, obtain the two regression lines. What is the supply when price is Rs. 35 ?

18. Explain the Properties of Normal Distribution.

(2 × 5 = 10 weightage)