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TM242681Q

Reg. No :.....

Name :.....

MASTER'S DEGREE (C.S.S) EXAMINATION, MARCH 2024

2023 ADMISSIONS REGULAR

SEMESTER II - CORE COURSE M. Com.

CO2C09TM20 - Quantitative Techniques

Time : 3 Hours **Maximum Weight : 30**

Part A

I. Answer any Eight questions. Each question carries 1 weight **(8x1=8)**

1. Discuss the properties of Binomial Distribution.
2. A university has to select an examiner from a list of 50 persons, 20 of them are women and 30 men. 10 of them know Hindi and 40 do not, 15 of them are teachers, and the remaining are not. What is the probability of the university selecting a Hindi knowing Woman Teacher?
3. Explain the uses of t- distribution.
4. Explain two types of hypothesis.
5. Explain steps for One Way Classification.
6. Explain a) Mean Charts b) Range charts.
7. Write short notes on consumer's risk
8. Explain product control.
9. Explain Metric data or variable.
10. Infer the meaning of multivariate analysis.

Part B

II. Answer any Six questions. Each question carries 2 weight **(6x2=12)**

11. The scores of students in a test follows normal distribution with mean 80 and standard deviation 15. A sample of 1000 students as been drawn from the population. Find a) Appropriate number of students who scores between 65 and 95. b) The probability that randomly chosen students has scored greater than 100.
12. Mention 4 uses of Normal Distribution.
13. On inspection of a random sample of 500 items produced by a machine,30 are found to be defective. Does this justify the assumption that the machine is producing 2 % defective items on average?
14. It is claimed that a random sample of 100 tyres with a mean life of 15269 km is drawn from a population of tyres that has a mean life of 15200 km and SD of 1248 km. Test the validity of the claim.
15. The following table gives data regarding the election of candidates to an office.

	Economic Status		
Attitude towards election	Rich	Poor	Total
Favourable	50	155	205
Not Favourable	90	110	200
Total	140	265	405

16. Test whether son's eye colour and Father's eye colour are associated with the helpof the data given below.

	Son's eye colour	
Father's eye colour	Not Light	Light
Not Light	230	148
Light	151	471

17. Mention the different aims of Statistical Quality Control.
18. Explain advantages and disadvantages of Factor Analysis

Part C

III. Answer any Two questions. Each question carries 5 weight **(2x5=10)**

19. Solve the following 1) P (-1.78 < Z < 1.78) 2) P(1.52 < Z < 2.01) 3) P(-1.52 < Z < -.75) 4) P (Z > 1.8) 5) P(Z< -1.5).
20. The following data relate to the yield of four varieties of wheat each sown, on 5 plots. Find whether there is a significant difference between the mean yield of these varieties

Plot / Varieties	A	B	C	D
I	99	103	109	104
II	101	102	103	100
III	103	100	107	103
IV	99	105	97	107
V	98	95	99	106

21. In a sample study about the tea habit in two towns following data was observed in a sample of size 100 each, Town A: 51% persons were male,31% were tea drinkers and 19 % were male tea drinkers. Town B: 46% were male, 26% were tea drinkers and 17 % were male tea drinkers. Is there any association between sex and tea habits? If so, in which town it is greater?
22. Explain the uses of statistical control and briefly explain its techniques.