19002608

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Reg. No.....

Name.....

M.Com. DEGREE (C.S.S.) EXAMINATION, OCTOBER 2019

First Semester

Faculty of Commerce

QT 01 C05—QUANTITATIVE TECHNIQUES

(2012—2018 Admissions)

Time : Three Hours Maximum Weight : 30

Section A

Answer any **five** *questions.*
Each answer not to exceed **a page**.
Each question carries 1 *weight.*

1. What is x-chart ?
2. What is co-efficient of Collignation ?
3. What is Run test ?
4. When and for what purpose 't' test is used ?
5. What is standard error ? What are its uses ?
6. What are the properties of a standard normal curve ?
7. What is ANOVA ?
8. What are the limitations of quantitative technique ?

(5 × 1 = 5)

Section B

Answer any **five** *questions.*
Each answer not to exceed **two pages**.
Each question carries 2 weight.

9. Explain the application of Quantitative Techniques in business.
10. Explain the objectives and uses of statistical quality control.

Turn over

11. Explain the Latin square technique.

12. The overall percentage of failure in a certain examination is 40, what is the probability that out of a group of 6 candidates atleast 4 passed examination ?

13. In 120 throws of a six faced die, the even numbers occur 55 times. Is the die unbiased ?

14. The standard deviation of two samples of sizes 10 and 14 from two normal populations are 3.5 and 3.0 respectively. Examine whether the standard deviations of the populations are equal. (F test)

15. A random sample of 200 villages was taken from district A and average population per village was 485 with S.D. 50. another random sample of 250 villages from the same district gave an average population of 510 per village with S.D. of 40. Is the difference between the averages of the two samples statistically significant ?

16. If $n_1 = 25$ and $n_2 = 32$, $r_1 = 0.78$ and $r_2 = 0.88$, test whether the values r_1 and r_2 significantly different ?

$(5 \times 2 = 10)$

Section C

Answer any **three** *questions.*
Each answer not to exceed **five pages**.
Each question carries 5 *weight.*

17. Eight coins were tossed 256 times. The results obtained are given below. Test whether the coins are unbiased using Chi-square test.

No. of heads	:	0	1	2	3	4	5	6	7	8
Frequency	:	2	10	25	50	75	58	21	9	6

18. There are two samples. First contains the observations (54, 39, 70, 58,47,40, 74,49, 74,75, 61 and 79). The second contains (45, 41, 62, 53, 33, 45, 71, 42, 68, 73, 54 and 73). Apply Rank sum test to test at 5% level of the hypothesis that they come from populations with the same mean.

19. Electric bulbs manufactured by X and Y companies gave the following result :

		X *Company*	Y *Company*
No. of bulbs used	...	100	100
Mean life in hours	...	1300	1248
Standard deviation	...	82	93

Using standard error of the difference between mean, State whether there is any significant difference in the life of the two makes.

20. Draw a suitable control chart for the following data pertaining to the number of foreign coloured threads (considered as defects) in 15 pieces of cloth of 2 m. × 2 m. in a certain make of synthetic fibre and state your conclusions.

21. Explain the different methods used for testing of hypothesis.

22. What do you mean by hypothetical errors? Explain the steps involved in the testing of Hypothesis.

(3 × 5 = 15)