**F 5631**

Reg. No.....................,.........

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# M.Com. DEGREE (C.S.S.) EXAMINATION, FEBRUARY 2016

### First Semester

### Faculty of Commerce

### QT 01 C05 – QUANTITATIVE TECHNIQUES

### (2012 Admission onwards)

Time : Three Hours

Maximum Weight : 30

## Section A

*Answer any* **five** *questions.*

*Each question carries 1 weight.*

*Each answer not to exceed* **a page.**

1. What are main features of normal distribution.

2. Define the term statistic and parameter.

3. Write down the confidence interval for the mean $\sigma$ is known.

4. What is Yule's coefficient of association.

5. How will you construct X bar chart?

6. Explain sign test.

7. Define the term standard error. Write down the standard error of sample mean.

8. When will you use $p$ chart?

$$(5 \times 1 = 5)$$

## Section B

*Answer any* **five** *questions.*

*Each question carries 2 weight.*

*Each answer not to exceed* **two pages.**

9. Write down any *five* properties of Normal distribution.

10. Distinguish between point estimate and interval estimate.

11. In a cross between red flowered and white flowered plants it was found that of the 452 flowers obtained 119 were white and rest red. Is this consistent with the hypothesis that red and white flowers are in the ratio 3:1?

12. A daily sample of 30 items was taken over a period of 14 days in order to establish attributes control chart. If 21 defectives were found, what should be the upper and lower control limits of the proportion of defectives?

**Turn over**

13. What are the merits and limitations of quantitative techniques?

14. The mean IQ of a large number of children of age 14 was 100 and the s.d 16. Assuming Normal distribution find (a) what percentage of children has IQ under 70 ; (b) What are the limits of IQ of the middle 50% of the children?

15. Random samples drawn from two countries gave the following data relating to the heights of adult males.

|  | Country A | Country B |
|---|---|---|
| Mean Height (inches) | 67.4 | 67.25 |
| Standard deviation | 2.58 | 2.50 |
| Sample size | 1,000 | 1,200 |

Is the difference between the means significant?

16. Explain one way Analysis of variance techniques.

(5 × 2 = 10)

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

17. The following table show the association among 1,000 school boys of their general ability (GA) and their Mathematical Ability (MA) :

| MA/GA | Good | Fair | Poor | Total |
|---|---|---|---|---|
| Good | 44 | 22 | 4 | 70 |
| Fair | 265 | 257 | 178 | 700 |
| Poor | 41 | 91 | 98 | 230 |
| Total | 350 | 370 | 280 | 1000 |

18. 18.Manures A,B, and C are applied to 4 plots each in 12 identical plots in which the same variety of wheat was cultivated .The following table gives the yield per plot in quintals. Test whether the manures have significantly different effects 5% level :

| A | 8 | 4 | 6 | 7 |
|---|---|---|---|---|
| B | 7 | 5 | 5 | 3 |
| C | 2 | 5 | 4 | 4 |

19. Explain different non-parametric methods of testing of hypothesis.

20. Explain how will you construct (i) R chart ; (ii) *p* chart ; (iii) C chart.

21. 100 ladies were chosen at random from the inhabitants of Bombay city and 550 were found to have dark eyes. Does this findings contradict the hypothesis that the event of a lady having dark eyes has probability 0.5.

22. Explain the role of quantitative techniques in the field of business and industry. Give examples in support of your answer.

(3 × 5 = 15)