

M.Com. DEGREE (C.S.S.) EXAMINATION, JANUARY/FEBRUARY 2017**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.**Answer not to exceed one page each.*

1. What is binomial distribution ?
2. Explain Type 1 error.
3. What are features of Z-test ?
4. Briefly explain significance of correlation coefficient.
5. Define R-chart.
6. What 2-way anova signifies ?
7. Explain Yules coefficient of association.
8. Explain two-tailed and one-tailed test.

(5 × 1 = 5)**Section B***Answer any five questions.**Answer not to exceed two pages each.*

9. Explain Hypothesis, types of hypothesis and its testing.
10. Define in detail sampling theory.
11. Differentiate between Standard deviation and Standard error.
12. It is claimed that a random sample of 100 tyres with a mean life of 15269 km. is drawn from a population of tyres which has a mean life of 15200 km. and SD of 1248 km. Test validity of claim.
13. The mean yield of wheat from a district A was 210 Lbs with standard deviation of 10 Lbs per acre from a sample of 100 plots. In another district B, the mean yield was 200 Lbs, standard deviation is 12 Lbs from a sample of 150 plots. Assuming that the standard deviation of yield in the entire state was 11 Lbs, test whether there is any significant difference between the mean yield of the crops in the two districts.

Turn over

14. A sample analysis of an examination result of 200 students were made. It was found that 46 failed, 68 secured third class 62 second class and remaining in first class. Are these figures in commensurate with the general examination result which is in ratio 2 : 3 : 3 : 2 for various categories ?
15. Test whether son's eye colour and father's eye colour are associated with the help of data given below :

Father's eye colour	Eye colour of son	
	Dark	Light
Dark	230	148
Light	151	471

16. The standard deviation of two samples of sizes 10 and 14 from two normal population are 3.5 and 3.0 respectively. Examine whether the standard deviation of the population are equal.

(5 × 2 = 10)

Section C

*Answer any three questions.
Answer not to exceed five pages each.*

17. Three varieties of a crop was grown on 4 plots of land and the following results were obtained. Prepare an analysis of variance table and find out whether there is significance of difference between the three crops :

Types of crop	Yield, (Plot numbers)			
	I	II	III	IV
A	15	10	16	11
B	16	14	12	14
C	12	18	20	10

18. The following table gives the number of units produced per day by 2 workers A and B for a number of days :

A : 40 30 38 41 38 35
B : 39 38 41 33 32 39 40 34

Should these results be accepted as evidence that the two workers are equally stable by application of F test ?

19. The per acre yield of a crop in a particular area is observed to follow a normal distribution with mean 15 quintals and S.D. of 5 quintals. Find,
- The proportion of the area yielding at least 25 quintals.
 - What extent of the land under the crop can yield between 10 and 20 quintals if the total land under crop is 782 acres ?

20. From the adult population of four large cities, random samples were selected and the number of married and unmarried men were recorded :

	Cities			
	A	B	C	D
Married ...	137	164	152	147
Single ...	32	57	56	35

Is there significant variation among the cities in the tendency of men to marry ?

21. Explain in detail the effective use of SQC.
22. How Quantitative Technique can be used to effectively design a product, price it and launch it ?

(3 × 5 = 15)