M COM DEGREE END SEMESTER EXAMINATIONS NOVEMBER - 2015

SEMESTER: 1, SUBJECT- COMMERCE

COURSE: P1COMT05 – QUANTITATIVE TECHNIQUES

Time: Three Hours.   Maximum Marks: 75

Section A

*(Answer **all** questions. Each question carries **2** marks.)*

1. What are sampling errors?
2. Define type I and type II errors
3. State any four properties of normal distribution.
4. What is use of Mann Whitney U test?
5. What is R chart?
6. What you mean by F test?
7. Give three applications of student t test
8. What is Z transformation?
9. What are the uses of chi-square test?
10. Distinguish between statistic and parameter

$(2 \times 10 = 20)$

Section B

*(Answer any **five** questions. Each question carries **5** marks)*

11. Briefly explain the different steps involved in testing of hypothesis

12. In a sample of 400 parts manufactured by a factory, the number of defective parts was found to be 30. The company however claimed that only 5% of their product is defective. Is the claim tenable?

13. In a distribution exactly normal, 7% of the items are under 35 and 89% are under 63. What is the mean and standard deviation of the distribution?

14. A random sample of size 100 has mean 45 and SD 15. Find the range with in which the population mean may lie at 99% confidence level.

15. During the examination of equal length of cloth, the following are the number of defects observed 3, 5, 4, 1, 6, 5, 6, 4, 2, 1. Draw control chart for the number of defects and comment whether the process is under control or not?

16. Out of 3000 unskilled workers of a factory, 2000 come from rural areas and out of 1200 skilled workers, 300 come from rural areas. Determine the association between skill and residence by the method of proportions.

17. Explain the uses of Quantitative Techniques in business and industry.

18. What are the advantages of non parametric test?

$(5 \times 5 = 25)$

(PTO)

Section C

*(Answer any **two** questions. Each question carries **15** marks.)*

19. Explain the techniques of statistical quality control.

20. Two types of batteries were tested for their length of life and the following data are obtained.

	No. of samples	Mean life in hours	Variance
Type A	9	600	121
Type B	8	400	144

Is there significant difference in the two means? Use 5% level of significance

21. The following table gives monthly sales (in thousand rupees) of a certain firm in three States by its four salesmen:

States	Salesmen			
	I	II	III	IV
A	6	5	3	8
B	8	9	6	5
C	10	7	8	7

Set up the analysis of variance and test whether there is any significant difference (i) between sales by the salesmen, and (ii) between sales in the three States.

22. Apply suitable test to examine whether inoculation is effective

	Attacked	Not attacked
Inoculated	30	670
Not inoculated	70	230

(15 x 2 = 30)

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