Reg. No..... Name .....

M. COM. DEGREE END SEMESTER EXAMINATION NOVEMBER 2016

SEMESTER **– 1: COMMERCE**

COURSE: **16P1COMT05 –: QUANTITATIVE TECHNIQUES**

Time: Three Hours Max. Marks: 75

SECTION A

ANSWER **ANY *TEN*** QUESTIONS. EACH CARRIES **TWO** MARKS

1. What do you mean by stratified sampling?
2. What is the probability that a leap year selected at random will have 53 Sundays?
3. Distinguish between discrete and continuous random variable?
4. What do you mean by inferential analysis?
5. What is standard error? Enumerate its utility.
6. Define null and alternative hypothesis?
7. Examine the properties of binomial distribution.
8. What do you mean by non-parametric tests?
9. What do you mean by degrees of freedom?
10. What is ANOVA?
11. What is the significance of 'p' value in hypothesis testing?
12. What do you mean by 'critical region'? (2 × 10 = 20)

SECTION B

ANSWER **ANY *FIVE*** QUESTIONS.EACH QUESTION CARRIES **FIVE** MARKS.

13. What is meant by Association of Attributes? Explain any one method used for studying association between attributes?
14. A study of 200 patients who have been administered a drug against a disease reveals the following information.

	Affected	Not affected	Total
Immunised	40	35	75

Not immunised	40	85	125
Total	80	120	200

Is the drug effective? Test at 5% level of significance.

15. A class consists of 80 students. 25 of them are girls and 55 boys, 10 of them are rich and the remaining poor, 20 of them are fair complexioned. What is the probability of selecting a fair complexioned rich girl?
16. In a town 10 accidents take place in a span of 50 days. Assuming that the number of accidents follow the Poisson distribution, find the probability that there will be 3 or more accidents in a day.
17. A random sample of 100 workers at Ahmedabad showed their mean wage to be Rs.350 with a standard deviation of Rs. 28. Another random sample of 150 workers in Kochi showed the mean wage to be Rs.390 with a standard deviation of Rs.40.Do the mean wages of workers in Ahmedabad and Kochi differ significantly? Use 5% level of significance.
18. Out of 320 families with five children each, what percentage would be expected to have at least one boy? Assume equal probability for boy and girl.
19. To study the correlation between the stature of father and the stature of son, a sample of 1600 is taken from the universe of fathers and sons. The sample study gives the correlation between the two to be 0.80. Within what limits does it hold true for the universe?
20. Write a note on Bayesian theorem of probability. (5 x 5 = 25)

SECTION C

ANSWER **ANY THREE** QUESTIONS. EACH QUESTION CARRIES 10 MARKS

21. Explain Kruskkal Wallis test and its applications.
22. What are the properties of a normal distribution? Discuss briefly the importance of normal distribution in statistical theory and its applications.
23. A sales tax officer has reported the average sales of the 500 firms that he is dealing with during a year amounted to Rs. 72000 with a standard deviation of Rs.20,000.Assuming that the sales in these firms are normally distributed, find out the:
    a) Number of firms whose sales are above Rs.80,000
    b) The percentage of firms whose sales are likely to range between Rs.60,000 and Rs.80,000.

24.The following data show the marks scored by a group of students before and after providing

special coaching on the subject 'Quantiitave Techniques'.

Sl. No. of students	1	2	3	4	5	6	7	8	9	10
Marks before special Coaching	15	17	12	18	16	13	15	17	19	18
Marks After Special Coaching	20	19	18	22	20	19	21	23	24	24

Test, at 5% level of significance, whether special coaching has any effect on marks scored by the students.

25. The following table gives the number of Televisions sold by four salesmen in three months in 2016.

Month	Salesmen			
	1	2	3	4
April	50	40	48	39
May	46	48	50	45
June	39	44	40	39

Is there significant difference in sales made by four salesmen? Test at 5% level of significance

(10 x 3 = 30)

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