G 7786 (Pages : 2) Reg. No...25269...............

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M.Com. DEGREE EXAMINATION, JUNE 2011

First Semester

Faculty of Commerce

Paper IV—QUANTITATIVE TECHNIQUES

(For First Semester Private candidates only)

Time : Three Hours   Maximum : 75 Marks

Use of ordinary calculators and Statistical tables permitted.

Section A

Answer all questions.
Each question carries 2 marks.
Each answer not to exceed half a page.

1. Give two business applications of probability theory.

2. Dsitinguish between "Sample space" and "Sample point".

3. What is hypothesis testing ?

4. Explain "Stratified Random Sampling".

5. Define "Poisson Probability Distribution".

6. Distinguish between Dependent events and Independent events.

7. Give two assumptions of ANOVA.

8. Explain with examples the term "Standard Error".

9. Define "Bayes Theorem".

10. What is Chi-Square test ? Give its uses.

$(10 \times 2 = 20 \text{ marks})$

Section B

Answer any five questions.
Each question carries 5 marks.
Each answer not to exceed one page.

11. Give the relative frequency definition of probability. What are its limitations ?

12. Why is sampling necessary in statistical investigations ?

13. Is there any difference between the mean and the expected value of a random variable ? Explain.

14. Explain the steps in one-way analysis of variance.

15. Find the mean and standard deviation of marks in an examination where 44 percent of candidates obtained marks below 55 and 16 percent got above 80 marks, assuming normal distribution.

16. A speaks truth in 70 percent cases and B in 85 % cases. In what percentage of cases they are likely to contradict each other in stating the same fact ?

Turn over

17. Out of 600 families with 5 children each, how many would be expected to have (a) 2 boys and 3 girls ;(b) At least a boy ; (c) No girls.

18. Between 10 A.M. and 12 Noon, the average number of telephone calls coming into the swtich board per minute is 2. Find the probability that during a particular minute there will be (a) No calls at all ; (b) Exactly 2 calls.

$(5 \times 5 = 25 \text{ marks})$

Section C

Answer any **one** *question.*
The question carries 10 marks.
Answer not to exceed **three** *pages.*

19. Define Normal distribution. What are its characteristics ?

20. State briefly the steps involved in Hypothesis testing.

$(1 \times 10 = 10 \text{ marks})$

Section D

Answer any **one** *question.*
The question carries 20 marks.
Answer not to exceed **five** *pages.*

21. The following data show the number of claims processed per day for a group of four insurance company employees observed for a number of days. Test the hypothesis that the employees mean claims per day are all the same. Use the .05 level of significance.

Employee 1	...	15	17	14	12	
Employee 2	...	12	10	13	17	
Employee 3	...	11	14	13	15	12
Employee 4	...	13	12	12	14	10	?

22. In a diet survey the following results were found in two Indian cities :

No. of families		Bombay	Calcutta
Taking tea	...	1236	164
Not taking tea	...	564	36

Discuss whether there is any significant differences between two cities in the habit of tea taking.

$(1 \times 20 = 20 \text{ marks})$