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Reg. No. :

Name :

Second Semester M.Com. Degree Examination, September 2024

CO 223 – QUANTITATIVE TECHNIQUES AND FINANCIAL ECONOMETRICS

(2018 Admission Onwards)

Time : 3 Hours

Max. Marks : 75

SECTION – A

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

1. What is mutually exclusive events?
2. Define Central Limit Theorem.
3. What do you mean by Beta Distribution?
4. What is Standard Deviation?
5. Define White Noise.
6. State Ramsey Reset Test.
7. What is panel data?
8. What is Durbin Watson Statistics?
9. Give steps to create histogram in SPSS.
10. What is Multivariate Analysis?

(10 × 2 = 20 Marks)

SECTION – B

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

11. State Poisson distribution and its properties.
12. Describe various events used in Probability Theory.

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13. Explain the significance of correlation analysis.
14. Describe seven classical assumptions of OLS regression method.
15. The incidence of occupational disease in an industry is such that the workers have 20 per cent chance of suffering from it. What is the probability that out of six workers 4 or more will come in contact of the disease?
16. Suppose a life insurance company insures the lives of 5000 persons aged 42. If studies show the probability that any 42-years old person will die in a given year to be 0.001, find the probability that the company will have to pay at least two claims during a given year $e^{-5} = 0.0067$.
17. A sample of 900 items has mean 3.4 and standard deviation 2.61. Can the sample be regarded as drawn from a population with mean 3.25 at 5% level of significance?
18. Suppose, a computer has found, for a given set of values of variables x_1, x_2 and x_3 the correlation coefficients are: $r_{12} = 0.91$, $r_{13} = 0.33$, and $r_{23} = 0.81$. Explain whether these computations may be said to be free from errors.

(5 × 5 = 25 Marks)

SECTION – C

Answer any **two** of the following questions. **Each** question carries **15** marks.

19. Explain the fitting of a binomial distribution and a Poisson distribution.
20. An instructor of mathematics wishes to determine the relationship of grades on the final examination to grades on two quizzes given during the semester. Let x_1, x_2 and x_3 be the grades of a student on the first quiz, second quiz, and final examination respectively. The instructor made the following computations for a total of 120 students:

$$\begin{array}{lll} \bar{x}_1 = 6.80 & \bar{x}_2 = 0.70 & \bar{x}_3 = 74.00 \\ s_1 = 1.00 & s_2 = 0.80 & s_3 = 09.00 \\ r_{12} = 0.60 & r_{13} = 0.70 & r_{23} = 00.65 \end{array}$$

- (a) Find the least-squares regression equation of x_3 on x_1 and x_2 .
- (b) Estimate the final grades of two students who scored respectively 9 and 7 and 4 and 8 marks in the two quizzes.



21. The following table gives the number of refrigerators sold by four salesmen in three months May, June and July:

Month	Salesman			
	A	B	C	D
May	50	40	48	39
June	46	48	50	45
July	39	44	40	39

Is there a significant difference in the sales made by the four salesmen? Is there a significant difference in the sales made during different months?

22. Elaborate the different econometric models.

(2 × 15 = 30 Marks)

