M. COM DEGREE END SEMESTER EXAMINATION - OCTOBER 2025
SEMESTER 3 : COMMERCE
COURSE : **24P3COMT15 : ECONOMETRICS FOR FINANCE**
(For Regular - 2024 Admission)

Time : Three Hours   Max. Weights: 30

PART A
Answer any 8 questions   **Weight: 1**

1. Differentiate statistic and parameter   (U)
2. Define standard error. Give an example   (U)
3. What is pure serial correlation?   (U)
4. Write down the joint probability density funtion of X and Y, where X is the number of heads and Y is the number of tails among the first two coins when three coins are tossed at a time.   (A)
5. What is panel data?   (U)
6. What is BLUE estimator?   (U)
7. What is Dickey Fuller Test?   (U)
8. Define covariance between two random variables X and Y. Give the expression of covariance of a random variable in terms of expectation of random variable. What is the value of covariance between two random variables which are independent.   (A)
9. What is time series data?   (U)
10. Differentiate biased and unbiased estimator.   (U)

(1 x 8 = 8)

PART B
Answer any 6 questions   **Weights: 2**

11. Differentiate between stochastic and non stochastic models.   (E)
12. What are the properties of normal distribution?   (An)
13. Explain ARIMA model   (An)
14. Briefly explain the methodology of econometrics.   (An)
15. Explain the different types of serial correlation giving suitable examples for each   (An)
16. Briefly explain the Gauss Markov Theorem   (An)
17. Calculate the value of R^2 from the following information available in a data sheet: (A)

    $n = 10$, $\sum X_i = 596$, $\sum Y_i = 88$, $\sum X_i Y_i = 5325$, $\sum X_i^2 = 35916$, $\sum Y_i^2 = 5900$.

18. Evaluate whether the following can be the probability density function of a random variable. If not why?   (A)

X:	1	2	3	4	5	6	7	8	9	10
f(x)	4a	12a	18a	26a	30a	-25a	21a	15a	10a	5a

(2 x 6 = 12)

PART C
Answer any 2 questions   **Weights: 5**

19. Briefly explain the use and reasons for inclusion of stochastic error term in econometric models.   (E)

20. What are the assumptions of a classical linear regression model? Briefly explain the consequences of violation of the assumptions.   (E)

21. The joint probability density function of two random variables X and Y is

X/Y	0	1	2
0	0.2	0.1	0.3
1	0.1	0.2	0.1

(a) Find E(X) and E(Y)
(b) Find V (X) and V (Y)
(c) Find conditional distribution of X given Y = 1
(d) Find conditional distribution of Y given X = 0
(e) Check whether X and Y are independent   (A)

22. Obtain the OLS estimates of the parameters of the model $Y_i = b_0 + b_1 X_i + U_i$ and show that they are unbiased.   (A)

                                                     (5 x 2 = 10)

OBE: Questions to Course Outcome Mapping

CO	Course Outcome Description	CL	Questions	Total Wt.

Cognitive Level (CL): Cr - CREATE; E - EVALUATE; An - ANALYZE; A - APPLY; U - UNDERSTAND; R - REMEMBER;