M A DEGREE (CSS) EXAMINATION , APRIL 2024

Second Semester

MA ECONOMETRICS

CORE - EM010205 - UNIVARIATE TIME SERIES ECONOMETRICS

2019 Admission Onwards

844F495A

Time: 3 Hours

Weightage: 30

Part A (Short Answer Questions)

*Answer any **eight** questions.*

*Weight **1** each.*

1. Explain the penalty parameter found in the minimization problem of the HP filter.

2. What is Kalman filter?

3. Define the concept of Stationarity.

4. Define Stochastic trend.

5. How does ADF-GLS unit root test dominate DF test?

6. Define white noise process.

7. Compare ARIMA and ARFIMA.

8. Forecasting errors increase rapidly if we go too far out in the future. Comment.

9. Write any two advantages of GARCH MODELS.

10. What are kinked exponential growth rates?

(8×1=8 weightage)

Part B (Short Essay/Problems)

*Answer any **six** questions.*

*Weight **2** each.*

11. Explain Watson decomposition.

12. How are seasonal indices used in seasonal adjustment? Explain.

13. Breifly explain the concept of Integrated stochastic Process with its properties.

14. Analyse the variance ratio test.

15. State wold decomposition theorem and its application.

16. What do you mean by losses in the context of forecast optimatility? Explain any one of the loss function.

17. Explain combining forecast.

18. Explain endogenous and exogenous breaks.

<div align="right">(6×2=12 weightage)</div>

Part C (Essay Type Questions)

*Answer any **two** questions.*

*Weight **5** each.*

19. Consider the quarterly electricity production for years 1 to 4:

	Year 1	Year 2	Year 3	Year 4
Quarter 1	99	120	139	160
Quarter 2	88	108	127	148
Quarter 3	93	111	131	150
Quarter 4	111	130	152	170

Using a classical additive decomposition, calculate the seasonal component.

20. Give an insight to Nonstationary stochastic process in reference with Random walk Models.

21. What is a nonstationary stochastic process? Evaluate its distinction with stationary stochastic process. Explain random walk models with examples.

22. Evaluate ARCH Model.

<div align="right">(2×5=10 weightage)</div>