



QP CODE: 25047474



25047474

Reg No :

Name :

M.Sc DEGREE (CSS) EXAMINATION, NOVEMBER 2025

Third Semester

M Sc STATISTICS

Core Course - ST500304 - TIME SERIES ANALYSIS

M.Sc STATISTICS, M.Sc STATISTICS(Applied), M.Sc STATISTICS WITH DATA SCIENCE

2019 ADMISSION ONWARDS

71AC8DA2

Time: 3 Hours

Weightage: 30

Part A (Short Answer Questions)

*Answer any **eight** questions.*

Weight 1 each.

1. What do you mean by seasonal variations?. Explain with example.
2. How to identify seasonality in a time series data?
3. Explain equal weight moving average method when the period is odd.
4. Describe simple moving average method of forecasting.
5. Define Box- Jenkin's model.
6. What do you mean by Autoregressive model?
7. What do you mean by Auto Regressive Integrated Moving Average model?
8. Define MA process.
9. Explain forecasting using ARIMA models.
10. Define spectral density.

(8×1=8 weightage)

Part B (Short Essay/Problems)

*Answer any **six** questions.*

Weight 2 each.

11. What is Durbin- Watson test?
12. Describe auto covariance function and auto correlation function with their properties.
13. Explain partial auto correlation function and its properties.
14. Explain Auto Regressive Moving Average model.





15. Write a note on estimation of ARMA models and explain about Yule Walker estimation.
16. Describe conditional least square estimation of ARMA(p,q) model.
17. Explain Seasonal ARIMA models.
18. Define ARCH model and explain the properties of ARCH(q) process.

(6×2=12 weightage)

Part C (Essay Type Questions)

*Answer any **two** questions.*

Weight 5 each.

19. Explain (i) Holt's exponential smoothing (ii) Holt-Winter's forecasting.
20. (i) Describe white noise (ii) Explain wold representation of linear stationary processes.(ii) Explain stationary process with examples.
21. Explain autocorrelation of residuals and Ljung test.
22. Derive the spectral densities of an AR and MA processes.

(2×5=10 weightage)

