

[LF 1014]

OCTOBER 2014

Sub. Code: 2866

**M.Sc., NON-MEDICAL DEGREE EXAMINATION
SECOND YEAR
(New Regulation)
BRANCH II - BIOSTATISTICS
PAPER II – APPLIED MULTIVARIATE ANALYSIS AND TIME
SERIES ANALYSIS**

Q.P. Code : 282866

Time : Three hours

Maximum : 100 marks

I. Elaborate on :

(2 x 20 = 40)

1. Explain in detail the difference between factor analysis and principal component analysis. Explain multiple classification analysis.
2. How would you differentiate between multiple discriminant analyses, regression analyses and logistic regression analysis?

II. Write notes on:

(10 x 6 = 60)

1. What is Recursive Path Analysis? Explain with an Example.
2. Discuss the implication of Time series analysis with specific examples in epidemiological research.
3. Explain the use of Autocorrelation function (ACF) and Partial Autocorrelation function (PACF) plots in determining the parameters of AR and MA models.
4. What is multi-collinearity?
5. Write a critical note on Path analyses.
6. Explain the uses of Correlogram and Differencing in time series analyses and it's need.
7. What is Dendrogram graph? What inference you will get from that?
8. What guidelines can be used to determine the number of factors to extract in factor analysis? Explain each of the briefly.
9. Why we need for transformation in time series analysis?
10. Explain the nature and need for trend analysis of time series in epidemic studies.

[LH 0415]

OCTOBER 2015

Sub. Code: 2866

**M.Sc., NON – MEDICAL DEGREE COURSES
BRANCH II - BIOSTATISTICS
SECOND YEAR
PAPER II – APPLIED MULTIVARIATE ANALYSIS AND TIME SERIES
ANALYSIS**

Q.P. Code: 282866

Time: Three hours

Maximum: 100 marks

I. Elaborate on:

(2 x 20 = 40)

1. What are the hierarchical clustering methods?
2. Explain factor analysis.

II. Write notes on:

(10 x 6 = 60)

1. Autocorrelation and Partial Autocorrelation function.
2. Stationary process in time series.
3. Objectives of time series analysis.
4. ARMA Model.
5. Auto regressive process of order p.
6. Characteristics of time series data.
7. Random walk process.
8. Canonical correlation.
9. Multiple linear regression analysis.
10. PATH analysis.

[LJ 1016]

OCTOBER 2016

Sub. Code: 2866

**M.Sc. BIOSTATISTICS EXAMS
SECOND YEAR
PAPER II – APPLIED MULTIVARIATE ANALYSIS AND TIME SERIES
ANALYSIS**

Q.P. Code: 282866

Time: Three hours

Maximum: 100 Marks

I. Elaborate on:

(2 x 20 = 40)

1. Explain the concept of principle component analysis and how does this procedure is used in your study?
2. Write down the minimum Excepted Cost of Misclassification (ECM) rule for assigning a new item to one of the two populations.

II. Write notes on:

(10 x 6 = 60)

1. Explain quadratic classification rule.
2. Write down any three similarity measures.
3. Describe the application of time series analysis through an epidemic example.
4. Explain the component of the time series.
5. When a process is said to be stationary?
6. Distinguish between collinearity and multicollinearity.
7. Distinguish between ARMA and ARIMA.
8. Describe the features of any two forecasting models.
9. Explain how moving average process can be used in epidemiology.
10. Write a critical note on Path analysis.

[LL 1017]

OCTOBER 2017

Sub. Code: 2866

**M.Sc. BIOSTATISTICS EXAMS
SECOND YEAR
PAPER II – APPLIED MULTIVARIATE ANALYSIS AND TIME
SERIES ANALYSIS**

Q.P. Code : 282866

Time : Three hours

Maximum : 100 Marks

I. Elaborate on:

(2 x 20 = 40)

1. Explain how discriminant analysis is used as a classification method.
2. Explain principal component analysis.

II. Write notes on:

(10 x 6 = 60)

1. Direct and indirect effects in path analysis.
2. Optimal discriminant function.
3. Canonical correlation.
4. Bayes' rule in discriminant analysis.
5. Exogenous and endogenous variables in path analysis.
6. Autocorrelation.
7. Demographic time series.
8. Deterministic and stochastic models.
9. Autoregressive processes.
10. Periodogram.

[LN 1018]

OCTOBER 2018

Sub. Code: 2866

M.Sc. BIOSTATISTICS EXAMS
SECOND YEAR
PAPER II – APPLIED MULTIVARIATE ANALYSIS AND TIME SERIES
ANALYSIS

Q.P. Code: 282866

Time: Three hours

Maximum: 100 Marks

I. Elaborate on:

(2 x 20 = 40)

1. Discriminant analysis and its application to epidemiology.
2. a) Autoregressive models.
b) Moving average method of forecasting.

II. Write notes on:

(10 x 6 = 60)

1. Expected cost of Misclassification rule.
2. Goodness of fit in factor analysis.
3. Difference between hierarchical and non-hierarchical cluster analysis.
4. Factors analysis.
5. Quadratic classification rule.
6. Trend and seasonal components of time series analysis.
7. Simple exponential smoothing in forecasting.
8. ARMA model.
9. Partial auto correlation function.
10. Multiplicative decomposition of time series data.

[LP 1019]

OCTOBER 2019

Sub. Code: 2866

M.Sc. BIOSTATISTICS EXAMS
SECOND YEAR
PAPER II – APPLIED MULTIVARIATE ANALYSIS AND TIME SERIES
ANALYSIS

Q.P. Code: 282866

Time: Three hours

Maximum: 100 Marks

I. Elaborate on:

(2 x 20 = 40)

1. Path analysis and its application to epidemiology.
2. Discuss the implication of Time series analysis with specific examples in epidemiological research.

II. Write notes on:

(10 x 6 = 60)

1. Uses of Auto Correlation Function (ACF) and Partial Auto Correlation Function (PACF) plots in determining the parameters of AR and MA models.
2. Uses of Correlogram and Differencing in time series analyses and it's need.
3. Need for transformation in time series analysis.
4. Stationary process in time series.
5. ARMA Model.
6. Difference between hierarchical and non-hierarchical analysis.
7. Quadratic classification rule.
8. Baye's rule in discriminant analysis.
9. Discriminant analysis.
10. Canonical correlation.
