M.Sc (BIOSTATISTICS) DEGREE EXAMINATION

SECOND YEAR

Paper IV – Optional – II – APPLIED MULTIVARIATE ANALYSIS AND BIOASSAY

Q.P. Code : 282858

Time : Three hours   **Maximum : 100 marks**

Answer All questions.

I. Essays: (2 X 20=40)

1. How would you differentiate among multiple discriminant analysis, regression analysis and analysis of variance?

2. What guideline can be used to determine the number factors to extract in factor analysis? Explain each of them briefly.

II. Write Short Notes on : (10X 6 = 60)

1. Dummy variable regression.

2. Hierarchical clustering.

3. Multiple classification method.

4. Assumptions underlying multivariate analysis.

5. Spearman karper and moving average method.

6. Comparison of relative potency.

7. Multicollinearity.

8. Coefficient of determination.

9. Direct assays.

10. Standard curve estimation.

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[KZ 1011]   **Sub. Code: 2858**

M.Sc NON-MEDICAL DEGREE EXAMINATION
SECOND YEAR
BRANCH II - BIOSTATISTICS
PAPER IV – OPTIONAL – II

APPLIED MULTIVARIATE ANALYSIS AND BIOASSAY

Q.P. Code : 282858

Time : 3 hours   **Maximum : 100 marks**
         (180 Min)
Answer ALL questions in the same order.

I. Elaborate on :	Pages (Max.)	Time (Max.)	Marks (Max.)
1. (i) Explain the problem of classification and discuss the method of asserting the correct classification. (ii) Explain the purpose of character analysis in what way this is different form classification.	17	40	20
2. (i) Outline Biological assays are arise and also give their practical importance. (ii) Explain Spearman. Karber and moving averages.	17	40	20

II. Write notes on :

	Pages	Time	Marks
1. Dummy variables in multiple regression.	4	10	6
2. Multicolinearity.	4	10	6
3. Path analysis.	4	10	6
4. Principal components.	4	10	6
5. Discriminant analysis.	4	10	6
6. Precision of estimates.	4	10	6
7. Standard slope estimation.	4	10	6
8. Quantal responses.	4	10	6
9. Logistic sigmoid.	4	10	6
10. Minimal chi-square test.	4	10	6

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        (180 Min)

Answer ALL questions in the same order.

I. Elaborate on :   **Pages Time Marks**
                                                           (Max.)(Max.)(Max.)

  1. Explain structural equation models using path diagram.   17   40   20

  2. Discuss the methods of dose response regression used in direct
     assays explaining the treatment for heterogencity of variances.   17   40   20

II. Write notes on :

  1. Discuss the purpose of biological assays.   4   10   6
  2. Discuss the precision of estimates in direct assays.   4   10   6
  3. Explain simultaneous trial estimation method of indirect assays. 4   10   6
  4. Describe the use of normal sigmoid for the tolerance distribution
     of quantal response.   4   10   6
  5. Explain standard curve and standard slope estimation methods in
     indirect assays.   4   10   6
  6. Discuss average and complete linkage clustering methods.   4   10   6
  7. Explain the use of dummy variables in multiple regression. 4   10   6
  8. Discuss the technique of residual analysis in multiple regression
     models.   4   10   6
  9. Explain serration and classification methods of discriminant
     analysis.   4   10   6
 10. Explain the principal component method of parameter estimation
     in factor analysis.   4   10   6

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