SHRIMATHI DEVKUNVAR NANALAL BHATT VAISHNAV COLLEGE FOR WOMEN
(AUTONOMOUS)
(Affiliated to the University of Madras and Re-accredited with 'A+' Grade by NAAC)
Chromepet, Chennai - 600 044.
M.Sc.Biostatistics - END SEMESTER EXAMINATIONS - NOV' 2024
SEMESTER - III

20PBSCT3007 - Applied Multivariate Analysis

Total Duration : 2 Hrs. 30 Mins. Total Marks : 60

Section B

Answer any **SIX** questions $(6 \times 5 = 30$ Marks)

1. Define Hotelling's T^2 statistic for two sample problem and state its hypothesis.
2. Briefly explain the types of rotation in factor analysis.
3. Distinguish between similarity and distance measure.
4. Describe the term misclassification and their types in classifying two populations.
5. What is the use of correspondence Analysis?
6. Classify and briefly explain any two Agglomerative Hierarchical clustering techniques used in clustering the objects.
7. Explain standards of good classification in Discriminant analysis.
8. Examine the need for Principal Component Analysis

Section C

I - Answer any **TWO** questions $(2 \times 10 = 20$ Marks)

9. Show that the relationship between the components and the original variables is

$\rho_{Yi,Xk} = \frac{e_{ik}\sqrt{\tau_i}}{\sqrt{\sigma_{kk}}}$ where i, k = 1,2,....P

10. Relate the procedure for testing the significance of canonical correlation and interpretation of canonical varaibles.
11. Justify the need for Fisher's linear discriminant function and obtain the decision rule of classification.
12. Examine the various distance measures used in cluster analysis.

II - Compulsory question $(1 \times 10 = 10$ Marks)

13. Apply likelihood ratio criterion method to test the hypothesis $H_0 : \mu = \mu 0$ against $H_1 : \mu \neq \mu 0$ based on a sample of size N drawn from $N_p\Big(\mu, \sum\Big)$

******