

M.Sc(Environmental Sci.) Semester - 1 (CBCS) Examination**JAN/FEB-2022****Statistics and Computational Application****Time: 1:30 Hours****Marks: 42****Instructions:**

1. Figures to the right indicate marks.
2. There are five questions in the question paper.
3. Answer any three of the following questions.

- Q.1** Answer the following (Any seven out of Ten, each of 02 marks) **14**
- (1) Calculate Mean, Mode, Median and Range from 3,5,7,7,9,11 data
 - (2) Write any two merits and demerits of the median
 - (3) What is difference between paired and unpaired student's t test?
 - (4) Write note on pie chart with suitable example
 - (5) What is difference between null hypothesis and alternative hypothesis?
 - (6) Define environment systems.
 - (7) What are the basic strategies for development environmental model?
 - (8) What are the applications of Microsoft office in environmental health?
 - (9) What are the popular web browser used for research?
 - (10) Define multivariate analysis?
- Q.2** Answer the following (Any two out of three, each of 07 marks) **14**
- (1) Describe any seven types of Graph with suitable example.
 - (2) Calculate the Coefficient of Variation (CV) for the following two sample data sets and give your interpretation from results.
 Group A 13, 21, 27, 31, 35, 24, 28, 32, 17, 20.
 Group B. 77, 87, 97, 107, 95, 87, 90, 104, 107, 98.
 - (3) Find the variance and standard deviation for the following test score
 85, 100, 92, 96, 87, 94, 75, 56, 60, 69
- Q.3** Answer the following (each of 07 marks) **14**
- (1) Write a note on Student's T-test? Discuss paired student's T-test with below data (use 1.833 t critical/table value)
 Student: 1 2 3 4 5 6 7 8 9 10
 Pre module score: 41 51 29 32 29 34 28 31 33 29
 Post module score: 25 35 30 34 26 39 31 33 29 31
 - (2) Based on field experiments, a new variety green gram is expected to give a yield of 12.0 quintals per hectare. The variety was tested on 10 randomly selected farmers' fields. The yields (quintals/hectare) were recorded as 24.3, 22.6, 23.7, 20.9, 23.7, 22.0, 21.4, 22.0, 22.6, and 23.1. Do the results confirm the expectation? (use 2.262 t critical/table value)
- Q.4** Answer the following (Any two out of three, each of 07 marks) **14**
- (1) Describe the principal component analysis
 - (2) Write Factor analysis in details
 - (3) Describe the popular software and packages used for the Microsoft office.
- Q.5** Answer the following (Any two out of three, each of 07 marks) **14**
- (1) Discuss in detail lotka- volterra model
 - (2) Write about the environmental system analysis
 - (3) What is Modeling? explain approaches for development of models
