THIRD SEMESTER M.Sc. DEGREE EXAMINATION, NOVEMBER 2018
(Regular/Supplementary/Improvement)
(CUCSS - PG)
**CC15P ES3 C15 - BIOSTATISTICS, QUANTITATIVE METHODS AND
ECO - INFORMATICS**
(Environmental Science)
(2015 Admission onwards)

Time : Three Hours   Maximum : 36 Weightage

I.   Answer *all* questions. Each question carries 1 weightage.

1.   Ecoinformatics.

2.   Artificial Neural Networks.

3.   Data Models.

4.   RDBMS

5.   LAN and WLAN.

6.   Skewness.

7.   Probability Axioms.

8.   Sample and Population variance.

9.   Factor analysis.

10. Central Limit Theorem.

11. Data mining.

12. Logical Operators.

13. Network Protocols.

14. Chi-Square.

(14 x 1 = 14 Weightage)

II. Answer any *seven* questions. Each question carries 2 weightage.

15. Calculate the coefficient of correlation for the following data.

Bulk Density	1.21	1.26	1.24	1.22	1.23	1.20
CEC	11.30	9.10	10.95	9.50	9.13	11.60

16. Compute the trend value using least square method from the data given below

Months	Jan	Feb	March	April	May	June
Yield (MT/ha)	7	6	5	4	4	8

17. In a hospital, 62% of the patients are female, 38% are male. The probability that a woman is given a blood test is 0.15; the probability for men is 0.10. Find:

a) The probability that a randomly chosen patient is tested.

b) The probability that a randomly chosen record of a test relates to a men.

18. Find the mean and variance of the first 'n' natural numbers.

19. Distinguish between parametric and non-parametric tests.

20. Brief the computation and laws of probability.

21. Write a note on any two software for data analysis

22. Explain about multivariate statistical techniques.

23. Explain the advantages and limitations of Pearson's Coefficient Correlation.

24. Differentiate between type I and type II errors.

(7 x 2 = 14 Weightage)

III. Answer any *two* of the following. Each question carries 4 weightage.

25. Explain regression lines. From the data given below obtain the regression of X on Y and Y on X. State how much variability explained by regression.

X	12	13	17	18	20
Y	20	19	21	18	22

26. Explain in detail the different methods of data representation.

27. Two species of cows were given three types of feed of equal quantity and the milk production was measured. Apply appropriate test to find out if the milk production are affected by feed type and species of the cows, also if there is any interaction between the feed and species of cows in respect of milk production.

	Milk Production (L)		
	Feed F1	Feed F2	Feed F3
Species C1	13	27	35
	17	25	38
	29	25	34
	29	29	21
	30	28	26
Species C2	36	31	22
	35	31	18
	34	22	19
	35	18	19
	31	20	20

28. Explain the applications of mathematic models and computational tools in natural resources management and wildlife conservation.

(2 x 4 = 8 Weightage)

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