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FIRST SEMESTER M.Sc. DEGREE EXAMINATION, DECEMBER 2014

(CUCSS)

Environmental Science

ES 1C 04—STATISTICAL COMPUTING

Time : Three Hours

Maximum : 36 Weightage

Part A

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

1. Define the important parts of a computer system.

2. Define the various types of storage devices.

3. What are the main parts of the CPU ?

4. What are the common types of magnetic storage devices ?

5. Write the primary types of optical storage.

6. Define one dimensional diagrams.

7. What do you mean by measures of central values ?

8. What is mean by measure of dispersion ?

9. Define an event.

10. State the addition theorem of probability.

11. Define conditional probability.

12. Name important properties of estimators.

13. Define keywords in C.

14. What is meant by looping ?

(14 × 1 = 14 weightage)

Part B

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

15. What is the difference between a file and a document in a computer ?

16. What is data bus ?

17. Write the operating systems role in running software's programs.

18. Write the main uses of MS word.

19. Explain in brief a pie-chart.

Turn over

20. Discuss mutually exclusive events.

21. What are the principle steps involved in a statistical test?

22. How will you test the independence of two events?

23. Explain a scatter diagram.

24. Describe the five arithmetic operators in C.

$(7 \times 2 = 14 \text{ weighta}$

Part C

*Answer any **two** questions.*
Each question carries 4 weightage.

25. Write a program in C to find the correlation coefficient for two variables X and Y.

26. Discuss the important applications of computers in environmental science.

27. The Turbine Oil Oxidation Test (TOST) and the Rotating Bomb Oxidation Test (RBOT) are t
    different procedures for evaluating the oxidation stability of steam turbain oils. The accompany
    observations on X = TOST time (hr) and Y = RBOT time (min) for 11 oil specimens has b
    reported:

TOST :	4200	3600	3750	3675	4050	2770	4870	4500	3450	2700	3
RBOT :	370	340	375	310	350	200	400	375	285	225	3

    Calculate and interpret the value of the sample correlation coefficient.

28. A manufacturer of dry cells claimed that the life of their cells is 24.0 hours. A sample of 10 cells
    mean life of 22.5 hours with a standard deviation of 3.0 hours. On the basis of available informat
    test whether the claim of the manufacturer is correct. Tabled value at 5% level is 2.2623.

    $(2 \times 4 = 8 \text{ weight}$