

Reg. No .....

Name .....

17P128

**MSc DEGREE END SEMESTER EXAMINATION- NOVEMBER 2017**

**SEMESTER 1 : ENVIRONMENTAL SCIENCE**

**COURSE : 16P1ENVT02 ; RESEARCH METHODOLOGY - I**

*(Common for Regular - 2017 / Supplementary - 2016 Admissions)*

Time : Three Hours

Max. Marks: 75

**Section A**

**Answer any 10 (2 marks each)**

1. Construct a frequency table with an interval of four  
10, 17, 15, 22, 11, 16, 19, 24, 29, 18, 25, 26, 32, 14, 17, 20, 23, 27, 30, 12, 15, 18, 24,  
36, 18, 15, 21, 28, 33, 38, 34, 13, 10, 16, 19, 22, 29, 19, 23, 31
2. Define probability sampling.
3. Compare mean, median and mode.
4. What are the characteristics of mean?
5. Define standard deviation.
6. Explain range and its merits.
7. What are different types of correlation?
8. Explain Spearman's rank correlation.
9. Define regression analysis.
10. State addition theorem of probability.
11. Define Z-test.
12. Define chi-square test.

**(2 x 10 = 20)**

**Section B**

**Answer any 5 (5 marks each)**

13. Explain with example the exclusive and inclusive method of determining limits of class intervals
14. What are the merits and demerits of median? Find the median of  
12, 2, 6, 5, 6, 7, 9, 3, 12
15. Find standard deviation for the following data

X	18	19	20	21	22	23	24	25	26	27
Y	3	7	11	14	18	17	13	8	5	4

16. The rank of the same 15 students in two subjects A and B are given below: the two numbers within the brackets denoting the ranks of the same students in A and B respectively.  
 (1,10) (2,7) (3,2) (4,6) (5,4) (6,8) (7,3) (8,1) (9,11) (10,15) (11,9)  
 (12,5) (13,14) (14,12) (15,13)
17. From the following data, obtain the two regression equations  
 X: 6 2 10 4 8  
 Y: 9 11 5 8 7  
 What are the limitations of Regression?
18. Comment on probability distribution.
19. Distinguish between large sample and small sample tests of significance.
20. Define vital statistics and mention its different types of measurements

**(5 x 5 = 25)**

### Section C

**Answer any 2 (15 marks each)**

21. Distinguish between primary and secondary data and indicate their sources? What are different methods of collecting primary as well as secondary data?
22. Draw a Lorenz curve for the following distribution and compare the variability of the three distributions

Income in thousand rupees	No. of persons in thousands		
	Group A	Group B	Group C
10	5	8	15
20	10	7	6
40	20	5	2
50	25	3	1
80	40	2	1

23. What is a scatter diagram? How does it help in ascertaining the degree of correlation between two variables?
24. From the following data given below, find:  
 a. The two regression equations  
 b. The coefficient of correlation between marks in economics and statistics  
 Marks in Economics: 25 28 35 32 31 36 29 38 34 32  
 Marks in Statistics : 43 46 49 41 36 32 31 30 33 39

**(15 x 2 = 30)**