

Total No. of Questions :8]

SEAT No. :

**P2168**

[Total No. of Pages :2

[5330] - 14

**M.Sc.**

**ENVIRONMENTAL SCIENCE**

**ENV - 104 : Statistical & Research Methods**

**(2008 Pattern) (Semester - I)**

*Time : 3 Hours]*

*[Max. Marks :80*

*Instructions to the candidates:*

- 1) *Answer to the two sections should be written in separate answer books.*
- 2) *All question carry equal marks.*
- 3) *Figures to the right indicate full marks.*

**SECTION - I**

**Q1)** Solve any two of the following.

**[20]**

- a) Explain the term:
  - i) Variance
  - ii) Probability
  - iii) Sample
  - iv) Parameter
  - v) Mode
- b) Write a brief note on skewness.
- c) Calculate mean, mode and median from the following

data

Class	0-5	5-10	10-15	15-20	20-25
Frequency	4	8	12	7	5

***P.T.O.***

**Q2)** Solve any two of the following. **[20]**

- a) Write a brief note on correlation.
- b) Discuss probability of Binomial distribution.
- c) Find the regression equation of Y on X. From the following data.

$$n = 10, \Sigma x = 197, \Sigma y = 62, \Sigma xy = 1565, \Sigma x^2 = 4599, \Sigma y^2 = 576.$$

**SECTION - II**

**Q3)** Solve any two of the following. **[20]**

- a) Explain the following term:
  - i) Type - I & Type - II error
  - ii) Null hypothesis
  - iii) Sample space
  - iv) Time series model
  - v) Events
- b) A random sample of 100 people in certain city gives average teenager content 27 with standard deviation 8. Test whether the teenager content overall the city is 30% with 5% level of significance.
- c) What is time series analysis? Add a note on its application in Environmental science.

**Q4)** Solve any two of the following. **[20]**

- a) Discuss chi - square test for goodness of fit.
- b) Explain the method for one way ANOVA.
- c) What is computer based models? Explain any model used for population studies.

