

Seat No. : _____

AF-146

April-2018

B.Sc., Sem. VI

**311 : Statistics
(Medical Statistics)**

Time : 3 Hours]

[Max. Marks : 70

Note : Q. 1 to Q. 4 carry 14 marks each, Q.5 carry 14 marks.

1. (a) Write a note on population growth and population growth rate.

OR

The survival time T follows two-parameter Weibull distribution. Derive the expression for survival function and hazard rate.

(b) Explain discrete and continuous time population growth model.

OR

Let T be the survival time and it follows exponential distribution with parameter λ . Obtain expression for survival function and hazard rate.

2. (a) What do you mean by hazard ? Explain in detail hazard rate.

OR

Write a note on Epidemiology.

(b) Explain term Odds, Odds Ratio and Relative Risk.

OR

Explain continuous time population growth model.

3. (a) What is Polio ? Explain the history of drug discovery of Polio.

OR

Explain the history of drug discovery of Malaria and Penicillin.

(b) What is Smallpox ? Explain the history of drug discovery of Smallpox.

OR

What is clinical trials ? What is the purpose of clinical trials? Explain the various phases of clinical trials.

4. (a) Write a note of crossover design in reference with clinical trials.

OR

Explain bioequivalence and bio-availability.

- (b) Discuss evidence based medicine in the context of clinical trials.

OR

With reference to clinical trials, explain case control studies and longitudinal studies.

5. Write answers in short :

- (a) What do you mean by Odds ?
- (b) What is survival function? Give the relation between survival function and distribution function.
- (c) State the role of drug discovery bodies in clinical trials.
- (d) If survival time t is exponentially distributed with parameter λ , what is the hazard rate?
- (e) State the formula for relative risk.
- (f) What are the uses of clinical trials ?
- (g) Give the names of drug regulatory bodies in India.