AF-101

April-2016

B.Sc., Sem. VI

Elective – 311 : Statistics

Time : 3 Hours] [**Max. Marks : 70**

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

1. (a) Write a note on (i) Birth and Death rate, (ii) Population growth and Population growth rate.

OR

Explain discrete time and continuous time population growth model.

(b) Let X follows Weibull distribution W(0, α, β). Obtain the survival function and hazard rate of X.

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

Explain Epidemiology in detail.

(b) Write a note on Relative Risk.

OR

Write a note on odds and odds ratio.

3. (a) What is clinical trials ? Explain the various phases of clinical trials.

OR

Explain the history of drug discovery of Smallpox.

(b) Write a short note on history of drug discovery of Penicillin.

OR

Explain the history of drug discovery of Malaria and Polio.

4. (a) Discuss evidence based medicine in the context of clinical trials.

OR

Write a note on 2-treatment, 2 period crossover design in reference with clinical trials.

(b) Explain bioequivalence and bio-availability.

OR

With reference to clinical trials, explain case control studies.

5. Write answers in short:
   (a) Name some drug regulatory bodies in India.
   (b) State the role of drug discovery bodies in clinical trials.
   (c) Define Survival function and give its importance.
   (d) Explain Odds.
   (e) Define Hazard rate and give its importance.
   (f) Give the relation between survival function and distribution function.
   (g) What is longitudinal study ?
   (h) Write any two importance of clinical trials.
   (i) What do you mean by census ?

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