



DHH-003-017402

Seat No. _____

M. Sc. (Sem. IV) (CBCS) (Statistics) Examination

May / June – 2015

STAT. CST : 4002 : Clinical Trial & Survival Analysis

Faculty Code : 003

Subject Code : 017402

Time : $2\frac{1}{2}$ Hours]

[Total Marks : 70

Q-1 Answer any seven of the following.

(14)

- Degree of freedom of Doses in Parallel-line assays is :
(a) $2k-4$ (b) $2k-1$
(c) $2k(n-1)$ (d) $2kn-1$
- For PARALLEL-LINE ASSAYS when k is odd Standard Preparation is given by :
(a) $(k-1), (k-3), \dots, -1, 1, 3, \dots, (k-1)$
(b) $-(k-1), -(k-3), \dots, -1, 1, 3, \dots, (k-1)$
(c) $\frac{k-1}{2}, \frac{k-3}{2}, \dots, -1, 1, 3, \dots, \frac{k-1}{2}$
(d) $-\frac{k-1}{2}, -\frac{k-3}{2}, \dots, -1, 1, 3, \dots, \frac{k-1}{2}$
- The Phase-study of Clinical trial in which Phase We focused on effectiveness.
(a) Phase-I (b) Phase-II
(c) Phase-III (d) Phase-IV
- For Kaplan-Meier Estimate if $n(j)=20$ and $\delta(j)=1$ then What is $P(j)$?
(a) 0.92 (b) 0.93 (c) 0.94 (d) 0.95
- Range of Linear Regression is:
(a) 0 to 1 (b) -1 to 1 (c) $-\infty$ to ∞ (d) 1 to ∞
- _____ are comparative studies with an intervention group and a control group.
(a) Randomised Control Study (b) Non – Randomised Control Study
(c) Surrogate response (d) None.
- The tabular presentation of the survival experience during the period of observation is called _____.
(a) Survival Curve (b) Life Table (c) Clinical Trial (d) None.
- In _____ method, the assumption is made that the death and loses are uniformly distributed over a interval on the average.
(a) Kaplan – Mier (b) Hazard Function (c) Cutler – Ederor (d) None.
- \sqrt{MH} has follows _____ distribution.
(a) Negative (b) Normal (c) Asymptotically Standard Normal (d) None
- The ratio of two predicated risk is _____.
(a) Odd Ratio (b) Risk Ratio (c) Predicated Risk (d) None.

Q – 2 Answer the following questions (Any Two) (14)

1. Explain Logit model and logistic regression model.
2. Develop the Kaplan – Mier estimates of survival function $s(t)$.
3. Briefly explain Clinical Trials.
4. State and Prove Fieller's Theorem

Q – 3 Answer the following questions (14)

1. What is meant by response variable? Briefly explained.
2. Define survival function. Discuss a method for estimating the survival function.

OR

Q – 3 Answer the following questions (14)

1. Define randomized control study.
2. Explain estimation of the survival curve.

Q – 4 Answer the following questions (Any Two) (14)

1. Explain surrogate response variables.
2. Discuss cross over design v/s parallel line assay. Obtain analysis of variance and its ANOVA table.
3. Survival experience obtained from clinical trials.
4. Explain Cutler – Eiderer estimate

Q – 5 Answer the following questions (Any Two) (14)

1. Why Clinical trials needed?
2. Write limitations of linear regression model.
3. Discuss weibull distribution
4. Define following terms:
 - a. Predicted risk
 - b. Odd ratio
 - c. Risk ratio