2703E1369   Candidate's Seat No :_____

B.Sc. Semester-5 Examination
CC 304
Statistics
Time : 2-30 Hours]   **March-2024**   [Max. Marks : 70

Q. 1 (A)   Give complete layout of one way ANOVA, and obt... ...ations of treatment   7
           sum of squares in one way ANOVA
   (B)   Obtain expectations of error sum of squares and treatment sum of squares in one   7
           way ANOVA.

OR

Q. 1 (A)   Discuss three principles of experimental design.   7
   (B)   Explain CRD with its complete statistical analysis ... ... its advantages   7
           and disadvantages.
Q. 2 (A)   Explain the following terms (i) Treatments and Blocks (ii) Yield and Plot   7
   (B)   In usual notation derive expectation of total sum of square in one way ANOVA   7

OR

Q 2 (A)   Give complete lay out of randomized block design give ... ...its and demerits.   7
           How do you identify that given design is a RBD?
   (B)   Derive expected value of treatment sum of square for two way classification.   7
Q. 3 (A)   Give statistical analysis of latin Square Design.   7
   (B)   Obtain relative efficiency of LSD with RBD when rows are used as blocks.   7

OR

   (A)   Explain estimation procedure to estimate one mis... ... ... in LSD of
           order r.
   (B)   Explain how will you estimate the two-missing yield in RBD.   7
Q. 4 (A)   Explain Yate's method of calculating yields of main effect and interaction effect.   7
   (B)   Explain 2^3 factorial design in detail.   7

OR

Q. 4 (A)   Explain in detail Factorial experiment   7
   (B)   Define partial and complete confounding with example. Discuss complete   7
           analysis of complete confounding in 2^3 factorial experiment.
Q. 5   Attempt any Seven   14
   (i)   Give on advantage of CRD
   (ii)   Do you agree that CRD is also used when CRD is also use when one or more
           observations are missing.
   (III)   How do you identify Latin Square Design?
   (iv)   Can we consider LSD as Three way classification? LSD is also known as _____
           design
   (v)   State formula for two missing observations in LSD
   (vi)   Among CRD, RBD and LSD Which design is most efficient? Why?
   (vii)   What is simple effect?
   (viii) Define main effect.
   (ix)   BigShots, Inc. is a specialty e-tailer that operates 87 catalog Web sites on the
           Internet. Kevin Conn, Sales Director, feels that the style (color scheme, graphics,
           fonts, etc.) of a Web site may affect its sales. He chooses three levels of design
           style (neon, old world and sophisticated) and randomly assigns six catalog Web
           sites to each design style. Kevin's experimental design is a _____.
                   (a) factorial design   (b) random block design
                   (c) completely randomized design   (d) normalized block design
   (x)   What is listed in the first column of an ANOVA summary table?
                   (a) degrees of freedom   (b) sum of ...
                   (c) source of variation   (d) significance level