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NCC-003-1172002 Seat No. _____

M. Sc. (Sem. II) (CBCS) Examination

April / May - 2017

MS-202 : Statistics

(Planning & Analysis of Industrial experiments)

Faculty Code : 003
Subject Code : 1172002

Time : $2\frac{1}{2}$ Hours] [Total Marks : **70**

1 Answer the following questions : (Any **seven**) **14**

(1) Projective Geometry (PG) Method gives _____ design.

(2) A PBIB design with two associate classes is said to be simple PBIB design if either _____.

(3) General combined ability of CDC plan is given as: _____.

(4) _____ gave a concept of weighing design.

(5) For BIB Design E = _____.

(6) Relation between treatment contrast of RBD and BIBD is _____.

(7) In YSD, column-wise it is _____ design.

(8) In RBD variance of treatment contrast is _____.

(9) If the level of all the factors are at lower level it is called as _____.

(10) C - matrix is expressed as _____.

2 Answer the following questions : (Any **two**) **14**

(1) Define following terms : Complete Block Design, RBD, Connectedness.

(2) Prove that on Block design is said to be orthogonal if cov(Q, P)=0 when N=rk'/n.

(3) For any symmetrical BIBD $(r-\lambda)$ must be a perfect square for even v.

3 Answer the following questions : 14

(1) Define following terms: Resolvable BIBD, Affine Resolvable BIBD.

(2) Show that a design with parameters v=4, b=6, r=3, k=2, $\lambda = 1$ is balanced, connected or orthogonal?

OR

3 Answer the following questions : 14

(1) Prove that for any BIBD $b \geq v + r\text{-}k$

(2) Explain Analysis of Intrablock BIBD.

4 Answer the following questions : (any **two**) 14

(1) Construct BIRD with parameter v=7, b=21, r=6, k=2, $\lambda = 1$.

(2) Show that a BIBD is connected of R(c)=v-1.

(3) Explain 2^3 factorial experiment.

5 Answer the following questions : (any **two**) 14

(1) What is meant by confounding? Explain 3 types of confounding.

(2) Construct following BIBD using Block System method v=b=11, r=k=5, $\lambda = 2$.

(3) Derive CDC Plan from given BIBDv=b=5, r=k=4, $\lambda = 3$.

(4) Obtain following BIBD using Golois field.

v=b=7, r=k=3, $\lambda = 1$.