PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)
BSc DEGREE EXAMINATION DECEMBER 2018
(Sixth Semester)

Branch - **STATISTICS**

DESIGN OF EXPERIMENTS

Time : Three Hours   Maximum : 75 Marks

SECTION-A (20 Marks)
Answer **ALL** questions
ALL questions carry **EQUAL** marks   (1 0 x 2 = 20)

1   Give the two causes of variation.
2   Explain the term analysis of variance.
3   Define 'Design of Experiments'.
4   State the LSD test.
5   What is factorial experiment?
6   Define 2 - Factorial design.
7 , Define partial confounding.
8   Define orthogonal contrast.
9   Write the parameters of BIBD.
10   Define split-plot design.

SECTION - B (25 Marks)
Answer **ALL** Questions
ALL Questions Carry **EQUAL** Marks (5 x 5 = 25)

11 a Bring out the assumptions of ANOVA and state Cochran's theorem.
OR
b Explain the mathematical model of two-way classification.

12 a What are the advantages and disadvantages of RBD?
OR
b Discuss estimation of missing values in LSD.

13 a With an example explain the factorial experiment.
OR
b What are the main effects and interaction effects in 2^n experiment?

14 a Explain analysis of 2'-confounding design.
OR
b What are the advantages and disadvantages of confounding?

15 a Explain split-plot design in detail.
OR
b Discuss analysis of covariance with one concomitant variable.

SECTION-C 130 Marks)
Answer any **THREE** Questions
ALL Questions Carry **EQUAL** Marks (3 x 10 = 30)

16   Provide the model for one-way classification.

17   Bring out the statistical analysis of RBD.

18   Discuss fully the analysis of 2^n-factorial experiment.

19   Explain the statistical analysis of 2 -partial confounded design.

20   Derive the analysis of covariance for one-way layout with
      one-concomitant variable.

Z–Z–Z   END