

2. Kapur J.N. and : Mathematical Statistics,
Saxena H.C. S.Chand & Company Ltd., New
Delhi.

Reference Books :

1. Singh, J. : Statistical Inference (Hindi
edition), Madhya Pradesh
Hindi Granth Academy, Bhopal
2. Goon, A.M., : An outline of Statistical
Gupta, M.K. & Theory, Vol.2, The world Press
Das Gupta, B. Publishers Private Ltd. Calcutta
(1980)
3. Rohatgi, V.K. : An Introduction to probability
(1986) theory & Math. Statistics,
Wiley Eastern
4. Mood A.M., : Introduction to the theory of
Graybill, F.A. & Statistics, Third edition
Boes, D.C. (1974) McGraw Hill

PAPER - II
DESIGN OF EXPERIMENTS AND
STATISTICAL QUALITY CONTROL

Note: The question paper will be divided into three sections A, B and C as follows:

Section A: In this section, ten questions will be set taking two questions from each unit. Each question will be of short answer type not exceeding 20 words and will carry 1/2 mark. The candidate will be required to attempt all the questions (aggregating 5 marks).

Section B In this section, ten questions will be set taking two questions from each unit. The answer of each will not exceed 250 words or two and a half page. Each question will be of 5 marks. The candidate will be required to attempt five questions in all taking -one question from each unit (aggregating 25 marks).

Section C: In this section, four questions will be set covering all the five units and whose answers not shall not exceed 500 words or five pages each. Each question may have sub parts in it and will carry 10 marks. The candidate will be required to attempt any two questions (aggregating 20 marks).

UNIT-I

Analysis of variance for one-way and two-way classification (with one observation per cell). Linear model and its different types, Transformations, Basic concepts in design of experiments, Criteria for a good design, Uniformity trials, Size and Shape of block and plots.

UNIT-II

etely randomized, Randomized block and Latin square designs.

UNIT-III

ncy of Randomized block design over Completely randomized design.

g plot technique, Estimation of single missing in Randomized block and Latin square designs.

UNIT-IV

tical Quality Control: Process control and attribute control, Control charts, 3σ -control limits, Tools of SPC, Control charts for variables and attributes, \bar{X} -R-charts, \bar{X} and σ charts, p, np and c-charts. Methods for detecting lack of control in various charts. Control limits, normal tolerance and specification limits, Modified control limits.

UNIT-V

Examples of Acceptance Sampling : Problem of lot acceptance, good and bad lots, producer's & consumer's risk, single & double sampling plans and OC, OC functions. Concepts of AQL, LTPD, AOQL, average amount of Inspection and ASN functions.

Recommended Books :

Gupta S.C. & Kapoor V.K. : Fundamentals of Applied Statistics, Sultan Chand & Sons, New Delhi.

Coon, A.M. : Fundamentals of Statistics, Vol.II. The World Press Pvt. Ltd. Calcutta

3. Cochran, W.G. : Experimental Designs, John Wiley & Sons, New York.

Reference Books :

1. Goulden, C.H. : Methods of Statistical Analysis (Hindi Ed.) Bihar Hindi Granth Academy, Patna

2. Snedecor, G.W. : Statistical Methods (Hindi Ed.) Commission of Scientific & Technical Words, Ministry of Education, Govt. of India

3. Mukhopadhyay, : Applied Statistics, New Central Book Agency Pvt., Ltd. Calcutta P. (1999)

4. Montgomery, D.C. (1991) : Design and Analysis of Experiments, Wiley Eastern.

5. Duncan A.J. (1974) : Quality Control and Industrial Statistics. Fourth editions, Taraporewala & Sons.

6. Montgomery, C. : Introduction to the Statistical Quality Control (Second edition) John Wiley & Sons.