Solapur University, Solapur

New Syllbaus

B.Com.III

(Optional) Paper – II

ADVANCED STATISTICS

(w.e.f. June 2010)

Section-I

Unit-I **DEMOGRAPHY** **(15)**

Introduction, Measures of Mortality (CDR, SDR, STDR by Direct Method)
Measures of fertility (CBR, GFR, SFR, TFR)
Reproduction rates: Crude rate of Natural Increase.,GRR & NRR,

Unit-II **TESTING OF HYPOTHESIS** **(12)**

Definition of parameter, statistic, hypothesis (Simple & Composite) Null & alternative hypothesis, critical region, level of significance, Type I & Type II error, power of the test (Only concepts)

Unit-III **LARGE SAMPLE TESTS** **(15)**

1) Test for an assumed mean.
2) Test for an assumed Proportion.
3) Comparison of means of two populations.
4) Comparison of proportion of two populations.

Unit-IV **EXACT SAMPLING DISTRIBUTIONS** **(18)**

Definition of Chi-square, t & F variates & their p.d.fs
Applications of t distribution
1) Testing H0 : M = M0
2) Testing H0 : M1 = M2
Applications of Chi-square,

1) Test of goodness of fit
2) Testing independence of attributes.
2 x 2 contingency table.

Applications of F – distribution
1) To test H0 : $S.d.1^2 = S.d.2^2$

Section-II

Unit-V **LINEAR PROGRAMMING PROBLEMS** **(15)**

Introduction, concept, Mathematical formulation of the Problem. Solution by using graphs problems & Examples based on l.p.p.

Unit-VI **ASSIGNMENT PROBLEMS** **(15)**

Assignment Problems for minimization, introduction, Mathematical formulation Hungarian algorithm, problems on A.P.

Unit-VII **TRANSPORTATION PROBLEMS** **(15)**

Transportation Problems for minimization, introduction, methods of finding I.B.F.S., testing solution for optimality, , problems on T.P.

Unit-VIII **SEQUENCING** **(15)**

Introduction, Assumptions, problem of sequencing of n jobs through 2 machines, n jobs through 3 machines, n jobs through M machines, actual problems on this.

Reference books

1) Fundamentals of applied statistics by Gupta & Kapoor.
2) A text book of operations research by S.D. Sharma
3) Quantitative techniques in decision making by J.K. Sharma
4) A text book of operations research by R.K. Gupta.
5) Statistical Methods by J.Medhi
6) Fundamentals Mathe. Statistics by Gupta & Kapoor.
7) Introduction to Mathe. Statistics by D.N.Elance.

Distribution of marks for the University exams for all faculties.

1. (a) 20 % Marks – Objectives questions.

40 % Marks - Short notes / short answer type questions/ Short Mathematical type questions

40 % Marks - Descriptive type questions / Long Mathematical type questions

Out of 20 % Marks for objective questions 10 % marks Should be assigned to multiple choice questions and remaining 10 % be assigned to fill in the blanks / answer in one sentence etc. However, each faculty may decide nature and types of questions to be set subject to distribution of above percentage of marks.

(b) One descriptive type question will be Compulsory Paper setter should mention approximate words limit for short note / short answer type questions except Diagrammatical and Numerical questions.