Solapur University, Solapur New Syllabus B.Com.III (Optional) - Paper - I ADVANCED STATISTICS (w.e.f. June 2010)

Section I

Unit -I	PERMUTATIONS & COMBINATIONS	(12)
Definitions	and Relations between them,	
Simple example	mples based on them.	
Binomial T	heorem (without proof)	
Simple exa	mples based on it	
Unit – II	MATRICES	(15)
Definition of	of Matrix, Types of Matrices.	
Algebra of 2	Matrices (Addition Subtraction & Multiplication)	
Inverse of n	natrix by Ad joint method.	
Examples b	ased on matrices upto order 3	
Unit – III	PROBABILITY THEORY	(15)
Definition of	of terms used in probability, Definition of probability,	
Definition of	of conditional probability	
Additive &	Multiplicative theorems on probability,	
Bays theore	m, Examples based on these	
Unit – IV	RANDOM VARIABLE & PROBABILITY DISTRIBUTION	(15)

Meaning of random variable, concept of discrete & continuous random variables. Definition of probability mass function & probability density function Distribution function. Definition of Bivariate discrete random variable.. Joint probability mass function of X & Y Marginal & Conditional Probability Distributions.

Section – II

Unit – V MATHEMATICAL EXPECTATION

Definition of Mathematical Expectation of Univariate & Bivariate discrete random variable X. Addition & multiplication laws of mathematical expectation for discrete random variable only. Examples based on these. Mean & Variance of discrete random variable.

Conditional mean & Conditional Variance. Examples based on these.

Unit – VI <u>BINOMIAL DISTRIBUTION</u>

Definition of p.m.f., Mean & Variance of Binomial Distribution . Properties of Binomial Distribution. Condition under which binomial distribution is applicable. Examples based on this.

Unit – VII POISSON DISTRIBUTION

Definition of p.m.f., Mean & Variance of Poisson Distribution. Properties of Poisson Distribution. Condition under which Poisson distribution is applicable. Examples based on this.

Unit – VIII NORMAL DISTRIBUTION

p.d.f. of Normal Distribution, S.N.V., Normal Probability curve. Properties of normal distribution. Examples based on area under normal curve.

REFERENCE BOOKS

- 1) A Text Book of Calculus Bhagwat & Pawate
- 2) Text Book of Matrices Shantinarayan
- 3) Statistical Methods by S.P.Gupta.
- 4) Mathematical Statistics by Saxena & Kapoor.
- 5) Statistics by Sancheti & Kapoor.
- 6) Introduction to Mathematical Statistics by D.N.Elance.

(15)

(15)

(18)

(15)

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.