

HEMCHANDRACHARYA NORTH GUJARAT UNIVERSITY, PATAN

B.C.A. Semester – III

BCA-303 : Statistics and Optimization Techniques

Teaching Scheme (Per week)		Teaching Scheme (Per semester)		Examination Scheme					
				INT		EXT		TOTAL	
Th. (hours)	Pr. (hours)	Total Hours	Credit	Th. (marks)	Pr. (marks)	Th. (marks)	Pr. (marks)	Th. (marks)	Pr. (marks)
4	--	40	4	30	--	70	--	100	--

Unit - I

[18 Marks]

FREQUENCY DISTRIBUTION

Collection of data, Classification of data, Class interval, Types of Classes, Class frequency, Class mark, Class Boundaries, Width of a class, Frequency density, Relative frequency, Percentage frequency, Cumulative frequency.

MEASURES OF CENTRAL TENDENCY

Introduction, Arithmetic Mean, Simple and weighted for raw data, Discrete frequency, distribution, Continuous frequency distribution, Properties of A.M., Merits & Demerits of A.M.- Median for raw data, Discrete frequency distribution, Continuous frequency distribution (C.F.S.), Merits and demerits of Median, Mode for raw data and for C.F.S., Merits & demerits of mode

MEASURES OF DISPERSION

Introduction, Range, coefficient of range, Quartiles, Quartiles deviations, coefficient of quartile deviations, Mean deviation and coefficient of mean deviation, S.D and variance for all types of frequency distribution, Coefficient of Dispersion, Coefficient of variation

Unit - II

[17 Marks]

CORRELATION AND REGRESSION

CORRELATION

Definition of Correlation, Types of Correlation, Scatter Diagram Method, Karl Person's , Correlation Coefficients, Rank Correlation Coefficients, Correlation Coefficients for Bi-variate frequency distribution, Probable error for Correlation Coefficients

REGRESSION

Definition of Regression, Regression lines, Regression Coefficients, Properties of regression Coefficients, Fitting of regression lines and estimation for Bi-variate frequency distribution

Unit - III

[18 Marks]

LINEAR PROGRAMMING

Mathematical model, standard form of an LPP, Graphical solution, Simplex method, Duality in LPP, PERT & CPM

Unit - IV**[17 Marks]****TRANSPORTATION & ASSIGNMENT MODEL.**

Introduction, Mathematical Formulation, Tabular Presentation, Special Structure of Transportation Problem, Optimum solution of transportation problem, Optimality test, Degeneracy transportation problem, Mathematical formulation of the assignment problem, Hungarian method for solving an assignment problem, Unbalanced assignment problem, Traveling Salesman Problem, Applications.

Text Book:**For Unit –I & II**

1. **Statistical Methods**, S.P. Gupta
2. **Business Statistics**, R.S. Bhardwarj
3. **Fundamental of Statistics**, S.C. Gupta

For Unit-III and IV

1. **Sharma S.D.**, Operation Research Kedar Nath & Co. Meerut, 1988-89.

Question Paper Scheme:**University Examination Duration: 3 Hours.**

- Q.1 - Unit-I (18 Marks)
A. Objective/ Short Questions.
B. Descriptive/ Long questions.
- Q.2 - Unit-II (17 Marks)
A. Objective/ Short Questions.
B. Descriptive/ Long questions.
- Q.3 - Unit-III (18 Marks)
A. Objective/ Short Questions.
B. Descriptive/ Long questions.
- Q.4 - Unit-IV (17 Marks)
A. Objective/ Short Questions.
B. Descriptive/ Long questions.

Note: All Objective/ Short Questions are compulsory, no option will be given.

Filename: BCA-303
Directory: C:\Documents and Settings\Student\Desktop\VIPUL-
II\BCA\sem-iii
Template: C:\Documents and Settings\Student\Application
Data\Microsoft\Templates\Normal.dot
Title: HAMCHANDRACHARYA NORTH GUJARAT
UNIVERSITY,, PATAN
Subject:
Author: pln
Keywords:
Comments:
Creation Date: 3/25/2012 2:21:00 PM
Change Number: 4
Last Saved On: 3/26/2012 9:51:00 AM
Last Saved By: VP
Total Editing Time: 3 Minutes
Last Printed On: 6/7/2012 4:18:00 PM
As of Last Complete Printing
Number of Pages: 2
Number of Words: 501 (approx.)
Number of Characters: 2,859 (approx.)