B.Sc. (Computer Application)
SEMESTER - I

Paper –1 COMPUTER PROGRAMMING FUNDAMENTALS-I

UNIT 1

UNIT 2
Introduction to Disk Operating System(DOS) and UNIX. Basic DOS Internal and External Commands. Basic Commands in UNIX, UNIX directory and files, UNIX security and access, UNIX communication. Line Editors and Screen Editors, Features of vi Editor of UNIX.

UNIT 3
Algorithm development: Program Logic development, Problem Analysis, Algorithm development and analysis, Flow-chart. Control Charts and Decision tables.

UNIT 4
Algorithm for simple problems like: Sequential Search, Sine function, Factorial computation, GCD computation, Prime number generation, and similar problems.

UNIT 5

TEXT BOOKS:

REFERENCES


B.Sc (Computer Application)

SEMMETER - I

Paper – 2 INFORMATION REPRESENTATION & DATA STRUCTURE-I

UNIT 1
Information Representation-Integer data, Real data,,Strings,Binary data, Binary coded
decimal number representation fixed point number representation,

UNIT 2
Floating point number representation, ASCII codes, Error detection and correction.
Binary Arithmetic.

UNIT 3
Algorithms design & analysis: An algorithmic language, characterstics of algorithm, and
primitive operation from algorithms to programs.

UNIT 4
Data Structures: Introduction and Defination, primitive & composite data type. Simple
Data Structure including Array & ordered lists.

UNIT 5
Information Structure: Array, need of array & their working, one and higher dimensional
arrays.

TEXT BOOKS:
1. Digital Computer Organization By M.M.Manoo.
2. E.Horowitz, S.Sahni, Fundamental of Data Structure in Pascal, Computer Science
   Press, Indian Edition by Galgotia, New Delhi

Practical assignment will be based on both the thory papers. Examination schemes are
same as earlier.
B.Sc.(Computer Application)

SEMESTER - II

Paper –1 COMPUTER PROGRAMMING FUNDAMENTALS-II

UNIT 1

PASCAL variables names. The concept of Data type and Strongly typed languages. Data type in standard PASCAL. Declaration. Scalar Data types including user defined. Subrange. Structure Data type including array, record, sets, files, pointer data type.

UNIT 2

Standard PASCAL control structures, Sequence, Compound statements. The need for Begin-End Construct. Selection: If-then-else and case statement, Iteration: For, While, Repeat-Until loops, Labels and “Goto” statement.

UNIT 3

Use of standards subprogram. Introduction to procedure subprograms and function subprograms: Declaration, Invoking and various parameter passing methods. Recursion: Introduction, Illustration through simple example including Tower of Hanoi Problem.

UNIT 4


UNIT 5


TEXT BOOKS
REFERENCES
B.Sc (Computer Application)

SEMESTER - II

Paper – 2 INFORMATION REPRESENTATION & DATA STRUCTURE-II

UNIT 1
Stacks & Queues: Their implementation & simple algorithms manipulations of their data structure, application of stacks & queues.

UNIT 2
Linear data structure: Linear list, storage structures concepts, linked list representation,

UNIT 3
Operations on linked list and their manipulation algorithms, linked storage allocation, garbage collection and compaction.

UNIT 4
Trees: Notation & concepts, storage representation & manipulation of binary trees,

UNIT 5
General trees, and graphs: representation and searching algorithm.

TEXT BOOKS:
1. Digital Computer Organization By M.M.Manoo.

Practical assignment will be based on both the theory papers. Examination schemes are same as earlier.