B.A./B.Sc. (Information Technology) PART-II (SEMESTER III)
2018-19, 2019-20 and 2020-21 Session

BIT-201 : PROGRAMMING IN C

Maximum Marks: 45 **Maximum Time: 3 Hrs.**
Minimum Pass Marks: 35% **Lectures to be delivered: 45-55 Periods**
Internal Assessment: 15 Marks

A) Instructions for paper-setter

The question paper will consist of three sections A, B & C. Sections A & B will have four questions from the respective sections of the syllabus and will carry 40% marks each. Section C will have 6-12 short answer type questions which will cover the entire syllabus uniformly and will carry 20% marks in all.

B) Instructions for candidates

Candidates are required to attempt two question each from sections A & B of the question paper and the entire section C.

SECTION-A

C Fundamentals : Introduction to C, character set, identifiers, keyboard, data types, constants, variables, user defined data types, Binary, Unary relational, logical assignment and conditional and expressions.
Data I/O Statements : Single character I/O, formatted I/O, functions.
Control Statements: Sequencing alteration (if-switch, continue, go to and comma operator), iteration (while, do) and nested loops.
Arrays : Single and multidimensional arrays, arrays and strings, string processing.

SECTION-B

Functions : Defining and accessing a function, passing arguments to a function, specifying arguments data types, function prototypes, recursion.
Pointers : Character pointers, pointer to arrays, arrays of pointers.
Structures : Defining and processing structures.
Searching and sorting : Use of various data structures for searching and sorting, linear and binary search, insertion sort, selection sort, exchange sort, bubble sort, merge sort,

1. Program are be implemented in 'C'.
2. Insertion, deletion, search and traversal operations are to be performed on all the data structures.

Text Books:

1. E. Balaguruswamy, *Programming in C,* Tata McGraw Hill.

Reference Books:

1. Kanetkar, *Let us C,* BPB Publications.
2. Shubhnandan S. Jamwal, Programming in C, Pearson Publications.
3. Byron S. Gottrfied, *Programming with C,* Tata McGraw Hill.
4. Tanenbaum, Y. Lanhgsam and A. Augenstein, *Data Structures Using C,* Prentice Hall of India.
5. Seymour Lipschulz, *Theory of Practice of Data Structures,* McGraw Hill.

BIT-202 PRACTICAL BASED ON PAPER BIT-201

Maximum Marks: 40 **Maximum Time: 3 Hrs.**
Minimum Pass Marks: 35% **Practical Units to be conducted: 45-55 Hrs**

The laboratory course will comprise of exercise to what is learnt under Paper BIT-201.

The break up of marks for the practical will be as under:

Lab Record (Internal Assessment)	:	10 Marks
Viva Voce	:	10 Marks
Program Development And Execution	:	20 Marks

B.A./B.Sc. (Information Technology) PART-II (SEMESTER IV)
2018-19, 2019-20 and 2020-21 Session

BIT 203: DATABASE MANAGEMENT SYSTEM

External Marks: 45 **Maximum Time: 3 Hrs.**
Minimum Pass Marks: 35% **Lectures to be delivered: 45-55 Hrs**
Internal Assessment: 15

A) Instructions for paper-setter

The question paper will consist of three sections A, B & C. Sections A & B will have four questions from the respective sections of the syllabus and will carry 40% marks each. Section C will have 6-12 short answer type questions which will cover the entire syllabus uniformly and will carry 20% marks in all.

B) Instructions for candidates

Candidates are required to attempt two question each from sections A & B of the question paper and the entire section C .

SECTION-A

Traditional file procession system : Characteristics, limitation. Database : Definition, composition,
Database Management System : Definition, Characteristic advantages over traditional file processing system, Implication Database approach, Uses of database, DBA and its responsibilities Database schema, instance.
DBMS architecture, data independence, mapping between different levels.
Database language : DDL, DML, DCL.
Database utilities, Data Models, Keys : Super, candidate, primary, unique, foreign.
Entity relationship model : concepts, mapping cardinalities, entity relationship diagram, weak sets, strong entity sets, aggregation, generalization, converting ER diagram to tables.
Relational Algebra : Basic operations, additional operations.

SECTION-B

Database design : Functional dependency, decomposition, problem arising out of bad database design, normalization, multi valued dependency. Database design process, database protection, database integrity, database concurrency : Problems arising out of concurrency, methods of handling concurrency. Data recovery, database security : Authentication, authorization, methods of implementing security.
MS-Access : Introduction to MS-Access, working with database and tables, queries in Access, Applying integrity constraints, Introduction to forms, sorting and filtering controls, Reports and Macro : Creating reports using Macros.

Text Book:

1. C.J. Date, An Introduction to Database Systems, Narosa Publishers, (Reprint).

Reference Books:

1. Siberscharts, Korth and Sudarshan, Database Concepts, Mcgraw Hill Publication.
2. Ivan Bayross, Oracle 7 The complete reference, BPB Publications.
3. Jeffrey D. Ulliman, Principles of Database Systems, Galgotia Publications.
4. D. Kroenke, Database Processing, Galgotia Publications.

BIT-204 PRACTICAL BASED ON PAPER BIT-203

Maximum Marks: 40 **Maximum Time: 3 Hrs.**
Minimum Pass Marks: 35% **Practical Units to be conducted : 45-55 Hrs**

The laboratory course will comprise of exercise to what is learnt under Paper BIT-203.

The break up of marks for the practical will be as under:

Lab Record (Internal Assessment)	:	10 Marks
Viva Voce	:	10 Marks
Program Development And Execution	:	20 Marks