BEIT302T PROGRAMMING LOGIC AND DESIGN USING 'C'

(Theory Credit: 05)

Teaching Scheme:	Examination Scheme:
Lecture: 4 Hours/ week	Theory: T (U): 80 Marks T (I): 20 Marks
Tutorial: 1 Hour/ week	Duration of University Exam. : 03 Hours

UNIT I:

Introduction and Structure of 'C' Programming: Algorithms and Flowchart, Characteristics of algorithm, Basic Techniques, Decision Making, Looping Technique, Multiway Decision Making. Examples through 'C'.

UNIT II:

Function and Pointers: Introduction to functions, why use function, Scope rule of function, call by value, call by reference, recursion, Iterative versus recursive style, Storage Classes in C. Preprocessor Directives in 'C': Macro, File Inclusion. Array: one dimensional array, pointer and array, Searching (Linear and Binary) and Sorting (Selection, Bubble, Insertion). Array of pointers, multidimensional array (2-D array).

UNIT III:

String and Structure: Introduction to string, pointers and strings, standard library function and user defined function, two dimensional array of character, array of pointer to string, limitation. Structure: Declaration, Accessing and memory representation of structure, array of structure, additional features of structure, pointer to structure. Union: Introduction, difference between structure and union, union of structure.

UNIT IV:

Console and File I/O: Types of I/O, console I/O functions, File I/O: data organization, file operation, file opening modes, file copy programming, String I/O files, Text file and binary file, low level disk I/O, Command line argument, detecting errors in reading / writing. Bitwise operators, Enumerated data types, typedef, typecasting, bit-field operator, volatile qualifier.

UNIT V

Dynamic memory allocation and Graphics in 'C': Malloc(), Calloc(), free(), realloc(), Sizeof() operator. Setting Text mode: textmode(), textbackground(), textcolor(), gotoxy(), cputs().Setting Graphics Mode: Drawing a Point on Screen, Drawing – lines, rectangle, circles, arcs, polygon. Functions to fill colors. Display Text in Graphics mode, outtext(), outtextxy(), justifying text. Computer animation: getimage (), putimage (), imagesize().

UNIT VI:

Advanced Concept in 'C': Different types of pointers, ROM – BIOS function, Elementary TSR's.

Text Books:

1. Programming Techniques Through 'C' : M. G. Venkateshmurthy (Pearson)
2. LET US 'C : Yashwant P. Kanetkar. (BPB).
3. Graphics Under C: Yashwant Kanetkar (BPB).
4. Writing TSR'S through 'C': Yashwant Kanetkar (BPB).
5. Programming in 'C': Ashok N. Kamthane (2nd Edition[Pearson])

Reference Books:

1. The Complete Reference C (4th Edition): Herbert Schildt [TMH]
2. The C Programming Language: Dennis Ritchie & Brain Kernighan [Pearson]
3. Programming with C : K.R.Venugopal & S.R.Prasad [TMH]
4. Programming in C: B. L. Juneja and Anita Seth (cengage learning)
5. A First Course in Programming with 'C': T. Jeyapoovan (Vikas)

*****