



B.Tech I Year (R13) Supplementary Examinations December 2017

**PROGRAMMING IN C & DATA STRUCTURES**

(Common to CE, ME, EEE, ECE, EIE &amp; IT)

Time: 3 hours

Max. Marks: 70

**PART – A**

(Compulsory Question)

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- 1 Answer the following: (10 X 02 = 20 Marks)
- What are the steps involved in software development life cycle?
  - What is a computer and describe its characteristics?
  - Explain identifiers in C language.
  - Explain nested if and switch statement syntax.
  - What are the different command line parameters?
  - List out the advantages and disadvantages of singly linked list.
  - What are the different types of data structures?
  - What are the main objectives of functions?
  - Explain fundamentals of pointers.
  - What is the difference between structure and union?

**PART – B**

(Answer all five units, 5 X 10 = 50 Marks)

**UNIT – I**

- 2 Explain the working of assignment operator, unary and ternary operator with example.

**OR**

- 3 How algorithm is different from flowchart? Write an algorithm and draw flowchart for finding greatest among three given numbers.

**UNIT – II**

- 4 (a) What do you mean by functions? Give the structure of the functions and explain about the arguments and their return values.  
(b) Write a C program that uses a function to sort an array of integers.

**OR**

- 5 Explain different types of error diagnostics and debugging techniques.

**UNIT – III**

- 6 Write about different types of storage classes with appropriate syntax and examples.

**OR**

- 7 Explain about file handling functions. Write the syntax for opening a file with various modes and closing a file with an example.

**UNIT – IV**

- 8 (a) Explain the process of declaring and initializing pointers. Give an example.  
(b) Write a C program that uses a pointer as a function argument.

**OR**

- 9 (a) Define structure and write the general format for declaring and accessing members.  
(b) Write a program to store and print name, address, roll no using structures.

**UNIT – V**

- 10 What is a stack? Explain two different representations of a stack. List the operations performed on a stack and write functions for implementing these operations.

**OR**

- 11 (a) Write the algorithm for evaluation of postfix expression.  
(b) Evaluate the following postfix expression:

752 + \* 415 -/-

