**UNIVERSITY COLLEGE OF ENGINEERING (BIT CAMPUS), TIRUCHIRAPPALLI-620 024**

**First Internal Assessment Test**

**Department of CSE / IT**

**Subject Code :** EC8393

**Subject Name :** FUNDAMENTALS OF DATA STRUCTURES IN C

**Date&Duration: 13.08.2018**& 1.30Hrs**Marks:50**

**Degree/Branch:** B.E/ECESec’A’ **Year/Semester:** II / III

**PART-A**

**Answer *All* Questions 7 x 2 = 14**

1. Define compiler and interpreter.

 A compiler is a special program that processes statements written in a particular programming language and turns them into machine language or "code" that a computer's processor uses.

An interpreter is a computerprogram that directly executes, i.e. performs, instructions written in a programming or scripting language, without requiring them previously to have been compiled into a machine language program.

1. What is the difference between while and do while loop?

Only difference between these two loops is that, inwhile loops, test expression is checked at first but, indo...while loop code is executed at first then the condition is checked. So, the code are executed at least once in do...while loops.

1. What are the rules for declaring variables?

Rules for naming variables:

* All variable names must begin with a letter of the alphabet or an. underscore( \_ ). ...
* After the first initial letter, variable names can also contain letters and numbers. ...
* Uppercase characters are distinct from lowercase characters. ...
* You cannot use a C++ keyword (reserved word) as a variable name.

1. State the Structure of ‘C’ program.

Basic Structure of a C Program: Documentation section : The documentation section consists of a set of comment lines giving the name of the program, the author and other details, which the programmer would like to use later.

1. Define strcmp() and strcat() with syntax.

The function, strcmp(), compares the strings, s1 and s2, and returns an integer indicating the result of the comparison. If the two strings are equal, it returns a zero value. ... Again, the standard library provides a function: STRING strcat(STRING s1, STRING s2)

1. What is the difference between getche() and getchar() function?

getch is the the function that waits for an input from the user. There is nothing like "getche" may be you have seen some functions names or variable names. both are used to take input character but have some difference. getche() give output without any buffer but the getch() give output with buffer.

1. What are data types in ‘C’?

Data Types in C

* char: The most basic data type in C. It stores a single character and requires a single byte of memory in almost all compilers.
* int: As the name suggests, an int variable is used to store an integer.
* float: It is used to store decimal numbers(numbers with floating point value) with single precision.

PART-B

Answer any three Questions 3 x 12 = 36

1. Explain in detail about various types ofOperators in ‘C’ with suitable example.

1. Arithmetic operators

2. Assignment operators

3. Relational operators

4. Logical operators

5. Bit wise operators

6. Conditional operators (ternary operators)

7. Increment/decrement operators

8. Special operators

1. What is control structure? Explain in detail about looping statements with example.

Flow of Control:

Flow of control through any given function is implemented with three basic types of control structures:

* Sequential: default mode. Sequential execution of code statements (one line after another) -- like following a recipe
* Selection: used for decisions, branching -- choosing between 2 or more alternative paths. In C++, these are the types of selection statements:
  + if
  + if/else
  + switch
* Repetition: used for looping, i.e. repeating a piece of code multiple times in a row. In C++, there are three types of loops:
  + while
  + do/while
  + for

The *function* construct, itself, forms another way to affect flow of control through a whole program. This will be discussed later in the course.

Some useful tools for building programs or program segments

* pseudocode - helps "think" out a problem or algorithm before trying to code it
* flowcharting - graphical way to formulate an algorithm or a program's flow
* stepwise refinement (top-down design) of algorithms

Logical Operators:

Selection Statements

1.The if/else Selection Statement

2. The switch statement

3. The Conditional Operator

1. Explain in detail about managing I/O operations with suitable examples.

1. Overview

2. Input and Output Data Transfer

3. Memory Mapped I/O

4. Device Driver

5. Summary

1. What is Array? Explain in details about types of array with suitable examples.

In programming, a series of objects all of which are the same size and type. Each object in an array is called an array element. For example, you could have an array of integers or an array of characters or anarray of anything that has a defined data type.

1. Single Dimensional Array
2. Two Dimensional Array
3. Three Dimensional Array
4. Character Array or Strings