# A

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. AC preprocessor directive begins with _____      CO1- R

   (a) #        (b) include        (c) main()        (d) Functions

2. If #include is used with file name in angular brackets      CO1- R

   (a) The file is searched for in the standard compiler include paths

   (b) The search path is expanded to include the current source directory

   (c) The search path will expand

   (d) None of the mentioned

3. Regarding the scope of the variables identify the incorrect statement:      CO2- R

   (a) Automatic variables are automatically initialized to 0

   (b) Static variables are automatically initialized to 0

   (c) The address of a register variable is not accessible

   (d) static variable cannot be initialized with any expression.

4. Which of the following uses structure?      CO2- R

   (a) Array of structures          (b) Linked Lists

   (c) Binary Tree             (d) All  the above.

5. What is the output of this C code? CO3- R

```c
#include <stdio.h>
   void main()
   {
      char *s = "hello";
      char *p = s;
      printf("%p\t%p", p, s);
   }
```

(a) Different address is printed    (b) Same address is printed

(c) Run time error    (d) Nothing

6. Give float *pf; int *pi; which of the following is true? CO3- R

(a) sizeof(pf) >sizeof(pi)    (b) sizeof(pf) <sizeof(pi)

(c) sizeof(pf) = = sizeof(pi)    (d) none of these above

7. What is the return value of getc()? CO4- R

(a) The next character from the stream is not referred by file pointer

(b) EOF for end of file or error

(c) Nothing

(d) None of the mentioned

8. What is the return value of putchar()? CO4- R

(a) The character written    (c) EOF if an error occurs

(b) Nothing    (d) Both character written & EOF if an error occurs

9. What is the advantage of bubble sort over other sorting techniques? CO5- R

(a) It is faster    (b) Consumes less memory

(c) Detects whether the input is already sorted    (d) All of the mentioned

10. The time complexity of a quick sort algorithm which makes use of median, found by an O(n) algorithm, as pivot element is CO5- R

(a) O(n2)    (b) O(nlogn)

(c) O(nloglogn)    (d) O(n)

PART – B (5 x 2= 10 Marks)

11. Enumerate the rules that apply to a function call. CO1- R

12. What is Extern? Write the syntax of "Extern". CO2- R

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13. Explain the effects of the following statement:                                                    CO3- R

   (a) double (*f) ();

   (b)a = ((float*) &x)

14. In #include directives, some file names are enclosed in angle brackets while    CO4- R
    others are enclosed in double quotation marks. Why?

15. Define sorting with its types.                                                                     CO5- R

PART – C (5 x 16= 80 Marks)

16. (a)  List the categories of functions and also mention the advanced  CO1- U      (16)
         features of functions

                                            Or

    (b)  Write a C Program to calculate fibonacci sequence using         CO1- U      (16)
         recursion

17. (a)  Construct a C program to maintain a record of "n" student details  CO2- U    (16)
         using an array of structures with four fields (Roll number, Name,
         Marks, and Grade). Each field is of an appropriate data type. Print
         the marks of the student use student name as input.

                                            Or

    (b)  (i) Write a program using pointers to read in an array of integers  CO2- U     (8)
         and print its elements in reverse order.
         (ii) Write a function (using pointer parameters) that reverses the  CO2- U     (8)
         elements of a given array.

18. (a)  Build a C program for the following concepts:                   CO3- U      (16)
         (i) Passing pointers to function.
         (ii) Array of Pointers.

                                            Or

    (b)  Write a C program to find the sum of all elements in an array   CO3- U      (16)
         using pointer.

19. (a)  Explain in detail about the various types of standard input and  CO4- U      (16)
         output functions.

                                            Or

    (b)  Discuss in detail about various string handling functions with an  CO4- U     (16)
         example program.

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20. (a) Write the algorithm for merge sort with example. CO5- U (16)

Or

(b) Write a C program to perform linear search and binary search CO5- U (16)