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**Question Paper Code: 50829**

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2017

Second Semester

Information Technology

15UIT209 - PROBLEM SOLVING AND PROGRAMMING TECHNIQUES

(Regulation 2015)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. What is the output of this C code?

```
#include <stdio.h>
int main()
{
void foo();
printf("1 ");
foo();
}
void foo()
{
printf("2 ");
```

(a) 1 2

(b) compile time error

(c) 1 2 1 2

(d) Depends on the compiler

2. #include <stdio.h> is called as

(a) Preprocessor directive

(b) Inclusion directive

(c) File inclusion directive

(d) None of these

3. Which of the following are themselves a collection of different data types?

(a) string

(b) structures

(c) char

(d) All the above

4. Which of the following uses structure?

- (a) Array of structures
- (b) Linked Lists
- (c) Binary Tree
- (d) All the above

5. What is the output of this C code?

```
#include <stdio.h>
int main()
{
char *str = "hello world";
char strary[] = "hello world";
printf("%d %d\n", strlen(str), strlen(strary));
return 0;
}
```

- (a) 11 11
- (b) 12 11
- (c) 11 12
- (d) x 11 where x can be any positive integer

6. Pointer is special kind of variable which is used to store \_\_\_\_\_ of the variable.

- (a) Value
- (b) variable name
- (c) data type
- (d) address

7. Which file is a sequence of bytes organized into blocks understandable by the system's linker?

- (a) object file
- (b) source file
- (c) executable file
- (d) text file

8. Which among the following is odd one out?

- (a) printf
- (b) fprintf
- (c) putchar
- (d) scanf

9. If the number of records to be sorted is small, then \_\_\_\_\_ sorting can be efficient.

- (a) Merge
- (b) Heap
- (c) Selection
- (d) Bubble

10. What is the worst-case time for binary search finding a single item in an array?

- (a) Constant time
- (b) Logarithmic time
- (c) Linear time
- (d) Quadratic time

PART - B (5 x 2 = 10 Marks)

11. Give the basic structure of C programming.
12. When structure is been used?
13. What is a pointer?
14. Difference between scanf and printf statement.
15. Which one is first sorting or searching? Why?

PART - C (5 x 16 = 80 Marks)

16. (a) What is function? Discuss in detail about the different types of C function arguments and return values with example. (16)

Or

- (b) Write a C program to find the factorial of a number using recursive function. (16)

17. (a) What are the storage classes in C? Mention the different types of storage classes and explain. (16)

Or

- (b) Write a C Program to accept and display five students information's such as StuName ,Stu\_Roll, Stu\_Marks using arrays of structures. (16)

18. (a) Write a C program to perform swapping among two number using call by value and call by reference. (16)

Or

- (b) Explain the concept of pointers to function with an example. (16)

19. (a) What are command line arguments? Write a C program to find the area of a rectangle using command line arguments. (16)

Or

- (b) Define File. Discuss the basic operations performed on files with syntax and example. (16)

20. (a) Elaborate the algorithm for sequential search with an example. (16)

Or

(b) Write down the algorithm for bubble sort and selection sort. (16)

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