Reg. No. :

Question Paper Code: 51829

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2016

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>
   double i;
    int main()
   {
    printf("%g\n",i);
    return 0;
   }
   ```
   (a) 0   (b) 0.000000
   (c) Garbage value   (d) Depends on the compiler

2. Which of the following are C preprocessors?
   (a))#ifdef   (b) #define   (c) #endif   (d) All of the above

3. User-defined data type can be derived by
   (a) struct   (b) enum   (c) typedef   (d) All of the above

4. What is the output of this C code?
   ```
   #include <stdio.h>
   struct student
   {
   char *c;
   ```

```
};
void main()
{
struct student *s;
s->c = "hello";
printf("%s", s->c);
}
```

    (a) hello   (b) Segmentation fault

    (c) Run time error   (d) Nothing

5. What type initialization is needed for the segment "ptr[3] = '3';" to work?

    (a) char *ptr = "Hello!";   (b) char ptr[] = "Hello!";

    (c) Both (a) and (b)   (d) none of these

6. How to call a function without using the function name to send parameters?

    (a) typedefs   (b) Function pointer

    (c) Both (a) and (b)   (d) none of these

7. The value of EOF is

    (a) -1   (b) 0   (c) 1   (d) 10

8. What is the output of this C code:
```
#include <stdio.h>
int main()
{
char *str = "hello, world\n";
printf("%d", strlen(str));
}
```

    (a) Compilation error   (b) Undefined behavior

    (c) 13   (d) 11

9. A search begins the search with the element that is located in the middle of the array is

    (a) Serial   (b) Random   (c) Parallel   (d) Binary

10. A sort which compares adjacent elements in a list and switches where necessary is

    (a) Insertion sort   (b) Heap sort   (c) Quick sort   (d) Bubble sort

PART - B (5 x 2 = 10 Marks)

11. List any four conditional directives.

12. Define the purpose of extern-storage class.

51829

13. State the usage of a void pointer.

14. What does the function void perror (const char *s) signify?

15. Define Quick sort.

PART - C (5 x 16 = 80 Marks)

16. (a) Explain Recursion and write a C program using recursion to calculate the factorial for a given number. (16)

Or

(b) Discuss in detail about preprocessing in C. (16)

17. (a) Write a program to store and access id, name and percentage for 3 students. Use structure array to store and display records for 3 students. (16)

Or

(b) Write a C program to add two complex numbers by passing structure to a function. (16)

18. (a) Discuss in brief about pointers and arrays in C. (16)

Or

(b) Write a program to search for the first occurrence of a specified character string in an array of character strings (use pointer arrays). (16)

19. (a) Explain the various file handling operations in C with suitable examples. (16)

Or

(b) Discuss in brief about the various command line arguments in C. (16)

20. (a) Write a program to sort numbers using Quick sort in C. (16)

Or

(b) Explain Binary search with a example program code. (16)

—————————

51829

51829