|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |  |

**Reg. No. :**

**Question Paper Code: 52089**

B.E. / B.Tech. DEGREE EXAMINATION, NOV 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. Find the output. *main() { extern int i; i=20; printf("%d",i); }*

(a) Linker error (b) Compiler error (c) Syntax Error (d) None of these

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

(a) Preprocessor directive (b) Inclusion directive

(c) File inclusion directive (d) None of these

3. User-defined data type can be derived by

(a) struct (b) enum (c) typedef (d) All of the above

4. Which of the following uses structure?

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

5. Whether the style of structures containing arrays can be implement?

(a) No (b) yes (c) may be (d) none of these

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. Find out extern struct student { int a; int b; int c; int d; }s={6,7,8,9}; void main()  *{ clrscr(); printf("%d %d %d %d",s.a,s.b,s.c,s.d); getch(); }*  What will be the output when you compile and run the above code?

(a) 6789 (b) 9876 (c) 0000 (d) Compiler error

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. 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

PART - B (5 x 2 = 10 Marks)

11. List any four conditional directives**.**

12. When structure is been used?

13. Is this the correct way for pointing to the first element of an array, *ptr = arr*?

14. Difference between scanf and printf statement.

15. Define Quick sort.

PART - C (5 x 16 = 80 Marks)

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

Or

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

17. (a) Distinguish between structure and union with suitable examples. (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) 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) 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) (i) Write a procedure to implement the algorithm of binary search. (8)

(ii) Sort the following numbers 54, 26, 93, 17, 77, 31, 44, 55, 20 using merge sort. (8)