

QUESTION 2005

1. Determine the outputs.

a) `f( )`
`{`
`static int i = 0;`
`i ++;`
`if (i <= 3)`
`{`
`printf ("n%d", i);`
`f( );`
`}`
`else`
`exit( );`
`}`
`main( ) {f( );}`

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b) `main( )`
`{`
`int x = 300, y, z;`

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```
if (x >= 500)
y = 300;
z = 200;
printf ("n%d%d", y, z);
}
```

y will print a garbage value. Z will print a value of 200

c) # define MAX(p,q)(p>q?p:q)

```
main()
{
    int x;
    x = MAX(3 + 2, 2 + 7);
    printf ("%d", x);
}
9
```

d) main()
{
float a = 5, b = 2;
int c;
c = a % b;
printf ("%d", c);
}

Illegal use of floating point in function main at the line c = a % b;

Correct output will be 1 by changing the above line to c = (int)a %(int)b;

e) main()
{
char c[2] = "A";
printf ("n%c", c[0]);
printf ("n% s", c);
}

Output will be two A in new line

f) main()
{
while ('x' < 'y')
printf ("n bca");
}

Infinite loop printing bca.

2. Write a program to test whether a given string is a palindrome.

See Topic: POINTERS, Short Answer Type Question No. 3.

3. Write a program to print the sum of the following series of n terms:

$$s = 1 + (1+2) + (1+2+3) + (1+2+3+4) + \dots$$

See Topic: FLOW OF CONTROL, Long Answer Type Question No. 5.

4. Write a program to display multiplication table of a number upto another given number.

See Topic: FLOW OF CONTROL, Long Answer Type Question No. 6.

5. Compare between:

- i) Malloc and Calloc
- ii) Structure and union
- iii) Global and local variable
- iv) Macro and function

i) See Topic: DYNAMIC MEMORY ALLOCATION, Short Answer Type Question No. 1.

ii) See Topic: STRUCTURES AND UNIONS, Long Answer Type Question No. 4(b).

iii) See Topic: FUNCTIONS, Long Answer Type Question No. 9(b).

iv) See Topic: FUNCTIONS, Short Answer Type Question No. 4.

6. Write a program which will take an integer as input and display the sum of its digits.

See Topic: FUNCTIONS, Short Answer Type Question No. 5.

7. Write a recursive function to find the factorial of a number and have that function called from main().

See Topic: FUNCTIONS, Long Answer Type Question No. 5.

8. Write a program to read an array of integer to print the maximum number in that array.

See Topic: ARRAYS, Long Answer Type Question No. 4.

9. Write a function to calculate x^n . Do not use the pow() function.

See Topic: FLOW OF CONTROL, Long Answer Type Question No. 7.

10. Write a program to take n numbers in an array and then print the p number among them.

See Topic: ARRAYS, Long Answer Type Question No. 5.

11. How to release memory allocated by dynamic memory allocation?

See Topic: DYNAMIC MEMORY ALLOCATION, Short Answer Type Question No. 2.

12. Write a program which will create a structure for keeping the following information of a student:

- i) Roll number
- ii) Name
- iii) Marks obtained.

Keep information of 3 students and display the names of the students with the marks of the students with the marks greater than a given number.

See Topic: STRUCTURES AND UNIONS, Long Answer Type Question No. 2.

13. State the differences between operators ++ and += ?

See Topic: OPERATORS, EXPRESSIONS & MANAGING INPUT OUTPUT, Short Answer Type Question No. 3.

14. Write a program which will define a 2D array and take input from the keyboard for all its elements. Then print the sum of elements of each row.

See Topic: ARRAYS, Short Answer Type Question No. 3.

15. Define function of → operator?

See Topic: STRUCTURES AND UNIONS, Question No. 1 of Short Answer Type Questions.

16. Write short notes on the following:

- a) Relation between pointers and arrays.
- b) Preprocessor directives
- c) Bubble sorting algorithm
- d) Self referential structure
- e) Linked list creation

a) See Topic: POINTERS, Long Answer Type Question No. 6.

b) See Topic: FUNCTIONS, of Long Answer Type Question No. 9(a).

c) See Topic: ARRAYS, Long Answer Type Question No. 9(a).

d) See Topic: STRUCTURES AND UNIONS, Long Answer Type Question No. 4(c).

e) See Topic: DYNAMIC MEMORY ALLOCATION, Long Answer Type Question No. 4(c).