

2023

Introduction to Programming

Full Marks: 100

Time: Three hours

Answer any Five questions.

1. Answer the following multiple choice questions:

10*2=20

i. Which is valid C expression?

- a) int my_num = 100,000; b) int my_num = 100000;
c) int my num = 1000; d) int \$my_num = 10000;

ii. Which of the following is not a valid C variable name?

- a) int number; b) float rate; c) int variable_count; d) int \$main;

iii. What is #include <stdio.h>?

- a) Preprocessor directive b) Inclusion directive
c) File inclusion directive d) None of the mentioned

iv. The C-preprocessors are specified with _____ symbol.

- a) # b) \$ c) " " d) &

v. scanf() is a predefined function in _____ header file.

- a) stdlib. h b) ctype. h c) stdio. h d) stdarg. h

vi. What will be the final value of x in the following C code?

```
1. #include <stdio.h>
2. void main()
3. {
4.     int x = 5 * 9 / 3 + 9;
5. }
```

- a) 3.75 b) Depends on compiler c) 24 d) 3

vii. Study the following program:

```
main()
{printf("javatpoint");
main();}
```

What will be the output of this program?

- a. Wrong statement
- b. It will Print javatpoint once
- c. It will keep on printing javatpoint
- d. D.None of the these

viii. **What is the output of this statement "printf("%d", (a++))"?**

- a. The value of (a + 1)
- b. The current value of a
- c. Error message
- d. Garbage

ix. **Study the following program: : Bodoland**

```
main()
{
  int a = 1, b = 2, c = 3;
  printf("%d", a += (a += 3, 5, a))
}
```

What will be the output of this program?

- a. 6
- b. 9
- c. 12
- d. 8

x. **How many times will the following loop execute?**

```
for(j = 1; j <= 10; j = j-1)
```

- a. Forever
- b. Never
- c. 0
- d. 1

2. i. What is the difference between while and do while loop? Explain the output if the conditions is wrong with an example in both while and do while loop.

5

- ii. What is an Array? Explain how to declare and initialize an array variable with the help of an example? 5
- iii. What is the purpose of the concept “Structure” in c programming? Explain in details with the help of an example. 5
- iv. Write an algorithm to check whether a number is odd or even. 5
3. i. Write a program to draw the Half Pyramid of * as shown below 10
- ```

*
* *
* * *
* * * *
* * * * *

```
- ii. Write a C program to check whether an alphabet is vowel or consonant using switch case. 10
4. i. Explain the use of printf() and scanf() function? 5
- ii. Write a program in C to swap the values of two numbers without using third variable. 5
- iii. Write down the steps involved in executing a c file. 5
- iv. Write a c program to find out the largest among three numbers. 5
5. i. Draw the block diagram of a digital computer and explain each component in brief. 10
- ii. Explain the different types of loops in C. Explain the syntax and give example for each of these. 10
6. i. Discuss various types of operators used in C. Explain each. 10
- ii. Write a program to take 5 integer values from the user and store them in an array. And also calculate the average. 10
7. Write short note on any **four** 4\*5=20
- RAM and ROM
  - Pointer
  - Low level language and High level language
  - FUNCTION
  - BREAK and CONTINUE
  - Compiler and Interpreter

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