

Computer Programming Set1

Mid Semester Exam

Instructions

1. This is a **closed book online proctored** exam.
 - a. You should not refer to books, notes or online resources.
 - b. You should not discuss questions or answers with anyone (including outsiders)
 - c. You should have your camera and microphone **ON** at all times and no headphones
2. Write the solutions clearly and legibly in A4 sheets, using pen (NOT pencil) and at the end of the exam you should submit the scanned copy of your solutions as explained by the faculty
3. **The name of the scanned copy should be the Roll No + '_' + Set No. (e.g., S20200010XYZ_Set1).**
4. **Write the name and the roll no. on each page of the answer sheets.**
5. Follow all other instructions given by the faculty during the exam

Objective Questions (1 mark each)

1. C program is converted to machine language with the help of
 - A. Compiler
 - B. Operating system
 - C. Assembler
 - D. Interpreter
2. Which of the following language translators converts source programs line by line?
 - A. Compiler
 - B. Assembler
 - C. Interpreter
 - D. None of these
3. Which of the following is the correct way of defining a symbolic constant PI?
 - A. #define PI 3.14
 - B. #define PI = 3.14

- C. #define 3.14 PI
- D. #define PI IS 3.14

4. A language is called high level language if _____

- A. It is a human readable language.
- B. The language has a big program size.
- C. The language has a small program size.
- D. It is difficult to understand and is not human readable.

5. Convert the decimal number 243 to binary

- A. 11110011
- B. 10111011
- C. 11011011
- D. 11101011

6. What value will be printed by the following piece of code in the program ?

```
int main()
{
    -----
    // x integer and ch character (an English letter)

    x = (ch>='a' && c<='z') ? ('A' + ch - 'a') : ch;

    printf("%d", x);
}
```

- A. ASCII value of character (not exactly (b) or (c))
- B. ASCII value of lower case letter
- C. ASCII value of upper case letter
- D. None

7. What is the output of the following piece of code ?

```
int x=10, y=20;
```

$x \wedge y \wedge x \wedge y;$

- A. $x=10, y=10$
- B. $x=20, y=10$
- C. $x=0, y=20$
- D. $x=10, y=20$

8. Assume 4-bit representation of a number (fixed point precession). What is the value of $((\sim x + 1) \& x) == x$, where $x=8$ integer ?

- A. 0
- B. 1
- C. 1000
- D. None

9. What is the value of following expression: $(v|u) \& \& a >> 1$, where $v=3, u=4, a=7$?

- A. 0
- B. 1
- C. 3
- D. 7

10. What is the value of integer x , after evaluating the following expression: $x = 1, (2, 3, 4);$

- A. 1
- B. 2
- C. 3
- D. 4

11. What is the output of the following program ?

```
void main() {  
    int x=40;y=30;z=80;  
    if(x<y<z)  
        printf("\n Hello world");  
    else  
        printf("\nGood by");  
}
```

- A. Hello world
- B. Good by
- C. Compile time error
- D. None of these

12. Which among the following is an unconditional control structure?

- A. do-while
- B. if –else
- C. goto
- D. for

13. Study the following C program

```
Void main ( ) {  
  
Int a= 0;  
  
For ( ; a );  
  
A++; }
```

What will be the value of the variable a, on the execution of the above program?

- A. 1
- B. 0
- C. -1
- D. None of these

14. Which operator in C is called a ternary operator?

- A. If..then
- B. ++
- C. ?
- D. ()

15. What is the output of C Program with switch statement.?

```
int main()  
  
{  
  
    int a=3;
```

```
switch(a)    {  
  
    case 2: printf("Hello"); break;  
  
    case default: printf("IIITS ");  
  
    }  
}
```

- A. Hello
- B. Hello IIITS
- C. No output
- D. Compiler error

Descriptive Questions (10 marks each)

1. What is a language translator? What are the two types of language translators for high level languages and what are the differences between them?
2. Write C program logic to swap the first and the last digit of a given 5 digit positive number. For example, input: 12345 and Output: 52341
3. Explain the following using general syntax and example.
 - i) if ii) if-else iii) nested if-else