

Indian Institute of Information Technology, Surat
Mid-Semester Examinations, September 2018

B.Tech-I (Semester-I), CSE and ECE

Course: Fundamentals of Computers and Programming (CS 101)

Dated: 24/09/2018

Time: 09:00 hrs to 10:30 hrs

Max Marks: 30

Instructions:

1. Write your B Tech Roll No and Admission No and other details clearly on the answer books while write your BTech Admission No on the question paper, too.
2. Assume any necessary data but give proper justifications.
3. Be precise and clear in answering the questions.

Q.1 Answer the following: (Any Three)

[06]

- a. Discuss difference between 2nd generation and 4th generation of computers.
- b. Enlist different types of buses. Explain each in brief.
- c. What is computer architecture? Enlist different types of registers and functions of each
- d. What is the difference between an unsigned integer and signed integer? Explain when underflow and overflow occurs?

Q.2 Answer the following:

[08]

- a. $(A27E9)_{16} + (6FB43)_{16} = ()_{16}$
- b. $(64)_7 - (55)_7 = ()_7$
- c. Subtract $(24)_{10}$ from $(18)_{10}$ using 2's complement method.
- d. $(111100011.11001)_2 = ()_{16}$

Q.3 Answer the following: (Any Three)

[12]

- a. Draw a flowchart for finding the *largest of three numbers* and also do the translation of the flowchart into a C program.
- b. Identify syntax errors in the following program. After corrections, what output would you expect when you execute it?

```
#define PI 3.14159
main()
{
    int R,C;
    float perimeter;
    float area;
    C = PI;
    R = 5;
    Perimeter = 2.0*C*R;
    Area=C*R*R;
    printf("%f", "%d", &perimeter, &area)
}
```

- c. Determine the value of each of the following logical expressions if $a=5$, $b=10$ and $c=-6$.

- i. $\sim a > b \ \&\& \ a < c$
- ii. $a < b \ \&\& \ a > c$
- iii. $a == c \ || \ b > a$
- iv. $b > 15 \ \&\& \ c < 0 \ || \ a > 0$

d. Write a C program to print the following pattern.

```
1
1 4
1 4 9
1 4 9 16
1 4 9 16 25
```

Q.4 Answer the following: (Any Two)

[4]

a. What will be printed by following program?

```
void main()
{
    int x=5, y=10, z=10;
    x = y == z;
    printf("%d", x);
}
```

b. What is the output of the following code?

```
int m = 0;
do
{
    if(m > 10)
        continue;
```

```
    m=m+10;
}while(m<50);
printf("%d", m);
```

c. Identify errors, if any, in each of the following array declaration statements.

- i. int score(100);
- ii. float values[10,15];
- iii. char name[15];
- iv. int sum[];

