

Veer Surendra Sai University of Technology

Department of CSE & IT

Mid Term Examination October 2015

1<sup>st</sup>Semester B. Tech (section: H, I, J, K, L, M, N)

Sub: Computer Programming

Max. Marks: 20

Time: 2 Hrs.

Note: Q.No. 1is Compulsory. Answer any three from the rest of the questions.

Q1.

[ 1x5 ]

a) Convert the following

i)  $(11100011)_2 = ( \quad )_{16}$

ii)  $(5427)_8 = ( \quad )_2$

b) State the difference between declaring a variable and initializing a variable with suitable examples.

c) Find the output:

|                                                                                             |                                                                                                             |
|---------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| <pre>i) int num=212,i; for(i=1;i&lt;=2;i++) { num = num&gt;&gt;i; printf("%d",num); }</pre> | <pre>ii) int a=2,b=3,c=4; if (a=b&gt;c) { c=c+5; a=a+5; } -- b; printf("a=%d \t b=%d \t c=%d",a,b,c);</pre> |
|---------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|

d)

i) Evaluate the following:

```
int x=3, y=5, z=7;
```

```
int a, b;
```

```
b = ++x * (y-3) / 2 - z-- * y; = 4 * 2 - 6 * 5 = 4 - 30
```

```
a = x*2 + y / 5 - z * y;
```

```
printf ("\n a=%d", a);
```

```
printf ("\n b=%d", b);
```

ii) Which of the following operator(s) cannot be used with a floating point number. (+, -, \*, /, %)

e) Find the output of the following program:

```
int main()
{
    inti=1;
    for( ; ; )
    {
        printf("%d \n", i++);
        if(i>10)
            break;
    }
    return 0;
}
```

Q2.d) Describe the steps involved in the execution of a C program. [2.5 X 2]

ii) Writing a program to find the following pattern:

```
1
2 3
3 4 5
4 5 6 7
```

Q3.b) What is the difference between break and continue statement. [2.5 X 2]  
Explain with suitable programs.

ii) Write an algorithm(pseudo code) to check whether a number is palindrome or not. A palindromic number is a number that remains the same when its digits are reversed. For examples 121, 12321, 16461 etc.

Q4.b) Draw a flowchart for finding the Greatest Common Divisor (GCD) [2.5 X 2]  
of two numbers.

iii) What is the necessary of type conversion? Explain different types of conversion.

Q5.i) Write a program to calculate the grade of a student by considering the following range of marks [2.5]

$$\text{Grade} = \begin{cases} O, & 90 \leq \text{Mark} \leq 100 \\ E, & 80 \leq \text{Mark} < 90 \\ A, & 70 \leq \text{Mark} < 80 \\ B, & 60 \leq \text{Mark} < 70 \\ C, & 50 \leq \text{Mark} < 60 \\ D, & 40 \leq \text{Mark} < 50 \\ F, & \text{Otherwise} \end{cases}$$

ii) a) State the difference between syntax error and logical error. [1+1.5]

b) The range of values for a signed data type is less than that of unsigned data type. Justify the statement with suitable example.

Q6.i) A company decides to give bonus to all its employees on Dussehra. A 5% bonus on salary is given to the male workers and 10% bonus on salary to the female workers. Write a program to enter the salary and gender of the employee. If the salary of the employee is less than 10,000 then the employee gets an extra 2% bonus on salary. Calculate the bonus that has to be given to the employee and display the salary that the employee will get. [2.5]

ii) Discuss the different levels of languages with their advantages and disadvantages. [2.5]