



Name :
Roll No. :
Invigilator's Signature :

CS/B.TECH (BME)/SEM-4/CS-408/2011

2011

INTRODUCTION TO PROGRAMMING

Time Allotted : 3 Hours

Full Marks : 70

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

GROUP - A

(Objective Type Questions)

1. Answer the following questions :

10 × 1 = 10

- i) What is macro ?
- ii) What is void pointer ?
- iii) Instruction block in a do-while loop is executed..... times. (Fill in the blank)
- iv) What is odd loop ?
- v) What is stack overflow ?
- vi) The statement used to take control to the beginning of the loop is
 - a) break
 - b) exit
 - c) continue
 - d) none of these.
- vii) If a is an integer variable, $a = \frac{5}{2}$ will return the value of a as
 - a) 2.5
 - b) 5
 - c) 2
 - d) 0.



viii) The number of bytes reserved for the declaration
`int a [20][10]` is

- a) 200
- b) 10
- c) 20
- d) none of these.

ix) What would be the output of the following ?

```
main ( )  
{  
    int i = - 3, j = - 2, k = - 1, x ;  
    x = ++ k && ++ j && ++ i ;  
    printf ( "%d %d %d %d", x, i, j, k ) ;  
}
```

- a) 0 -2 -1 0
- b) 1 -2 -1 0
- c) 0 -3 -2 -1
- d) none of these.

x) What would be the output of the following ?

```
main ( )  
{  
    if ( 0 )  
        printf ( "False" );  
    else  
        printf ( "True" );  
}
```

- a) false
- b) true
- c) infinite loop
- d) none of these.



GROUP - B

(Short Answer Type Questions)

Answer any *three* of the following. $3 \times 5 = 15$

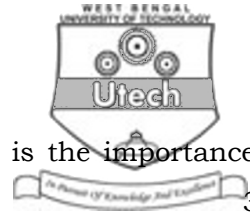
2. What is the difference between structures and unions ?
3. Write a program in C to convert a decimal number into its hexadecimal counterpart.
4. Explain call by value and call by reference parameter passing with example.
5. Explain precedence and associativity of operators with suitable example.
6. What are the different types of overloading in object oriented programming ?

GROUP - C

(Long Answer Type Questions)

Answer any *three* of the following. $3 \times 15 = 45$

7. a) What are the differences between stack and queue ? 3
b) Write down push () and pop () functions for implementing stack. 6
c) What is recursion ? Write down a program for implementing recursion. 2 + 4
8. a) With requisite examples, explain the significance of the following declarations in C++ : 6
i) Public
ii) Private
iii) Protected.
b) What is the advantage of friend function ? Supplement with example. 4



- c) Explain with suitable example, what is the importance of encapsulation. 3
- d) In which situation is a member function in a class declared inline ? 2
9. a) Define data type. Classify it and give example of each type. 2 + 2
- b) Why are type casting and type conversion necessary ? Justify your answer with examples. 2 + 2
- c) In C, explain the following :
- i) Various loop control structures 2
- ii) Conditional control structure 2
- iii) Different types of operator. 3
10. a) What is command line argument ? 2
- b) Write a program to write a text into a file. Find all the vowels from that text to store them into another file and display them. 6
- c) Explain different file operation modes. 4
- d) Write down the differences between macro, function, inline function. 3
11. a) What is function overriding ? Explain with an example. 5
- b) Write down the characteristics of friend function. 3
- c) Why are the constructors and destructors used in C++ ? Explain with an example. 5
- d) What is the difference between private and protected access specifier ? 2