

Name :
Roll No. :
Invigilator's Signature :

**CS/B.Tech(BME-Old)/SEM-4/CS-408/2012
2012**

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)
 - 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. $3 \times 5 = 15$

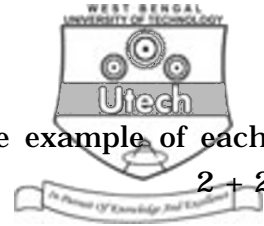
2. What is the difference between structures and unions ?
3. Define class and object. Show their difference with a suitable example.
4. Explain call by value and call by reference parameter passing with example.
5. Explain precedence and associativity of operators with suitable example.
6. What are the 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) How are pointers used for serving the purpose of an array ? Supplement with suitable example. 2 + 1
- b) What is run-time memory allocation ? How is it advantageous and disadvantageous in respect of compile-time memory allocation ? 2 + 2
- c) What is the role of header specification in C ? 2
- d) In respect of file handling, explain the following access modes : 3 × 2
- i) Sequential
 - ii) Indexed sequential
 - iii) Random.
11. a) What are the different types of functions used in 'C' programming ? Explain with example. 1 + 2
- b) Write a function to implement Fibonacci series. 5
- c) Write down four features of structural programming language. 2
- d) Write a program to calculate sum of digits of a number. 5

