| \                  |              | <u>Utean</u> |
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|                    | CS /P Took ( | CC 400/9010  |

## 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

## ( Multiple Choice Type Questions )

- 1. Choose the correct alternatives for the following :  $10 \times 1 = 10$ 
  - i) What would be the output of the following?

```
main()
{
    int x, y, z;
    z = (x=6, y=2, x+y);
    printf ("z = %d, z);
}
```

#include <stdio.h>

a) z = 5

b) z = 3

c) z = 8

d) z = 1.

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```
ii) main()
```



iii) main() {
 int a = 4;

a = mul(a = mul(a = mul(a)));

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

int mul(int b)

{
return (b\*2);

a) 8

}

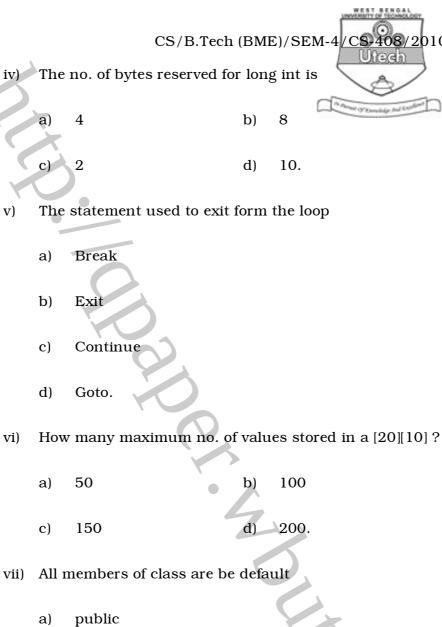
b) 16

c) 32

d) 64.

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2



public a)

4

Break

Exit

Goto.

50

150

v)

a)

b)

c)

d)

a)

c)

vi)

- b) private
- c) protected
- d) both (a) and (b).

viii) Example of pointer to a pointer is



a) &a

b) \*a

c) \*\*a

d) ->a.

ix) Example of derived data type in c is

- a) array
- b) enum
- c) typedef
- d) none of these.

x) Function used for inheritance in C++ is

- a) Virtual function
- b) Inline function
- c) Friend function
- d) Constructor.



#### **GROUP - B**

### (Short Answer Type Questions)

Answer any three of the following.

 $3 \times 5 = 15$ 

- 2. Write down the user defined data types and derived data types in C. Give an example of typed data type.  $1\frac{1}{2} + 1\frac{1}{2} + 2$
- 3. What is structure ? Write a program for finding the maximum wages and name of the employee. Use dynamic memory allocation. 1+4
- 4. Write down the difference between entry control loop and exit control loop. Give example of exit control loop. What is odd loop? 2+2+1
- 5. Write a program of passing address to a function. 5
- 6. What is recursion? Write down a program for implementing fibonacci series by using recursion technique. 1+4

#### GROUP - C

## (Long Answer Type Questions)

Answer any three of the following.

 $3 \times 15 = 45$ 

- 7. a) Writer down the advantages of using User defined functions.
  - b) Give an example of friend function.
  - c) Differentiate class and object.
  - d) Write down a program in C for converting the binary number into decimal number. 2 + 5 + 3 + 5

- 8. a) Write down the three basic features of object oriented programming. Discuss each of them briefly.
  - b) What is the need for OOP over Structured programming?
  - c) Write the difference between structure and class.
  - d) Write a program in C++ for matrix addition using operator overloading. 5 + 3 + 2 + 5
- 9. a) What is inheritance in OOP?
  - b) Write down different types of inheritance.
  - c) Give an example of multilevel inheritance.
  - d) Discuss operator overloading with suitable example.

1 + 4 + 5 + 5

- 10. Write short notes on any *three* of the following:  $3 \times 5$ 
  - a) Inline Function.
  - b) Friend Function.
  - c) Virtual Function.
  - d) Data hiding.
  - e) Destructor.

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- 11. a) Discuss the visibility of public, private and protected members.
  - b) What is
    - i) Automatic Variable
    - ii) Static Variable
    - iii) External Variable
    - iv) Register Variable ?

3 + 12