*Name* : .....

*Roll No.* : .....

*Invigilator's Signature :* .....

**CS/B.TECH/OLD/SEM-2/CS-201/2013**

# 2013

# INTRODUCTION TO COMPUTING

*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 any *ten* of the following : $10 \times 1 = 10$

i) ASCII value of *a* is

a) 65 b) 32

c) 97 d) 48.

ii) What will be the output of the following program ?

```
main ( )
{     float a = 12·25, b = 13·65;
      if (a = b)
          printf ("a and b are equal");
      else
          printf ("a and b are not equal");
}
```

a) *a* and *b* are equal b) *a* and *b* are not equal

c) compiler error d) none of these.

iii) What will be the output of the following program ?

```
main ( )
{    int x = 3, z;
     z = x++ +  ++x;
     printf ("x=%d z=%d", x, z);
}
```

a) $x = 8\ z = 5$ b) $x = 5\ z = 6$

c) $x = 5\ z = 8$ d) $x = 5\ z = 7$.

iv) What is the range of unsigned short int ?

a) 0 to 65535 b) 0 to 255

c) – 128 to + 127 d) none of these.

v) What is the associativity of the operation [ ++ ] ?

a) Right to left b) Left to right

c) both (a) and (b) d) none of these.

vi) ALU is a part of a

a) input device b) output device

c) memory d) CPU.

vii) RAM stands for

a) Random Access Memory

b) Read Access Memory

c) Readwrite Access Memory

d) none of these.

viii) Which one is the special operator ?

a) ? :  b) sizeof ( )

c) <<  d) ++

ix) What is the output of the following code ?

```
int i = 100;
while ( i < 100 )
{    i = i + 1;
     printf ("%d", i);
}
```

a) 100  b) No output

c) 101  d) 99.

x) What is the output of the following code ?

```
main ( )
{   int n1 = 30, n2 = 40;
    n2 = n1;
    n2? (n1, n2)?n1 : n2 : n2 ;
    printf ("%d%d", n1, n2);
}
```

a) 30 30  b) 30 60

c) 60 20  d) None of these.

xi) Number of bytes required for long double is

a) 8 b) 10

c) 4 d) 12.

xii) The union holds

a) one object at a time b) multiple objects

c) both (a) and (b) d) none of these.

xiii) The function used to detect the end of file is

a) feof ( ) b) ferror ( )

c) fputs ( ) d) fgetch ( ).

xiv) What will be the output of the following program ?

```
main ( )
{    struct  employee
     {
        char name [ 25]
        int age;
        float bs;
    }
    struct employee e;
    e.name = "Hacker";
    e.age =25;
    printf ("%s%d", e.name, e.age);
}
```

a) Hacker 25 b) Compiler error

c) 25 Hacker d) None of these.

xv) What will be the output of the following program ?

```
main ( )
{
    static char str [ ] = "Limericks";
    char * s;
    s = &str[6]-6;
    while (*s)
    printf ("%c", *s++);
}
```

a) Limerics b) Compiler error

c) *L* d) None of these.

**GROUP – B**

**( Short Answer Type Questions )**

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

2. Explain precedence and associativity of operators with suitable examples.

3. Discuss about basic data types used in *C*.

4. Distinguish between while and Do-While loop.

5. Write a C program for checking whether a number is prime or not.

6. What is recursion ? Explain with an example.

**GROUP – C**

**( Long Answer Type Questions )**

Answer any *three* of the following. 3 × 15 = 45

7. a) What is ternary operator ? Explain with an example.

   b) Explain 'Call by Value' and 'Call by Reference' with example.

   c) Write a *C* function to swap two integer data and call the function from the main ( ) function. 5 + 5 + 5

8. a) Write a C program to arrange a set of *n* numbers in ascending order.

   b) Draw a flow chart to determine the largest of two numbers.

   c) What do you mean by algorithm ? Explain with an example. 5 + 5 + 5

9. a) Convert :

      i) $(427)_{10}$ to octal

      ii) $(110010 \cdot 1011)_2$ to hexadecimal

      iii) $(12 \cdot 32)_{10}$ to binary

      iv) $(234)_5$ to $(?)_7$.

   b) Subtract 10111 from 110011 using 2's complement method.

   c) Draw the logic diagram and truth table of NAND and XOR gate. 5 + 5 + 5

10. a) Distinguish between Array and Structure.

    b) Write a *C* program to copy the content of a textile 'file1.txt' into another 'file2.txt'.

    c) Write a *C* program to find the GCD of two numbers.

5 + 5 + 5

11. Write short notes on any *three* of the following : 3 × 5

    a) Dynamic memory allocation

    b) Pointer

    c) Storage Classes in *C*

    d) Macro

    e) Two Dimensional Array.

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