This Question Paper consists of 6 questions and 6 printed pages.

Roll No. ☐☐☐☐☐☐☐☐☐☐☐☐

COMPUTER SCIENCE
(330)

Day and Date of Examination ....

Signature of Invigilators 1. ....

2. ....

General Instructions :

1. Candidate must write his/her Roll Number on the first page of the question paper.

2. Please check the question paper to verify that the total pages and total number of questions contained in the paper are the same as those printed on the top of the first page. Also check to see that the questions are in sequential order.

3. Making any identification mark in the answer-book or writing Roll Number anywhere other than the specified places will lead to disqualification of the candidate.

4. Write your Question Paper Code No. 50/SS/A, Set Ⓐ on the answer-book.

COMPUTER SCIENCE

(330)

Time : 3 Hours]   [Maximum Marks : 60

Note : (i)   Answer *all* questions.

(ii)   Marks allotted to each question are given in the right-hand margin.

(iii) Use C++ programming language to answer the programming questions.

1. Define the following terms briefly :   1×5=5

(a)   Output devices

(b)   OMR

(c)   ARPANET

(d)   Dragging

(e)   Communication protocol

2. *(a)* Differentiate between the following :   2×3=6

(i)   Data and Information

(ii) Machine language and Assembly language

(iii) LAN and WAN

(b) List the basic objectives of FTP.   4

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3. *(a)* Name the header files to which the following built-in functions belong :   1×4=4

    (i) sqrt()

    (ii) isalnum()

    (iii) strcpy()

    (iv) putchar()

  (b) *(i)* Evaluate the following expressions :   1×3=3

      (1) 5*3/6

      (2) 6·2*5/2

      (3) 6+5*3

    (ii) Find error(s), if any, in the following program and rewrite the corresponding correct code underlining each correction made :   3

```
#include (iostream.h)
void main
(       a, b int;
        M float;
        cin>>a;
        b = 2*a;
        if (a => b)
            m = b+1;
        else m = a–1;
        cout>>a+b+m;

}
```

4. *(a)* What is a structure? Write a structure specification in C++ for the record given below :   4

    Code : A string of 5 characters (including Null character)
    Desc : A string of 25 characters (including Null character)
    Cost : Integer
    Margin : Integer

  Call this structure ITEM.

(b) Give the output for the following programs : 3×2=6

    (i)
```
#include <iostream.h>
#include <conio.h>
void main()
{
        int x = 10, y = 10;
        while (x)
        {       x--;
                if (x == 7)
                {       cout<<y<<"*\n";
                        break;
                }
                else cout<<y--<<"#\n";
                y--;
        }
}
```

    (ii)
```
#include <iostream.h>
#include <conio.h>
void sub(float &x)
{
        x += 2;
        cout<<"\nx = "<<x;
}
void main()
{   clrscr();
        float x = 5·8;
        cout<<"\nx = "<<x;
        sub(x);
        cout<<"\nx = "<<x;
        getch();
}
```

5. *(a)* Write a program in C++ that will input 10 numbers from the user in a one-dimensional array and then sort this array in ascending order using selection sort. The program should then display the sorted array. 5

(b) A binary file "BOOKS.DAT" contains structure variables corresponding to the following structure :

```
struct Book
{       char Title [50];
        int Copies_Available;
};
```

Write a program in C++ to display all the records for which Copies_Available is more than 50. 5

6. Answer the following questions briefly : 3×5=15

(a) Differentiate between implicit and explicit types of conversion with suitable examples.

(b) Differentiate between procedural language and object-oriented programming language with at least one example of each.

(c) Declare a class FLIGHT with the following descriptions :

Private members :

A data member FlightNumber of type integer

A data member Origin of type string

A data member Destination of type string

Public members :

A function GetData() to enter the data

A function SHOWINFO() to show the contents of all the data members

(d) State three major reasons of introducing inheritance in object-oriented languages.

(e) There is an error in the following program segment :

```
void f1()
{       int a[10] = {0};
        int *b = a;
        a++;
        b++;
}
```

In which statement does this error occur? What is the error?

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