This Question Paper consists of 8 questions and 6 printed pages.

Roll No. ☐☐☐☐☐☐☐☐☐☐☐☐☐

Code No. **54/HIS/2**

Set **A**

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 Question 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. 54/HIS/2, Set A 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 :   1×5=5

(a) Cache memory

(b) Taskbar

(c) Software

(d) Registers

(e) 3 GL'S languages

2. Differentiate between the following :   2×3=6

(a) Bus network and Star network

(b) Data processing and Data processing system

(c) Half-duplex and Full-duplex

3. Differentiate between the following :   2+2=4

(a) Procedural language and Object-oriented programming

(b) An object and A class

4. *(a)* Write the difference between / operator and % operator.   1

(b) Write the equivalent C++ expressions for the following algebraic expressions :   2

     (i) $\dfrac{cb^2 \quad 2ac}{3a}$

     (ii) $\dfrac{4}{3}x^3$

(c) Write the given code using conditional operator :   2

```
if(x>y)
        z=x*x;
else
        z=y*y;
```

(d) Write a program to accept marks of 5 subjects from the user and calculate and display the total marks and percentage.   4

(e) Write the output of the given program (assume that all header files are included) :   2

```
void main()
{
        int x=7,y,z;
        y=++x+3;
        cout<<x++<<","<<++y<<endl;
        z=y- -+7;
        cout<<++z<<","<<- -y<<endl;

}
```

5. *(a)* Write a program to accept an integer array of 10 size elements and sort and display the array using bubble sort technique.   4

(b) Write the output of the given program (assume that all header files are included) :　2

```
void main()

{
        int a[5]={2,3,4,5,6},e=0,o1=0;
        for(int i=0; i<5;i++)
        if(A[i]%2==1)
        o1=o1+a[i];
        else
        e=e+a[i];
        cout<<"Sum="<<e<<endl;
        cout<<"Sum="<<o1<<endl;

}
```

6. *(a)* Write a function in C++ Table() which will take a number as parameter and print the table of the number.

(For example, if the number is 5, then output should be 5,10,15,20,25,30,35,.......,50.)　4

(b) Write the difference between static variable and register variable. Also write an example.　3

(c) Declare the structure Mall containing following members :

　shopno, shopname, rent

Write a program to implement this structure and accept the 10 records of the shops and display all the records of the shops.　3

(d) Define the class history with the following specifications :　3

　Private members of the class :

recordno	:	numeric
source	:	string of 25 characters
location	:	string of 50 characters
year	:	numeric

Public members of the class :

- Constructor function to initialize the data members of the class with the following data :

    recordno as 1001, source as "indus valley", location as NULL and year as 234.

- showall() function to display all the members on the screen.

(e) Consider the following classes declaration and answer the questions given below :

```
class Music
{
int no;
char type[60];
public:
Music();
void in();
void disp();
};
class Video : public Music
{
char singername[10];
int duration;
public:
Video();
void enter();
void show();
};
```

(i) Which type of inheritance is it?   1

(ii) Which class constructor will be called first when the object of class Video will be declared?   1

(iii) Write the members which can be accessed by the object of class Video.   1

7. *(a)* Write the output of the given program : 3

```
#include<iostream.h>
void main()
{
char*ptr,str[]="ASIA";
ptr=str;
for (int i=0; str[i]!='\0';i++)
cout<<(ptr+i)<<endl;
}
```

(b) Explain the new file opening method. 1

(c) Write a C++ program to write the 5 records to the binary file "store.dat" at the bottom of the file : 4

```
class store
{ int stno;
char stname[50];
float area;
public:
void indata()
{
        cout<"enter details\n";
        cin>>stno;
        cin>>stname;
        cin>>area;
}
void outdata()
{
        cout<<stno<<stname<<area;
}
};
```

8. Justify the following features of Java : 4

(a) Dynamic

(b) Secured

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