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SESSION ENDING EXAMINATION, 2017–18

CLASS – XI   234

COMPUTER SCIENCE   Sl. No. ....

TIME – 3 HOURS]   [MAX. MARKS – 70

General Instructions :

(i)   All questions are compulsory.

(ii)   Marks are indicated against each question.

(iii)   Programming Language : C++

1. (a)   Explain Firmware.   1

    (b)   Arrange the following in chronological order (devices should be arranged in the order of their invention time) :   1

          IC, transistor, VLSI, LSI

    (c)   What is GUI ?   1

    (d)   What is USB ?   1

    (e)   Convert $(52.125)_{10}$ to binary number.   1

    (f)   What are utility softwares ? Write any one example.   1

    (g)   What is Operating System ? Explain multiprogrammed Operating Systems. 2

    (h)   Differentiate between compiler and Interpreter. Write one example of interpreter and compiler based language.   2

2. (a)   What is structured programming ? Write its two advantages.   2

    (b)   What is free-formatting ?   1

(c)   What do you understand by dangerous error ?   1

(d)   What is the difference between internal and external documentation ?   2

(e)   Differentiate between runtime error and logical error.   2

(f)   Write any four guidelines to write a good program.   2

(g)   Draw a flow chart for checking whether a given integer is even or odd.   2

(a)   Write the names of tokens generated by following :   2

     (i)   Rate

     (ii)   "Rate"

     (iii)   'Rate'

     (iv)   ;

(b)   Explain cascading of output operators.   1

(c)   What are data types ? Give examples two fundamental data types.   2

(d)   What do you understand by dynamic initialization ? Give one example.   1

(e)   What is inheritance ?   1

(f)   Write the corresponding C++ expressions for the following mathematical expression :   1

     (i) $u^2 + 2as$

     (ii) $e^{|2x-y|}$

(a)   What do you mean by type conversion ? What are its types ?   2

(b)   What will be the value of the following, if j=6 initially ?   1

     (2 * j++) %1_2 (2*j++)%12

(c)   What is the result of the following expression If x=5 and y=10 ?   1

     x>y ?cout<<x : cout<<y;

(d) Rewrite the following program after removing syntax error(s) (if any).   2

```
#include(iostream.h)

voiddisp( int b[5], int n)

    {

for(i=0; i<n; i++)

cout<<a[i]<<"\t";

cout>>endl;

    }

void main()

    {

int a[5]={ 1,2,3,4,5};

for(inti = 4: i>=0: i--)

a[i] += i;

disp(a[5], 5);

cout<<"\n End of program";

    }
```

5.   (a) How many times will the following loop run ?   1

```
for(i=10 ; i<=50 ; i+=10)
```

(b) Write a program that inputs three sides of a triangle and checks whether it is equilateral, isosceles or scalene.   2

(c) Rewrite the following code fragment using switch case statement :   2

```
if (ch =='O')

    gp=10;
```

else if (ch == 'E')

　　gp=9;

else if (ch == 'G')

　　gp=8 ;

else if (ch == 'A')

　　gp=7;

else

　　gp=0 ;

(d)　Explain the difference between break and continue statements.　2

(d)　Write a program to calculate HCF of two numbers.　3

6.　(a)　How many bytes will be required by a defined as :　1

　　　long a[50];

(b)　What is array ? How are the elements of array accessed ?　2

(c)　Write a program to find the smallest number in a 1D array.　4

(d)　How many bytes will be required to store the array str defined as follows in the memory ?

　　　char str[ ][10]= {"Shivaji", "Raman", "Subhash", "Tagore"};　1

(e)　What will be the output of following program ? Assume all required header files are included.　2

```
void main()
{  inti, j ;
int a[3][3] = { 1,  2,  3,
                4,  5,  6,
                7,  8,  9};
```

```
for ( i = 0; i<3; i++)

for ( j = 0; j<3; j++)

if(i+j< 2)

a[i][j] + = 2;

else

a[i][j] - = 2;

for ( i = 0; i<3; i++)

{

cout<<endl;

for ( j = 0; j<3; j++)

cout<<"   "<<a[i][j];

}

}
```

7.   (a)   How many times will the function cal() be called in the following program ? 1

```
int  a=10;

void cal (int d )

    {

if( d<=0)

return 0;

else

return d + cal(d-3);

    }

void main()
```

```
        {
        call(a);
        getch();
        }
```

(b) Write the names of header files to which the following functions belong to : 1

(i)   strlen()

(ii)   abs()

(c) Find out the formal parameters and actual parameters in the following code and also write the output of the code. 2

```
int a = 10;
void show(int b, int c)
{
cout<<"\n"<<a<<" "<<b<<" "<<c;
}
void main()
{
show (a, 5);
}
```

(d) Explain static and Dynamic initialization of variable with example. 2

(e) Write the output of following program. Assume all header files are included. 2

```
void change(int&a, int b=100)
{ b = a+b;
a+=10;
if ( b >= 100)
```

```
cout<<"\n" << a <<" "<<b;}

void main()

{  int a=5, b=10;

change(a);

change(a, b);

cout<<"\n"<<a<<" "<<b;}
```

(f)   Write a function to count the number of digits in a string.   2

(g)   What is a structure ? Define a structure student with following data members : 4

rollno   of type integer

name   of type string

address   of type string

marks   an array of 5 integers

Also define a function calper( ) that accepts an object of structure student and calculates and returns the percentage on the basis of his/her marks.

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