**Sample Paper 2013**

**Subject : Computer Science C++**

**Class: XIIth**

Time 3hrs M.M 70

**Q1. A)** What is Difference between syntax errors and semantic errors 2

Q1B) Give the Header files to run the following code. 1

void main()

{

char nm[20];

gets(nm);

gotoxy(10,20);

puts(nm);

}

Q1.C Find the Errors in the following program code and rewrite the correct code. 2

#Include<iostream.h>

#define max=10

void main()

{

int ar[max];

max++;

}

Q1d) Find the output of the following program: 3

#include<iostream.h>

void main()

{

int A[]={100,200,300,400,500},s=1;

int \*ptr=A;

while(\*ptr<500)

{

ptr++;

s=s+\*ptr;

}

cout<<++s<<” “<<s++;

}

Q1e) Find the output of the following program 2

#include<iostream.h>
#include <ctype.h>

struct fun

{

int a,b,c;

};

void showd(fun &f,int x=10)

{

f.a+=f.a+x;

f.b-=f.b+x;

f.c+=f.c-x;

}

void main()

{

fun A={4,5,6},B={33,44,55};

showd(A);

cout<<A.a<<”:”<<A.b<<”#”<<A.c;

showd(B,12);

cout<<B.a<<”#”<<B.b<<”@”<<B.c;

}

f) Select the correct option from options given below

void main()

{

 int ar[ ]={10,20,30,405,606};

 randomize();

 for(i=1;i<=2;i++)

 {

 x=random(2)+2;

 cout<<ar[x]<<”:”’

 }

}

1. 30:40: ii) 30:405: iii) 20:405: iv) 405:405:

Q2a) What is Abstraction illustrate with an eg. 2

Q2b) Answer the questions (i) and (ii) after going through the following class : 2

class School
{

int rn;

char nm[20];

public :

School( )

{ //Function 1

}

School(int R,char N[]) //function 2

{

}

School(School &s) //Function 3

{

}

} ;

(i) What type of OOP concept is illustrated by function, function2, function3 together.

(ii) What is Function 3 specifically referred as ? Write the statement to invoke function 3

2c) Define a class Cricket in C++ with following description: 4
Private Members
🡪Bnm of type string
🡪Tnm of type string

🡪Type of type string

🡪Position of type string

🡪Number of sixes, number of four of type int

• A member function Gettype to assign the following values for type as per
the number of sixes.

Number of Sixes Type

>=10 Hard Hitter

b/w 6-9 Hitter

b/w 2-5 General

0-1 Defensive

Public members

A function InputCricket() to allow the user to enter the values for Bnm,Tnm,Position,number of sixes, number of fours and invoke gettype

Function ShowCricket() to show all batsman Details.

**Q2**(d) Answer the questions (i) to (iv) based on the following : 4

class Country

{

long CID ;

char CName[20] ;
protected :

char Description[40] ;

void Allocate( ) ;
 public :

double pci;

Country( ) ;

void Input( ) ;
void Showd( ) ;
 } ;

class State :protected Country
{

int SID ;

char Sname[20] ;
protected :

char datad[40] ;
public :

State( ) ; void instate( ) ; void outstate( ) ;

} ;

class Zone : public State

{

long ZID ;

char Znm[20] ;

public :

Zone( ) ;

void EnterZone( ) ;

void DisplayZone( ) ;

} ;

(i) Which type of Inheritance illustrated in the above C++ code ?

(ii) Write the names of members, which are accessible by objects of class type Zone.

(iii) Write the name of all the data member , which are accessible by functions of class type State.

(iv) What is the object size of class Zone.

**3(a)**Write a function DATACHECK(int ARR[], int Size) in C++ to check the array is ascending order, descending order or in no order the Function will return A,D or N. 3

(b)An array ar[30][20] is stored in the memory along the row with each of the elements occupying 4 bytes. Find out the memory location of ar[12l[15], if the element ar[4][10] is stored at the location 9000. 3

(C )Write a function in C++ to perform Push operation in Dynamic Stack. 4

struct Book

{

int bno;

char bnm[20];

Book \*Link;

};

d) Write a function CHANGEDATA( ) in C++, which accepts a 2d array of integer and its size as parameters The function will find sum of even elements on both diagonals count the common elements in both diagonal only once. 2

e) Convert the following infix expression to postfix expression 2

a+b\*(c-d/e^f)/g

**Q4a** Q55. Observer the program segment given below carefully and fill the blank

marked as statement 1 and statement 2 using seekg( ) and tellg( ) function for performing the required task:

 #include<fstream.h>

 class employee

 {

 int eno;

 char ename[20];

 public:

 int countrec( ); //function to count total no of records

 };

 int item ::countrec( )

 {

 fstream file;

 file.open(“employee.dat”,ios::binary | ios::in);

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ // statement 1;

 int Bytes = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ // statement 2;

int Count = Bytes / sizeof(Item);

file.close( );

return Count; }

**Q4b** Write a udf in c++ to find the number of lines in the file “Click.txt” that ends with ‘W’ Character. 2

**Q4c.**Write a function in C++ to search for a flats with type HIG from a binary file “flat.DAT” containing the objects of class FLATDATA (as defined below). 3

class FLATDATA
{

long flatno ;

char type[20];

 public:

void FlatEnter ( )

{

cin>>flatno;

gets(type);

}

void FlatDisplay( )

{

cout<<flatno;

cout<<type;

}

char \*retype()

{

return type;

}

};

**Q5a)** What is alternate key explain with an eg. 2

**Q5b)** Consider the tables FLIGHTS & FARES. Write SQL commands for the statements (i) to (vi) and give the outputs for SQL queries (vii) & (viii) . Table : FLIGHTS

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **FNO** | **SOURCE** | **DEST** | **NO\_OF\_FL** | **NO\_OF\_STOP** |
| IC301 | MUMBAI | BANGALORE | 3 | 2 |
| IC799 | BANGALORE | KOLKATA | 8 | 3 |
| MC101 | DELHI | VARANASI | 6 | 0 |
| IC302 | MUMBAI | KOCHI | 1 | 4 |
| AM812 | LUCKNOW | DELHI | 4 | 0 |
| MU499 | DELHI | CHENNAI | 3 | 3 |

**FARES**

|  |  |  |  |
| --- | --- | --- | --- |
| **FNO** | **AIRLINES** | **FARE** | **TAX** |
| IC301 | Indian Airlines | 9425 | 5% |
| IC799 | Spice Jet | 8846 | 10% |
| MC101 | Deccan Airlines | 4210 | 7% |
| IC302 | Jet Airways | 13894 | 5% |
| AM812 | Indian Airlines | 4500 | 6% |
| MU499 | Sahara | 12000 | 4% |

i) Display flight number & number of flights from LUCKNOW from the table flights.

ii) Arrange the contentsof the table flights in the descending order of destination.

 iii) Increase the tax by 3% for the flights starting from Delhi.

iv) write a command to create the fare table.

v)insert a new record in the fare table.

vi) to display fno,source,dest,airlines from both tables.

Give The outputs

vii)SELECT COUNT(DISTINCT SOURCE) FROM FLIGHTS;

viii) SELECT FNO, NO\_OF\_FL, AIRLINES FROM FLIGHTS,FARES WHERE SOURCE=’DELHI’ AND FLIGHTS.FNO=FARES.FNO;

**6.(a)** State and Verify Demorgan’s Theorem algebraically. 2

 (b) Draw the circuit using NOR gates only (a+b’).(b’+c) 2

(c) Write the SOP,POS form of a Boolean function F, which is represented in a truth

table as follows: 1

A B C F

0 0 0 0

0 0 1 0

0 1 0 1

0 1 1 1

1 0 0 0

1 0 1 1

1 1 0 1

1 1 1 1

(d) Reduce the following Boolean Expression using K-Map : F(A, B, C, D) = ∑ (0, 1,2, 4, 5, 6, 8,9, 11,12,15) **Q7(a)** What is circuit and packet switching 1

(b)Give two eg of browsers 1

(c) What is XML ? 1

d) give full form of TCP/IP and EDGE.

(e) “Learn Together” is an educational NGO. It is setting up its new campus at Jabalpur for its webbased activities. The campus has 4 compounds as shown in the diagram below: 4

center to center distance between various Compounds as per architectural drawings(in meter) is as follows:

Main Compound to Resource Compound 110 m

Main Compound to Training Compound 115 m

Main Compound to Finance Compound 35m

Resource Compound to Training Compound 25 m

Resource Compound to Finance Compound 135 m

Training Compound to Finance Compound 100m

Expected Number of Computer in each Compound is as follows:

Main Compound 5 Resource Compound 15 Training Compound 150 Finance Compound 20

(e1) Suggest a cable layout of connection between the compounds.

(e2) Suggest the most suitable place (i.e., compound) to house the server for this NGO. Also provide a suitable reason for your suggestion.

(e3) Suggest the placement of the following devices with justification:
(i) Repeater (ii) Hub/switch

(e4) The NGO is planning to connect its International office situated in Mumbai, which out of following wired communication link, you will suggest for a very speed connectivity ?: (i) Telephone Analog Line (ii) Optical Fiber (iii) Ethernet Cable

**For Any Queries or Answers Contact**

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