INSTRUCTIONS TO CANDIDATES

DAC – OOPS with C++ Programming

Candidate should read the following instructions before attempting the question paper.

1. **DO NOT CLOSE THE BROWSER ANYTIME DURING THE EXAM.**

2. Candidate **should check his/her name and extended enrollment Number (enrollment number prefixed with XX)** being displayed on the screen. In case of any discrepancy, it should be reported to Invigilator immediately.

3. Candidate should ensure that he/she has marked attendance on the attendance sheet and also ensure that session id has also been recorded. Any other session id which has not been mentioned in the attendance sheet would not be considered and all responses on that session id would be treated as null and void.

4. Do not start the exam (do not click **Next** button) before instructed to do so by the Invigilator.

5. **Every Section has 40 objective-type questions.** Each objective-type question has four choices of which only one is correct. Candidate should select the radio button, given below the question, corresponding to his/her correct choice.

6. Marking scheme of CCEE is as follows:

    a. +1 (plus one) marks for each correct answer.
    b. 0 (zero) mark for each un-attempted/ wrong question.

7. **Duration of each Section is One hour**. No candidate will be allowed to leave the examination hall before the completion of exam duration.

8. On clicking the **Next** button given at the bottom of the Instructions page, candidate will be directed to the question display screen.

9. Candidate should **note down the Session ID** that is displayed on the question screen after clicking on **Next** button.

10. Once the exam is started:-

a. **Candidate should not close the browser. In case the browser is closed accidentally, it SHOULD BE reported to the Invigilator immediately.**
b. **Candidate should not open any other software application on the computer system.**
c. Candidate should neither shut down the machine nor fiddle with allocated hardware or software.
d. In case of any problem it should be reported to Invigilator.

11. Candidate can navigate through questions using scroll bar or directly through the question number grid.

12. CCEE screen contains the following buttons with the below specified functionality:

Button	Functionality
Examination Instruction	This link will open the instructions for the exam. After reading the instructions candidate has to click on **Back** button to move back to the questions interface.
Mark for Review	In case a candidate is not sure about the answer, then he/she can use this Button to mark the question for a visit later. It will be shown with a **?** against the question (in the question number grid) if the question has not been answered but has marked it for review. In case candidate has answered the question and marked it for review, then **√?** will be displayed against the question in the question number grid.
Clear Answer	This button will clear the option marked and the question will be shown as un-answered.

13. Each candidate will be provided one A4 size sheet for rough work. Candidates have to record their Name, hall ticket number and session ID on the rough sheet. They have to return the rough sheet to the Invigilator before leaving the exam hall.
14. Calculators, mobile phones, pagers and electronic gadgets in any form are not allowed to be used in the Exam Hall.

15. Candidate will be disqualified if found indulging in any kind of malpractice.

1. Which of the following type of pointer restricts changes in value/variable pointed by it?
   A. Constant pointer to variable
   B. Constant pointer to constant value
   C. Pointer to variable
   D. NULL pointer

2. What would be the equivalent pointer expression for the array element a[i][j][k][l]

   A. ((((a+i)+j)+k)+l)
   B. *(*(*(*(a+i)+j)+k)+l)
   C. (((a+i)+j)+k+l)
   D. ((a+i)+j+k+l)

3. Which of the following is correct about class and structure?
A. class can have member functions while structure cannot have member functions.
B. class data members are public by default while structure members are private.
C. Pointer to structure or classes cannot be declared.
D. class data members are private by default while structure members are public.

4. If default constructor is not defined, then how the objects of the class will be created?
A. The compiler will generate error.
B. Error will occur at run-time.
C. Compiler provides its default constructor to build the object.
D. None of these

5. All the classes in C++ standard library are included in _____ namespace.
A. std
B. object
C. io
D. None of above

6. Which of the constructor will initialize variable changeme correctly?

```
#include <iostream>
using namespace std;
class Test
{
const int changeme;
public:
void Display()
{
```

```
cout<<"\n"<< changeme <<endl;
}
};
A:Test(int k):changeme(k)
{
}
B:Test(int k)
{
changeme = k;
}
C:Test()
{
changeme = 0;
}
```
D: None of the above

7. When << operator is overloaded in a class it _____.
A. must be a member function.
B. must be a non-member function.
C. can be both A & B.
D. cannot be overloaded

8. Which of the function can be overloaded?
A. Virtual function
B. Static function
C. Member function
D. All of the above

9. Which statement is correct about the static data member of a class?
A. static member function can access only static data members of a class.
B. static data member is not shared among all the object of the class.
C. static data member can be accessed from main() and other functions.
D. None of the above.

10. Which type of function is an ideal candidate for being declared as inline?
A. A function that is not called frequently and it is small.
B. A function that is called frequently and it is small.
C. A function that is not called frequently and it is large.
D. A function that is large and is called frequently

11.double(*temp[10])();
temp here is _____
A. pointer to a function
B. pointer array
C. array of pointer to a function
D. pointer to array of function

12. What will be the output of following code snippet?

```
#include <iostream>
using namespace std;
class ThisTest
{
        int datamember;
        public:
        ThisTest(int datamember)
        {
                this->datamember = datamember;
                this = new ThisTest;
                this->datamember = 100;
        }
        void Display()
        {
                cout<<"Member:"<<datamember;
        }
};
int main()
{
ThisTest thistest(50);
thistest.Display();
return 0;
}
```

A. 50
B. 100
C. Garbage value
D. Compilation error

13.What kind of function does not have this pointer?
A. Overloaded Function
B. Friend Function
C. Virtual Function
D. None is true.

14.What is the value of n?
enum color { red, green = 20, blue , yellow = 23};
color col = red;
int n = blue;
A. 21
B. blue
C. 3
D. Error in syntax

15. In binary operator overloaded function, which are overloaded through friend function take_____.
A. Three explicit arguments
B. Two explicit arguments
C. One explicit arguments
D. No arguments

16. Compiler provided copy constructor always perform?
A. Shallow copy
B. Deep copy
C. Memory allocation
D. None of these

17.Return type of constructors are ____
A. 1
B. 0
C. void
D. It does not have a return type.

18. Which of the following describes inheritance and composition correctly?
A. There is no difference in inheritance and composition
B. Composition and inheritance can be used for creation of child classes
C. Composition provide is-a and inheritance provide has-a relationship between classes
D. Composition allow to use existing functionality of class whereas inheritance allow to extend original functionality of class

19. For runtime polymorphism, a method in base class must be declared _____
A. static
B. constant
C. friend
D. virtual

20.Which of the following is/are incorrect w.r.t Virtual function?
A. A virtual function is a member function that you expect to be redefined in derived classes.
B. Virtual functions ensure that the correct function is called for an object, regardless of the expression used to make the function call.
C. When you refer to a derived class object using a pointer or a reference to the base class, you can call a virtual function for that object and execute the derived class's version of the function.
D. You can also declare global or static functions as virtual.

21. What will be the output of below code snippet?

```
#include<iostream>
using namespace std;
class  Parent
{
        public:
        virtual  void Function()
{
          cout<<"\n Parent Class Function.";
}
};
class  Child: public Parent
{
        public:
        void Function()
        {
         cout<<"\n Child Class Function.";
        }
};
int main(int argc, char* argv[])
{
        Parent *ptrParent = NULL;
        Child objChild;
        ptrParent = &objChild;
```

```
        ptrParent->Function();
}
```

A. Parent Class Function
B. Child Class Function
C. Compilation error
D. Logical error

22. Which statement is used to catch all types of exceptions?
A. catch()
B. catch(int a)
C. catch(…)
D. catch(runtime_error e)

23.In case of multiple inheritance, diamond problem can be resolved by_____?
A. Virtual base classes
B. Virtual functions
C. Virtual constructor
D. Virtual destructor

24.A class is called as Abstract class if it contains _____.
A. At least one virtual function
B. At least one pure virtual function
C. No virtual functions
D. Virtual constructor

25.
```
class A { int I; };

class B: virtual public A

 { int j; };

 class C: virtual public A

 { int k; };

class D:public B, C

{ int l; };

void main() { cout << sizeof(B) << “,” << sizeof(C) << “,” << sizeof(D);

}
```

A. 8,8,16

B. 12,12,24

C. 12,12,20

D. 12,12,28

26. class A {

public:

void print() { cout << “print of A” << endl; }

virtual void draw(){ cout << “draw of A” << endl;}

};

class B: public A {

public: virtual void print() { cout << “print of B” << endl;}

};

class C: public B {

public: void print() { cout << “print of C” << endl;}

};

void main() { C c; B *pb = &c; pb->draw();

}

(a) Print “draw of A”
(b) Compiling error
(c) runtime error
(d) None of above

27. What is output by the following segment of code?

```
for (int I = 1; I <= 5; I++)
for (int J = 1; J <= 3; J++)
cout << J;
```

A. 1 2 3 1 2 3 1 2 3 1 2 3 1 2 3
B. 1 2 3 4 5 1 2 3 4 5 1 2 3 4 5 1 2 3 4 5 1 2 3 4 5
C. 1 2 3 2 3 3
D. 1 2 3 4 5

28. What is the output of the following code?

```
#include<iostream.h>
int a = 1;
void main()
{
int a = 100;
{
int a = 200;
{
int a = 300;
cout<<a<<",";
}
cout<<a<<",";
}
cout<<a<<",";
cout<<::a<<",";
}
```

A. Error
B. 100, 200, 300, 100,
C. 300, 200, 100, garbage
D. 300, 200, 100, 1

29. What is the behavior of this program?

```
int main()
{
int x = -1;
try
```

```
{
if (x < 0)
throw x;
else
cout<<x;
}
catch (int x )
{
cout << " Thrown value is " << x << endl;
}
return 0;
}
```

A. Thrown value is -1, Exception not occurred.
B. Thrown value is 1, Exception not occurred.
C. Thrown value is 1, Exception occurred.
D. Thrown value is -1, Exception occurred.

30.In the template <class T> declaration, T stands for_____.
A. An integer data type
B. A generic data type
C. An arbitrary class
D. A class defined earlier

31. What will be the output of below code snippet?

```
#include<iostream>
using namespace std;
int main()
{
        cout.fill('#');
        cout.width(10);
        cout<<"Hello"<<endl;
        return 0;
}
```

A. Hello#####
B. #####Hello
C. Hello
D. Compilation error

32.In C++, cout represents _____.
A. istream
B. ostream
C. iostream
D. ifstream

33. Which of the following stream(s) used for reading and writing content?

A. fstream
B. stringstream
C. iostream
D. All of the above

34.Which of the following file opening mode will create file if file does not exists and put write marker to end if file exists?
A. ios::out
B. ios::trunc
C. ios::ate
D. ios::binary

35. In CPP, which operator is used to release the dynamically allocated memory?
A. remove
B. free
C. delete
D. release

36.What is functionality of seekp?
A. return current location of read marker
B. move read marker to given position
C. return current location of write marker
D. move write marker to given position

37. If j = 0, k = 2 and m = 14, what value is stored in n?

```
n = (k && m) + (j < (k/m)) + (j || (!m)) +(m/k);
```

A. 0
B. 1
C. 7
D. 8

38. Predict the output of the following code?

```
#include <iostream>
using namespace std;
   void show (int& a, int& b, int& c)
   {
      a *= 3;
      b *= 9;
      c *= 4;
   }
   int main ()
   {
      int x = 4, y = 7, z = 6;
      show (x, y, z);
      cout << x <<" "<< y<<" " << z;
      return 0;
   }
```

A. 4 7 6
B. 3 9 4
C. 12 63 24
D. 9 81 16

39.In C++, which of the following advanced type casting mechanism is used for constant to non-constant conversion?

A. static_cast
B. const_cast
C. reinterpret_cast
D. dynamic_cast

40. What is the output of the following code snippet?

```
class test {
public:
static int n;
test () { n++; };
~test () { n--; };
};
int test::n=0;
int main () {
test a;
test b[5];
```

```
test * c = new test;
cout << a.n << endl;
delete c;
cout << test::n << endl;
return 0;
}
```

A. 7 6
B. 6 7
C. 5 6
D. 6 5