133/B

003-003309

B.C.A. (CBCS) Sem.-III Examination
November-2013
CS-14 : C++ & Object Oriented Programming (NEW)

Faculty Code : 003
Subject Code : 003309

Time : 2½ Hours] **[Total Marks : 70**

1. Select appropriate answer from the following. **20**
   (1) Which of the following programming approach used functions as a key concept to perform action-oriented tasks?
      (a) Structured programming
      (b) Modular programming
      (c) Procedure-oriented programming
      (d) Object-oriented programming
   (2) Which header file in C++ does contain function prototypes for memory allocation?
      (a) <iostream.h> (b) <stdio.h>
      (c) <stdlib.h> (d) <limits.h>
   (3) Water-fall models is associated with
      (a) Control structures (b) Type conversions
      (c) Manipulators (d) None of the above
   (4) Identify which function prototype exhibits the following: Name of the function is sample_calc, which receives two values of type double and returns no value:
      (a) sample_calc(double, double);
      (b) void sample_calc(double, double);
      (c) double sample_calc(void);
      (d) void sample_calc(double, double)
   (5) The declaration of a class includes
      (a) Declaration of data members
      (b) Declaration of function prototype
      (c) Return statements of functions
      (d) Both a and b

   (6) A friend function
      I. Can be invoked similar to other functions without using objects
      II. Cannot access to other member functions directly
      III. Cannot be called using the object of the class to which it has been declared as friend
      IV. Can be declared only in the public part of a class
      (a) I, II and III (b) I, II and IV
      (c) I, II, III and IV (d) IV only
   (7) The default constructor for class A is
      (a) A::A() (b) A::A(int)
      (c) A::A(int); (d) A::A();
   (8) Identify if any error in the following code segment :

```
1. class example
2. {
3.       float x;
4.       public:
5.            void example();
6.            example(int, float);
7. };
```

      (a) Line 7 should not include the semicolon
      (b) Line 6 is an incorrect statement
      (c) Line 5 cannot include void
      (d) No error
   (9) Operator overloading is also known by the term
      (a) runtime polymorphism
      (b) compile-time polymorphism
      (c) Both a and b
      (d) None of the above
   (10) Which of the following statements does correctly describe the casting operator function?
      (a) It must not specify return type
      (b) It must be a class member
      (c) It must not have any arguments
      (d) All of the above

(11) Which of the following statement(s) is true, if a derived class is publicly inherited from a base class?

I. The public members of the base class become public members of the derived class

II. The public members of the base class become private members of the derived class

III. The public members of the base class are inaccessible to the objects of the derived class

IV. All of the above

(a) I only (b) Both I and II

(c) Both I and III (d) IV only

(12) Consider the following code segment :

```
class A
{
        int a;
public:
        int b;
        void inp();
}
class B : A
{
// members of B
}
```

Which of the following statement(s) is NOT true regarding the above code ?

(a) The public members, namely 'b' and inp() of class A become private members of class B

(b) The public members, namely 'b' and inp() of class A can be accessed by the member functions of class B

(c) The public members, namely 'b' and inp() of class A are inaccessible to the objects of class B

(d) None of the above

(13) Which of the following statement(s) is true according to the following statement ?

```
p=*ptr;
```

(a) p must be a pointer variable

(b) The value of ptr is assigned to the variable p

(c) The address of the pointer ptr is assigned to the variable p

(d) The value of the variable that the pointer ptr is pointing to is assigned to the variable p

(14) Consider the following code segment :

```
int main()
{
    double f, *f – ptr=&f;
    f=5.25;
    f_ptr=4.5;
    cout<< "Value of f is:" << "  " << f;
    return 0;
}
```

What is the output of the above code ?

(a) Value of f is: 5.25

(b) Value of f is: <hexadecimal address>

(c) Value of f is: 4.5

(d) Compiler error

(15) What would be the output of the following code?

```
cout.fill('$');
cout.setf(ios::left, ios:: adjustfield);
cout.width(20);
cout<< "I/O Operations";
```

(a) Operations$$$

(b) I/O Operations

(c) I/O Operations$$$$$$

(d) I/O Operations$$$$$$$

(16) Which of the following function(s) opens a file named "sample" for writing only ?

(a) ofstream_object.open{"sample", ios::app);

(b) ifstream_object.open(sample, ios::out);

(c) ofstream_object.open("sample", ios::out);

(d) ifstream_object.open(sample, ios::app);

(17) Consider the following code segment:

```
1:  void main()
2:  {
3:      char line[80],str[80];
4:      str = "Working with C++ files";
5:      ofstream fout;
6:      fout.open("sample.txt",ios::out);
7:      fout <<str ;
8:      fout.close();
9:  }
```

The above code will not compile. Assume that all the header files are included in the program. Identify which line should be changed to fix the error :

(a) Line 6 & Line 7 (b) Line 4

(c) Line 3 (d) Line 8

(18) C++ Templates support the concept of

(a) modular programming (b) generic programming

(c) structural programming (d) None of the above

(19) Consider the following code segment:

```
template <class temp>
class samp e
{
..... . . //code
};
```

Identify the correct syntax for declaring a dynamic array of characters using the above template.

(a) sample <char> characterArray;

(b) sample <datatype> characterArray;

(c) temp <char> characterArray;

(d) temp <datatype> characterArray;

(20) Which block handles the exception?

(a) Finally block (b) Catch block

(c) Try block (d) None of the above

2. (A) Answer in brief : (Any **Three**) **6**

(1) What is cascading of I/O Operators ?

(2) Explain chained and embedded assignments.

(3) Why an array called derived data type? Explain.

(4) What is generic pointer ?

(5) Explain inline function.

(6) Explain const Arguments.

(B) Attempt any **three** : **9**

(1) Explain free store operators with example.

(2) Explain reference variable with example.

(3) Differentiate: while V/S Do... while.

(4) What are the advantages of function prototyping in C++ ? Explain.

(5) Explain default arguments with example.

(6) Explain static member function with example.

(C) Answer the following question : (Any **Two**) **10**

(1) What is function overloading ? Explain with example.

(2) What is class ? How to create and use it ? Explain with example

(3) What is friend function ? Explain characteristics of friend function.

(4) Write detail note on pointer to members with example

(5) What is constructor ? Explain parameterized constructor with example.

3. (A) Answer in brief : (Any **Three**) **6**

(1) How does a main() function in C++ differ from main() in C ?

(2) How memory is allocated for an object ? Explain with figure & example.

(3) Discuss about scope resolution operator.

(4) Explain copy constructor with an example.

(5) Describe the importance of destructor.

(6) What is operator overloading ? How to define it ? Explain.

(B) Answer the following : (Any **three**) **9**

(1) How to overload binary operator using friend function ? Explain with example.

(2) Write down any six rules for operator overloading.

(3) What is inheritance ? Explain single inheritance with example.

(4) What is virtual base class ? When do we make a class virtual ? Explain.

(5) What is the role of constructor in derived class ? Explain with example.

(6) What is containership ? How does it differ from inheritance ?

(C) Attempt any **Two** : **10**

(1) What is virtual function ? Explain with example.

(2) What is difference between manipulators and IOS member function in implementation? Give example.

(3) Explain following functions with example :

(1) eof()

(2) fail()

(3) bad()

(4) good()

(4) What is generic programming ? How is it implemented in C++ ? Explain with example.

(5) What is Exception ? How to handle it ? Explain with example.
