

**OBJECT ORIENTED PROGRAMMING**  
**2K5-DS-01**

Time : 3 hrs.

M.M : 100

**Note :-**

1. Part 'A' may be attempted in first 6 pages of Answer Sheet.  
भाग 'क' के समी उत्तर, उत्तर-पुस्तिका के प्रथम छ पृष्ठों में ही करने हैं।
2. Part 'B' in rest of the Sheets of Answer Sheet.  
भाग 'ख' के उत्तर, उत्तर-पुस्तिका के अगले शेष पृष्ठों में लिखिये।
3. Answers may be given in English or Hindi.  
प्रश्नों के उत्तर अंग्रेजी अथवा हिन्दी में दीजिये।

**PART - 'A'****1. Answer any 10 questions :-****(10x2=20)**

- (a) Procedural oriented programming follows which approach - top down approach or bottom up approach?
- (b) What is 'precision' function used for? What is its syntax?
- (c) What is dynamic instance?
- (d) What is explicit type conversion?
- (e) Give two logical operators
- (f) What are the shortcomings of C language? Name any two
- (g) What is the header file for functions 'getch()' and 'clrscr()'?
- (h) What is 'this' pointer?
- (i) What is the significance of 'private' members in a class?
- (j) What is the use of 'copy' constructor?
- (k) Give two characteristics of OOP.
- (l) What function is used to close an open file?
- (m) What do you understand by 'call by reference'?
- (n) What is a scope resolution operator?

**2. Attempt any Five questions :****(5x4=20)**

- (a) What is a nested class? What are its advantages? How it is defined and declared in C++?

- (b) Give the output of following code with detailed steps showing the computation of output.

```

int main ()
{
    int i =5, j =4;
    test (i, &j);
    cout << "i" << i << "j" << j;
    return 0;
}

int test (int a, int *b)
{
    a=a*a;
    *b=*b*b;
}

```

- (c) Explain in brief wrapper class.
- (d) Explain how base class member functions can be invoked in a derived class if the derived class also has a member function with the same name.
- (e) What is a virtual function? Explain its usage with example.
- (f) What are the various File Opening modes? How is (ios + app) mode different from (ios + ate mode)?
- (g) What do you mean by an array of objects in C++? Explain.
- (h) What do you mean by an array of objects? Explain how member of objects can be accessed in array of objects with the help of C++ program.

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#### PART- B

Attempt any three questions :

(3x20=60)

3. (a) What is the difference between overloading and overriding of a function? Write a program in C++ to overload == operator and compare two objects using the operator.
- (b) What is inheritance? Explain different types of inheritance.
4. (a) What is an exception? Why is necessary to handle an exception by special code? Develop a program containing possible exception and use a try block to throw it and catch a block to handle it properly.
- (b) What is file mode? Describe the various file mode options available.

5. (a) Distinguish between compile time and run time polymorphism.
- (b) Create a class shape which has two overloaded member functions Area() & perimeter(). Depending upon whether the dimensions are input as integers or floating-point number, calculate the area and perimeter of three different shapes. The dimensions of the shape would be entered by the user. The output should be in the format as the input.
6. (a) Create a class called Time that has separate int member data for hours, minutes and seconds. One constructor should initialize this data to 0, and another should initialize it to fixed values. A member function should display it, in 11:59:59 format. Write a program to add time of two objects by overloading '+' operator.
- (b) Define package. How to import a package in a program.
7. (a) Write short notes on any two:
- (i) code reusability
  - (ii) Life cycle of an applit
  - (iii) implementation of constructors in inheritance
- (b) Why it is necessary to include the file `<iostream>` in all our program. Write its Characteristics.