Total No. of Questions—**8**] [Total No. of Printed Pages—**3**

Seat No.	

[5668]-205

S.E. (Information Technology) (I Sem.) EXAMINATION, 2019

PROBLEM SOLVING AND OBJECT ORIENTED PROGRAMMING

(2015 PATTERN)

Time : Two Hours **Maximum Marks : 50**

N.B. **:—** (*i*) Answer Q. No. **1** or Q. No. **2**, Q. No. **3** or Q. No. **4**, Q. No. **5** or Q. No. **6** and Q. No. **7** or Q. No. **8**.

(*ii*) Neat diagrams must be drawn wherever necessary.

(*iii*) Figures to the right indicate full marks.

(*iv*) Assume suitable data, if necessary.

1. (*a*) What are the *six* steps of problem solving ? Discuss with example. [6]

(*b*) Design an algorithm to find out maximum number from an array using the following problem solving strategies : [6]

(*i*) Sequential logic structure

(*ii*) Decision logic structure

(*iii*) Loop logic structure.

Or

2. (*a*) Write a solution to the problem of finding the largest number from an array of 'n' element. Develop algorithm, flowchart, and interactivity chart. [6]

(*b*) Explain data dictionary with example. [6]

P.T.O.

3. (*a*) How is memory allocated/deallocated in C++ ? [6]

(*b*) Consider the definition of the following class : [6]

```
class Sample
{
private:
   int x;
   double y;
public:
   Sample(); //Constructor 1
   Sample(int, double); //Constructor 2
   Sample(Sample &P ); //Constructor 3
};
```

(*i*) Write the definition of the constructor 1 so that the private member variables are initialized to 0.

(*ii*) Write the definition of the constructor 2 so that the private member variable x and y is initialized according to the value of the parameter.

(*iii*) Write the definition of the constructors 3, where copy one object to another.

Or

4. (*a*) What is Static variable and static function ? Explain with example. [6]

(*b*) Give properties of friend function and explain with suitable example. [6]

5. (*a*) What is virtual function ? What is the use ? Give an example how compilers Resolve a function call. [7]

(*b*) What are class templates ? How are they created ? What is the need for class templates ? [6]

Or

6. (*a*) What is STL ? Explain various component of STL. [6]

(*b*) Discuss difference between early and late binding. [4]

(*c*) Write a note on 'this' pointer. [3]

7. (*a*) How to catch multiple exceptions ? Illustrate with example. [6]

(*b*) What is unformatted and formatted I/O operations. [7]

Or

8. (*a*) Explain need of exception handling. Explain it with example. [6]

(*b*) How to manage console I/O operation in C++ ? Explain with example. [7]