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

Seat
No.

**[5252]-575**

S.E. (Information Technology) (I Semester) EXAMINATION, 2017

PROBLEM SOLVING AND OBJECT ORIENTED PROGRAMMING

CONCEPTS

(2015 PATTERN)

Time : 2 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**, 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 ?                [6]

(b)  State the major differences in the three types of loop structures.

[6]

*Or*

2.  (a)  When should you use single decision logic over nested decision

logic ?                                                          [6]

(b)  What are the relationships of the problem-solving tools to each

other ?                                                         [6]

P.T.O.

**3.** (*a*)  Write an  algorithm to find the maximum in an array and

the  position :                                                         [4]

(*i*)  where it first occurs

(*ii*)  where it last occur.

(*b*)  Write a C++ program to calculate the area of circle, rectangle

and triangle using function overloading.                    [4]

(*c*)  Write alogrithm for keyword searching.                    [4]

*Or*

**4.** (*a*)  Write a C++ program to overload unary operator minus(–).

[4]

(*b*)  Explain the syntax of operator overloading using friend function.

[4]

(*c*)  What do you mean by dynamic initialization of object ? [4]

**5.** (*a*)  What is static data member and static member function? Write

its  properties.                                                         [6]

(*b*)  Explain constructors and destructors in inheritance.     [4]

(*c*)  Write a program to demonstrate how constructor and destructor

are invoked in multilevel inheritance.                        [3]

*Or*

**6.** (*a*)  Differentiate between Procedural Oriented Programming and

Object-oriented Programming.                                  [6]

(*b*)  Explain early binding and late binding.                    [4]

(*c*)  What is inheritance ? Write types of inheritance.          [3]

**7.** (*a*) Explain Standard Template Library (STL). [6]

(*b*) Write a C++ program to swap two numbers using concept of function template. [4]

(*c*) How to catch multiple exceptions ? [3]

*Or*

**8.** (*a*) Write a note on RTTI. [6]

(*b*) What is exception handling mechanism in C++ ? Write a program in C++ to handle "divide by zero" exception. [4]

(*c*) How to Manage console I/O operations ? [3]