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

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S.E. (Information Technology) (First Semester) EXAMINATION, 2017
PROBLEM SOLVING AND OBJECT ORIENTED PROGRAMMING CONCEPTS
(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**, 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 different types of operators ? Give hierarchy/ precedence of operators. [6]

(*b*) Explain the concept of local variable and global variable with suitable example. [6]

Or

2. (*a*) What are the six steps of problem solving ? [6]

(*b*) Explain "Top-down design" to solve the problem. [6]

3. (*a*) Write an algorithm for finding maximum element of an array. [4]

(*b*) Define the terms polymorphism, data abstraction. [4]

(*c*) Explain various features of Object Oriented Programming. [4]

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Or

4. (*a*) Define Constructors and Destructors. [4]

(*b*) Define a Class Bank Account having data members and member functions as : [4]

Data members :

(1) Name of depositor

(2) Account number

(3) Type of account

(4) Balance amount in the account.

Member functions :

(1) To assign initial values

(2) To deposit an amount

(3) To withdraw an amount after checking the balance

(4) To display name and balance.

(*c*) What is need of virtual destructor ? [4]

5. (*a*) What is inheritance ? What are different types of inheritance ? [6]

(*b*) Write a C++ program to demonstrate multiple inheritance. [4]

(*c*) What are rules of operator overloading ? [3]

Or

6. (*a*) Write a C++ program to add the complex numbers using binary operator overloading. [6]

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

(*c*) Explain virtual base class with example. [3]

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

(*b*) What is generic programming ? How is it implemented in C++ ? [4]

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(*c*) Define friend class. Explain the concept of forward declaration of class. [3]

Or

8. (*a*) Describe briefly the features of I/O system supported by C++. [6]

(*b*) What is formatted and unformatted I/O operations. [4]

(*c*) Explain how the exception is handled in C++. [3]

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