

Total No. of Questions—8]

[Total No. of Printed Pages—3

Seat No.	
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[5057]-2054

S.E. (Computer) (First Semester) EXAMINATION, 2016

## 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, 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) Compare Procedure Oriented Programming Vs Object Oriented Programming. [4]
- (b) What is Friend function ? [2]
- (c) Define class number which has inline function mult ( ) and cube ( ) for calculating the multiplication of 2 double numbers given and cube of the integer number given. [4]
- (d) What is the use of 'this' pointer ? [2]

Or

2. (a) Discuss the ways in which inheritance promotes software reuse, saves time during program development and helps prevent errors. [4]

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- (b) Define a class string and use overloaded == operator to compare two strings. [5]
- (c) Explain abstract class with an example. [3]

3. (a) How smart pointers avoids the problem of memory leak ? [4]
- (b) Differentiate compile time and run time polymorphism. [4]
- (c) Explain virtual base class and virtual function with example. [4]

Or

4. (a) Why we need Templates in C++ ? [2]
- (b) Explain exception handling mechanism in C++ ? Write a program in C++ to handle "divide by zero" exception. [6]
- (c) Explain class template and function template with an example. [4]

5. (a) What is a stream ? Explain types of streams available in C++. [6]
- (b) Write a program using the open(), eof() and getline() member functions to open and read a file content line by line. [7]

Or

6. (a) Write a program that returns the size in bytes of a program entered on the command line : [7]  
\$ filesize program.txt.
- (b) What are cin and cout ? Explain iostream. [6]

[5057]-2054

2

7. (a) What is the purpose of Iterator ? Elaborate forward, bidirectional and random-access iterators with suitable examples. [7]  
(b) What is a stack ? How is it implemented using STL ? [6]

Or

8. (a) Elaborate advantages and disadvantages of the following Basic Sequence Containers : [6]  
(i) Vector  
(ii) List.  
(b) What is the STL ? Why should a C++ programmer be interested in the STL ? What is the design philosophy of the STL ?  
What are the major components of the STL ? [7]