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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]

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]