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**Question Paper Code : 31299**

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2013.

Third Semester

Computer Science and Engineering

CS 2203/CS 35/CS 1202/10144 CS 304/080230004 — OBJECT ORIENTED PROGRAMMING

(Common to Information Technology)

(Regulation 2008/2010)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. State any four advantages of object oriented programming?
2. What is data encapsulation?
3. What is a default constructor? Illustrate.
4. What is a destructor?
5. List the advantages of generic programming.
6. What is an exception? What is its use?
7. What is inheritance? Illustrate
8. What is meant by abstract class?
9. What are streams? What are their advantages?
10. What is a manipulator?

PART B — (5 × 16 = 80 marks)

11. (a) Explain the major principles of object oriented programming with illustrations and neat sketches. (16)

Or

- (b) Illustrate the various function call mechanisms with suitable programming examples. (16)

12. (a) Define a class Time with string containing seconds elapsed till midnight (12.00 AM) as a single data member. Write AddTime function which adds two different Time objects and returns a new Time object. Write a DisplayNormal function which converts the time in seconds and displays in a normal fashion HH:MM:SS. (16)

Or

- (b) Define a class called Complex. Include functions for reading and displaying complex objects. Write a function to overload + operator to add two Complex objects. (16)
13. (a) What is a function template? Write a template function to sort arrays of float and int using bubble sort. (16)

Or

- (b) Discuss in detail about exception handling constructs and write a program to illustrate divide-by-zero exception. (16)
14. (a) What are virtual functions? Explain with an example how late binding is achieved using virtual function. (16)

Or

- (b) Explain the various runtime casting methods in detail. (16)
15. (a) Discuss in detail about Standard Template Library (STL). (16)

Or

- (b) (i) Write a detailed note on namespaces. (8)  
(ii) Explain how sequence iterators work. (8)