LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Sc. DEGREE EXAMINATION – **COMPUTER SCIENCE**

THIRD SEMESTER – **NOVEMBER 2016**

CS 3502 – OBJECT ORIENTED PROGRAMMING WITH C++

Date: 04-11-2016   Dept. No.   Max. : 100 Marks
Time: 09:00-12:00

PART – A

ANSWER ALL QUESTIONS   **(10 x 2 = 20 marks)**

1. What is data abstraction? Give example.
2. Define inline function. Give example.
3. What is a destructor? Give example.
4. What is default arguments? Give example.
5. What is pure virtual function? Give example.
6. Distinguish between overloading and overriding.
7. What is a formatted output stream?
8. Write the syntax for opening a file?
9. What are constructs used in Exceptions handling?
10. What is a template? Mention its types.

PART – B

ANSWER ALL QUESTIONS   **(5 x8 = 40 marks)**

11. a) Explain Data Abstraction and encapsulation with example.

(Or)

b) What is function prototyping? Write about parameter passing mechanism with suitable example.

12. a) Write a C++ code to implement dynamic initialization of objects.

(Or)

b) Define a class to represent a bank account. Include the following data members and member functions. Data members: Name of the depositor, Account number, Type of account, Balance amount. Member functions: To assign initial value. To deposit an amount, To withdraw an amount after checking the balance, To display the name and the balance amount. Write a C++ code to implement the above.

13. a) Explain in detail about different type of inheritance with suitable examples.

(Or)

b) Explain Operator overloading with an example.

14. a) Explain in detail about formatted console I/O operations.

(Or)

b) Explain in detail about sequential accessing and Random accessing of files with example programs.

15. a) Explain elaborately about exception handling mechanism with example.

(Or)

b) What is class template? Write a C ++ program for defining and declaring a class template to find the maximum of two data items of type int, float & char.

PART – C

ANSWER ANY TWO QUESTIONS **(2 x20 = 40 marks)**

16. a) Discuss in detail about the basic concepts of OOPs. Write down the benefits of OOP.

   b) Explain in detail about constructors.

17. a) Discuss in detail about virtual function with suitable program.

   b) Explain about C++ stream classes in detail.

18. a) What do you mean by function template?. Write a function template for sorting an array of integers, float and char.

   b) Develop a program in C++ to create hospital management system with following data members in the base and in the derived class. Name of the patient, sex, age, ward number, bed number, nature of illness, date of admission. Design a base class consisting of data members such as, name of the patient , sex and age and another base class consisting of the data members as bed number and nature of the illness. The derived class consists of the data member as date of admission.

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