C

Question Paper Code: 53204

B.E./B.Tech. DEGREE EXAMINATION, NOV 2019

Third Semester

Computer Science Engineering

15UCS304 - OBJECT ORIENTED PROGRAMMING WITH C++

(Regulation 2015)

Duration: Three hours   Maximum: 100 Marks

Answer ALL questions

PART A - (5 x 1 = 5 Marks)

1. Which feature can be implemented using encapsulation?   CO1- R

    (a) Inheritance   (b) Abstraction   (c) Polymorphism   (d) Overloading

2. Can constructors be overloaded in derived class?   CO2- R

    (a) Yes, always   (b) Yes, if derived class has no constructor

    (c) No, programmer can't do it   (d) No, never

3. What do you call the languages that support classes but not   CO3- R
    polymorphism?

    (a) Class based language

    (b) Procedure oriented language

    (c) Object-oriented language

    (d) If classes are supported, polymorphism will always be supported

4. A template class can have _____   CO4- R

    (a) More than one generic data type   (b) Only one generic data type

    (c) At most two data types   (d) Only generic type of integers and not characters

5. Which header file is required to use file I/O operations?   CO5- R

    (a) <ifstream>   (b) <ostream>   (c) <fstream>   (d) <iostream>

PART – B (5 x 3= 15 Marks)

6. When do we declare member of a class static?   CO1- U

7. List out the operators which cannot be overloaded?   CO2- R

8. What does multiple inheritance mean?   CO3- U

9. Give an example for exception handling.   CO4- U

10. What are the functions that the file stream class provides?   CO5- R

PART – C (5 x 16= 80 Marks)

11. (a) Write a C++ program to create class STUDENT data members, roll no, name, course, branch and semester. Store them in array of objects. Write member functions to sort the students in ascending order and print the student details branch wise.   CO1- U   (16)

Or

    (b) Explain the features of object oriented programming.   CO1- U   (16)

12. (a) Discuss about constructors and destructors in detail with example.   CO2- App   (16)

Or

    (b) Write a C++ program to implement addition of two complex numbers using operator overloading.   CO2- App   (16)

13. (a) Assume the classes person, student and partimestudent are inherited from one another. Define classes with suitable data members (common and special attributes) and methods using C++ program to demonstrate the type of inheritance.   CO3- U   (16)

Or

    (b) Explain about runtime and compile time polymorphism with suitable example.   CO3- U   (16)

14. (a) Write a class template to generate a class matrix. Using the class template definition, the program should handle the arithmetic operations (+, -, *, /) for an particular type(such as int, float, double, char)   CO4- App   (16)

Or

    (b) (i) Explain how to handle multiple exceptions in C++ with an example.   CO4- U   (8)

        (ii) Design an exception handling construct to handle divide-by-zero exception.   CO4- App   (8)

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15. (a) (i) Write a C++ program to store the details about Student CO5- App (10)
information in a binary file and retrieve details about a Student
based on given type(UG Student/ PG Student).

(ii) Define STL. Explain its components and types. CO5- U (6)

Or

(b) (i) Write C++ file handling routine to copy one content of file into CO5- App (8)
another file.
(ii) Explain various file stream classes needed for file CO5- U (8)
manipulations.

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