BCSE II 2nd Class Test on OOPS Full Marks: 30 Time: 60 Min. Attempt All Questions

CO1: Understand and realize OOP features through C++ and Java. [10 marks]

1. a) How does the task of destructor is accomplished in Java? 1.5
   b) How will you copy the content of one object to another in Java? 1.5
   c) What will you do to achieve runtime polymorphism in Java? 1.5
   d) Mention the utility of package in Java. 1.5
   e) Describe the access specifier for a class in Java. 2
   f) What is checked exception? 1
   g) A String object contains only digits. How will you convert into int. 1

CO2: Design and implement the object oriented solution for problems using C++ and Java. [10 marks]

2. Anybody designing a course of a curriculum must follow certain specifications like, predefined maximum and minimum contact hours for the course. One must provide the content of the course, lecture plan and text books. What measures you will take to enforce all these? 2

3. Consider each student object has roll, name and phone number. One should be able to collect data for the students and display the same. The objects are also to be stored in a file and all are to be read. Design the class(es) and write code to work with the file. 8

CO3: Understand and utilize STL classes in C++ and collection classes in Java [5 marks]

4. a) We want to store the applicants in a priority queue using the facility of STL in C++. Each applicant has id, name and score. Higher the score higher is the priority. What measures will you take? 3
   b) To work with hash map how can you customize the hash function in C++? 2

CO4: Understand and Develop multithreaded programming and event driven programming in Java [5 marks]

5. a) What are two approaches for creating threads. Which one is preferred and why? 2
   b) Suppose there is a predesigned class Data that has a method modify() to change the value of attribute. Now, in a multithreaded environment number of threads with same Data object and may call modify(). What measures will you take to prevent simultaneous attempt of modification of Data object. Describe with skeleton code. 3

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