BCSE II 2nd Class Test on Adv. OOP Full Marks: 25 Time: 60 Min. Attempt All Questions w.r.t. JAVA

CO1: Conceptualize the object oriented features of Java and Python [13 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) In Java, consider a class X has a public method f(int). Class Y extends X and contains a public method f(float). Now consider the following code snippet:

```
int i; float fl;
Y c=new Y(); c.f(i); X b=c; b.f(fl);
```

Explain, the calls for method f(). 3

d) Mention the utility of package in Java. 2

e) Describe the access specifier for a class in Java. 3

f) What is checked exception? 1

g) Consider X is a class. What happens for the statement: X a; 1

CO2: Understand and Develop concurrent programming in Java and Python [6]

2. a) What are two approaches for creating threads. Which one is preferred and why? 2

b) Compare start() and run(). 1.5

c) Suppose there is a predesigned class Data (not designed for concurrent programming) 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. 2.5

CO4: Design and implement object oriented solution for problems using Java and Python [6]

3. a) 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

b) Accept a one line of text data for a string object. Assume words are separated by a space. Find the number of words, longest word, whether the word "abcd" is present in the input text or not and display all the words also. Write the code. 4