

**BCSE-II**  
**Adv. OOP 1st Class Test**  
**Full Marks: 30**

**Time: 1 hr. 30 mins. (inclgd. Question download and answerscript upload)**

- Arrange the pages in sequence and form a single pdf.
- In general, file name will be last two digits of your class roll followed by your first name. For Lateral entry students filename must start with L and for readmitted students filename must start with R
- On the top of the first page write your Class Roll Number and Name
- Send the answer script at: [sksjuexam@gmail.com](mailto:sksjuexam@gmail.com) with Subject: Java Test
- In case of any query give me a call at 9433526300

Attempt all questions  
Answer w.r.t. JAVA

**CO1: Conceptualize the object oriented features of Java and Python [13]**

- 1) a) Java is platform independent -- why? 1.5  
b) We need to pass the values of an int and a float variable to a method and the method may change the values which are required once we return from the method. How it can be achieved? 1.5
- c) How to achieve deep and shallow copy of an object? 1.5
- d) What you can interpret from X\$Y.class file? 1
- e) Discuss the access specifier for a class. 2
- f) Compare abstract class and interface in the context of ensuring design guidelines. 1.5
- g) What is the advantage of using @override? 1
- h) How to deal with checked exceptions? 1.5
- i) Accept a filename from user and check whether it's a directory or not. 1.5

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

- 2) a) Compare start() and run(). A runnable object makes a call to run method -- What will happen? 2  
b) Suppose there is a list of accounts. Each account has account number and balance. Multiple threads are there to work on the same account list and will update the account balance. How will you achieve proper update allowing the concurrency to the extent possible? Provide the design. 4

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

- 3) a) A software system deals with basic objects of types like, Employee, Dept, Product, StockInfo, SalesInfo, PurchaseInfo. The system has different functional modules like, EmployeeManagement, SalesManagement, PurchaseManagement. Modules work with the subsets of the basic objects. How will you organize your system? 2.5  
b) For every friend of yours name and date of birth (taken as string) are stored in an array. Design the class(es) and write down the code for the method to find the name of the friends born in a particular month (given as int argument to the method). Date string may follow any of the following formats: dd/mm/yyyy or dd-mm-yyyy format. 3.5