

Marks: 30

Time: 1 Hour 15 Minutes+
15 Minutes Script Upload Time

Professionalism	Excellence	Respect
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Answer all the questions. The weight of each question is mentioned at the right side

1. a) What is Bidirectional Associations in UML? Describe it for drawing OOP Design. 2
 b) What are the differences between composition and aggregation? Briefly explain with example and diagram. 4
2. a) "Set is a collection, which always guaranteed ordered data in OOP". Do you agree? Justify your answer with example (source code). 3
 b) Write regular expression (pattern code only) for checking the information of BSSE students in the final examination. Consider three data for checkup. 3
 - Exam roll must be 4 digit (e.g. 1107)
 - Email id must be start with *bsse* and end with *du.ac.bd* (e.g. *bsse1103@iit.du.ac.bd*)
 - Session must be two year with a dash (-) in the middle (e.g. 2018-2019)
3. It is known to all that everything is measurable. Explain how you measure Object Oriented Design principles named as Encapsulation, Inheritance, and Polymorphism. Briefly explain the MOOD metrics with examples. 6
4. a) Manually review the following code segment and write line numbers with error. 2

```

1  public class Student{
2      private final String name, department;
3      public Student(String name){
4          this.name=name;
5      }
6      public Student(String department){
7          this.name=name;
8      }
9
10     @Override
11     public void toString() {
12         System.out.println(name, department);
13     }
14 }
```
- b) Object Oriented Design can be measured using C.K. Metrics Model which helps managers and designers to make better design decision about their software. Discuss the proposed six C.K. metrics for measuring the OO software. 4
5. a) Why all the software entities must not be closed? Explain Open-Closed Principle in object oriented paradigm. 3
 b) How Liskov Substitution Principle works on OOP inheritance? Briefly explain your answer and give example. 3

GOOD LUCK!

(Please return this question paper with the answer script)