Independent University, Bangladesh
CSE213, Autumn 2021, Section-1, Quiz-2

Duration: 50 minutes. Total marks: 10

1) Write the title of your project first, and then draw a class diagram by hand to fulfill the following within the context of your project:

TREE-A:
Your class-diagram MUST have a TREE representing multiple inheritance for "users" of your project (**using classes and Interfaces**), and:

a. There must be at least **1 interface defined by you**
    i. With some meaningful abstract methods
b. There must be at least 1 abstract class
    i. With some meaningful abstract methods
    ii. In addition, the abstract class must have at least one non-abstract method
c. There must be at least 2 non-abstract "user" sub classes
    i. With at least 1 additional field
    ii. With at least 1 additional **static** method
    iii. Also, show ALL overridden method

TREE-B:
Your class-diagram MUST have another TREE representing inheritance for "non-users" classes of your project, and:

d. There must be 1 "non-user" super class
    i. With some meaningful fields and methods
e. There must be at least 2 non-abstract "non-user" sub classes
    i. With at least 1 additional field
    ii. With at least 1 additional **static** method
    iii. Also, show ALL overridden method
f. One of these classes of the TREE must have at least 1 **static** field

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g. There must be aggregation in where
    i. at least one of the classes (abstract/non-abstract) must have an object-handle of another class (this another pre-existing class may be your own class or a library class) as its field
h. There must be composition where
    i. at least one of the classes (abstract/non-abstract) must have an object-handle of another class (this another pre-existing class may be your own class or a library class) as its field

Show aggregation in TREE-A, and composition in TREE-B

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i. There must be at least 1 association in your diagram (can show with classes of any of the trees)

NOTE: class/interface and their fields and methods MUST have meaningful and logically acceptable names. To get marks, they MUST make sense in terms of "is-a" / "has-a" relationship. Also, the association should show usage and multiplicity.