CT3: CSE 203 (Sec A) - Object-Oriented Programming I: Java
Time: 25 min   Mark: 20

Name: **ID:**

Question 1:   **[10]**

Define an abstract class named "**Musician**". Add the following inside the class.

   a) Attributes: *name* and *field*
   b) Add a parameterized **constructor** which will take parameters for all instance variables and initializes the respective attributes with the parameters passed to the constructor.
   c) Add the following methods.
       i.   Concrete method: Override **toString**() and return the values of attributes as a concatenated String,
       ii. Abstract method:
             • The first abstract method named *play* that doesn't take any parameter and doesn't return anything either.
             • A method named *geNoOfRecords* that will return an int and does not take any parameter.

Question 2:   **[10]**

Define a concrete class named **Singer** and make it subclass of **Musician** class. Write the minimum code required to make the **Singer** class error-free. Additionally, add the following to this **Singer** class.

   a) Attributes: *noOfRecords*
   b) Add a parameterized **constructor** which will take parameters for all 3 instance variables (2 from parent and one from this class). Implement the constructor in proper way.

Name: **ID:**

Question 1:   **[8]**

Declare an **interface** named **Door**. Add 2 abstract methods named *openDoor*, *closeDoor*. Both of these methods will not take any parameter and will not return anything. Add one more abstract method named *isOpen*() which will return a **boolean**.

Question 2:   **[12]**

Carefully observe the code below. Create a class name **OperationTheatre** which should be a subclass of the following **Room** class and implement the **Door** interface. Write the minimum code required to make the **OperationTheatre** class error-free. Additionally, add the following to this **OperationTheatre** class.

a) Attributes: *equipments* of String array type
c) Add a parameterized **constructor** which will take parameters for all 3 instance variables (2 from parent and one from this class). Implement the constructor in proper way.

```java
public class Room {
    int length, width;

    public Room(int length, int width) {
        this.length = length;
        this.width = width;
    }

    public int getArea() {
        return length*width;
    }
}
```