

Question D

Create an abstract class `Player` with fields: `id(int)` – indicates the id number of the Player, `balance(double)` – the amount of money, `gamesPlayed(int)` – indicates the number of games played by Player. Constructor with arguments in which the `gamesPlayed` is initialised to zero, `toString()`, abstract method: `void incrGamesPlayed()` and `calBonus()` (2)

Derive a class `PremiumPlayer` with fields: `points(int)` initialised to zero in constructor with arguments, `toString()`

abstract method: `void incrGamesPlayed()` to increment the value of `gamesPlayed` whenever a game is started to play by a value of one.

`calBonus()` – increments the balance by the value passed as argument (3)

```
interface MineSweeper {  
    public static final int gameDuration = 60;  
    public static final int wonpoints = 5;  
    bool startGame(gameDuration);  
}
```

- is initialised with zero or negative value.
8. TestStudent throws InputMismatchException when the input obtained from user mismatches with the required type
 9. Include finally block wherever necessary
 10. cal_CGPA() throws ArithmeticException if the denominator is zero

Question D

1. Player constructor throws IllegalArgumentException if the id and balance is initialised with zero or negative value.
2. PremiumPlayer constructor throws IllegalArgumentException is initialised with zero or negative value.
3. TestPlayer throws InputMismatchException when the input obtained from user mismatches with the required type
4. Include finally block wherever necessary
5. Create an array of objects of Players initialised with objects of PremiumPlayer throw ArrayIndexOutOfBoundsException when printing the details of the array objects

interface Cal_Bonus{

public static final int bonusperPoint = 20;

int calBonus();

}

(2)

The class PremiumPlayer implements the following interfaces MineSweeper and Cal_Bonus.
Override the methods such that:

bool startGame() starts incrementing the gameDuration from 0 until 60 and returns 1 if game finished

void statusGame(String) – that increments the points by wonpoints if the argument passed is WIN or else LOST no change in points

int calBonus() – which returns the bonus obtained by the PremiumPlayer by multiplying the bonusperpoint and points.

(4)

Define TestPlayer that instantiates objects of PremiumPlayer. The methods of the derived class are tested. Check the PremiumPlayer object is an instance of class Player.

(2 marks)

```
interface Minesweeper {  
    public static final int gameDuration = 60;  
    public static final int wonpoints = 5;  
    bool startGame(gameDuration);  
    int statusGame(String);  
}
```

(2)

```
interface Cal_Bonus {  
    public static final int bonusperPoint = 20;  
    int calBonus();  
}
```

The class PremiumPlayer implements the following interfaces Minesweeper and Cal_Bonus.
Override the methods such that:

bool startGame() starts incrementing the gameDuration from 0 until 60 and returns 1 if game