NATIONAL SCHOOL OF BUSINESS MANAGEMENT

BSc. In Management Information Systems (Special) – 20.1
BSc. (Honours) in Software Engineering – 20.1
BSc. (Honours) in Computer Science – 20.1
BSc. (Honours) in Computer Networks – 20.1
BSc. (Hons) in Management Information Systems – 20.1
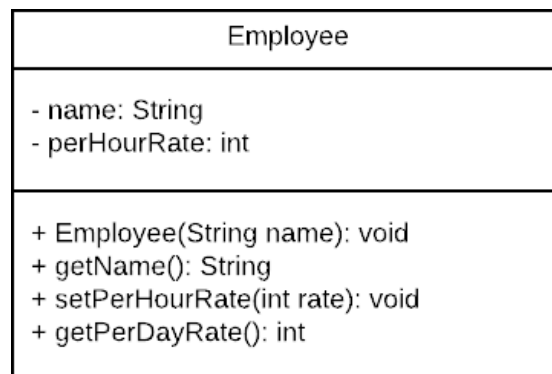
Year 01 Semester 02 Examination
16-12-2020
SE 101.3 – Object-Oriented Programming with Java

Instructions to Candidates

1) Answer all questions.

2) Total Number of Pages ……………

3) Time allocated for the examination is three (03) hours and 30 minutes (Including downloading and uploading time)

4) Weightage of Examination: 60% out of final grade

5) Download the paper, provide answers to the selected questions in a word document.

6) Please upload the document with answers (Answer Script) to the submission link before the submission link expires. Answer script should be uploaded in PDF Format

7) Under any circumstances E-mail submissions would not be taken into consideration for marking. Incomplete attempt would be counted as a MISSED ATTEMPT.

8) The Naming convention of the answer script – Module Code_Subject name_Index No

9) You must adhere to the online examination guidelines when submitting the answer script to N-Learn.

11) Your answers will be subjected to Turnitin similarity check, hence, direct copying and pasting from internet sources, friend's answers etc. will be penalized.

01. Refer to the following class descriptions and write programs using java to the following
questions.

```
                    Employee

          - name: String
          - perHourRate: int

          + Employee(String name): void
          + getName(): String
          + setPerHourRate(int rate): void
          + getPerDayRate(): int
```

I.   Convert the above into a java class. (Write a java program to include all the specified 'Data' and
      'Methods' in the diagram.)   (10 Marks)

II.   Write java code to represent no parameter constructor (default) and parameterized constructor
      relevant to the Employee class.   (5 Marks)

III. In another class, include the main method and write a java code to create an object from the
      above 'Employee' class.   (5 Marks)

IV.   Inside the above main method, using the object created in part II invoke all four methods with
      required values.   (5 Marks)

02. Write Java source code to the following questions.

I.   A base class 'A' contains an integer variable 'a' as data and a parameterized constructor to set a
      value to the variable. Class 'B' derives/inherits from the class 'A' and it contains the following
      data and methods.
      Data   b, c (integers)
      Methods   parameterized constructor, A method to multiply and display the variable a,b
                    and c.

                                                                                    (10 Marks)

II.   Create a class 'C'. Inside the class 'C', create an object and call the display method of class 'B'.
                                                                                    (5 Marks)

III.   An abstract class 'Employee' contains 'payAllowance' as an abstract method and
      'displayDepartment' as a non-abstract method. Interface 'Pay' contains 'payBonus' as a
      method.
      A class 'EmployeePay' needs to use both the abstract class methods and interface methods.

                                                                                    (10 Marks)

03.

I.   Write a single Java class and show how we can handle the following two types of exceptions in a single Java Program.
'ArithmeticException'
'ArrayIdexOutOfBoundsException'

(10 Marks)

II. Write a 'Multithreaded' program to display the following output to exhibit the behavior of a Thread by extending a 'Thread' class.

    Thread A: 1
    Thread A: 2
    Thread B: 1
    Thread A: 3
    Thread A: 4
    Thread B: 2
    Thread B: 3
    Thread A: 5
    Thread B: 4
    Thread B: 5

(10 Marks)

04.

I.   Design a suitable user interface (UI) and develop a program to input two numbers and display the highest number. You need to draw the UI, name the controls, and include the code behind the command buttons.

(10 Marks)

II. Write a Java program to write the following sentence in a text file, read and display the sentence.

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(10 Marks)

III. Imagine that a database table is created using MySQL as follows.   (10 Marks)

Table Name: Employee

Field_Name	Employee_ID	First_Name	Last_Name	Basic_salary	Dept_ID
Data Type	int	varchar	varchar	float	float

Write a java program to display the records available in the database table. Assume that the table contains many rows as records.

………………………END OF PAPER…………………………….