CENTRE FOR DEVELOPMENT OF ADVANCED COMPUTING

**Advanced Computing Training School**

**Course Name :** PG Diploma in Advanced Computing

**Batch : March 2022 (set 2)**

**Module Name :** OOPs with Java **Date :** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Student Name :**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **Max Marks :** 40 Marks

**PRN No :** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **Duration :** 2 Hours

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**Q1. Write a Employee class with following properties: (25 Marks)**

**- Member variables**

**o String empName**

**o int empID**

**o String empRole**

**- Overloaded constructors**

**o No arguments constructor**

**o Constructor that accepts empId and empName (empRole is hardcoded)**

**o Constructor that accepts empID, empName and empRole**

**- Override toString**

**- Other methods of own choise**

**Write a menu driven program to demonstrate following operations using ArrayList of "Employee":**

**1. Add Employee to list**

**2. Remove Employee list**

**3. Show all Employee**

**4. Show all Employee in sorted order (sort on the basis of empID)**

**5. Find a Employee with empName**

**6. Save all Employees into file**

**7. Quit**

**Q2. Write a class Calculator in a package study (15 Marks)**

**Add following static method to the class which per calculation and return the result as per operator**

**public static int calculate(int number1, int number2, String operator);**

**List of valid operator (+, -, \*, /, %)**

**If any other operator is passed then throw a custom checked exception "WrongOperatorException"**

**Demonstrate use of Calculator class in main.**

**Evaluation Of Lab Exam should be based on following criteria:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Criteria** | **Details** | **Max**  **Marks** | **Marks**  **Obtain** |
| **Algorithm** | **Documentation of Algorithm and Flowchart** | **2** |  |
| **Program adheres to the algorithm and flowchart** | **2** |  |
| **Efficiency** | **Program is using only the required number of variables**  **/conditions/loops/pointers etc and is optimal** | **2** |  |
| **Correctness** | **The program produces desired output for a given input** | **20** |  |
| **The program handles all valid and Invalid inputs** |  |
| **Software**  **Engineering**  **Principles** | **The program has meaning variable/function names** | **2** |  |
| **The program is commented properly (At least 20% of the**  **code should be commented)** | **2** |  |
| **Viva** |  | **10** |  |
|  | ***Total Marks*** | **40** |  |
| **cccccccc** |  |  |  |

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**Signature of Student** **Signature of Evaluator** **Signature of Coordinator**