CENTRE FOR DEVELOPMENT OF ADVANCED COMPUTING



**Advanced Computing Training School**

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

**Batch : Mar 2022**

**Module Name : DS (set 4)** **Date :** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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

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

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**Q1. (28 marks)**

**Consider we have Student class with rollno, name and gender.**

**Implement Queue using Linklist for above Student class.**

**Write Menu driven (5 marks) program to perfrom below operations:**

**A. Insert Student (3 marks)**

**B. Remove Student (3 marks)**

**C. Print Queue (3 marks)**

**D. Print all Male students (3 marks)**

**E. Print all FeMale students (3 marks)**

**F. Empty Queue using recursion (4 marks)**

**G. Print Queue in reverse order (4 marks)**

**Q2. (6 + 6 marks)**

**Write Java code to sort below array using bubble and insertion sorting technique. Each element in the array is object of Number class which holds int value.**

**{5,16,7,3,1,11,29,18,20,25}**

**Evaluation of Lab Exam should be based on the following criteria:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Criteria** | **Details** | **Max** | **Marks** |  |
| **Marks** | **Obtain** |  |
|  |  |  |
| Algorithm | Documentation of Algorithm and Flowchart |  |  |  |
| Program adheres to the algorithm and flowchart |  |  |  |
|  |  |  |  |
| Efficiency | Program is using only the required number of variables |  |  |  |
| /conditions/loops/pointers etc and is optimal |  |  |  |
|  |  |  |  |
| Correctness | The program produces desired output for a given input | 30 |  |  |
| The View is to de well designed as expected.  The view to be designed using appropriate helpers.  The approach of accepting and processing form data.  Structure of the application as per MVC design pattern. |  |  |  |
|  |  |  |  |
| Software | The program has meaning variable/function names.  All MVC components to be well designed and coded as MVC application design.  Navigation between the views should be as expected. The sample data given should be used. |  |  |  |
| Engineering | The program is commented properly (At least 20% of the |  |  |  |
| Principles | code should be commented) |  |  |  |
|  |  |  |  |  |
| Viva |  | 10 |  |  |
|  | ***Total Marks*** | **40** |  |  |

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