**CENTRE FOR DEVELOPMENT OF ADVANCED COMPUTING**



**Advanced Computing Training School**

**Course Name:** e-Diploma in Advanced Computing

**Batch:** MAY2021

**Module Name:** Algorithm & DS Lab Exam **Date: \_\_\_\_\_\_\_\_\_\_\_\_\_**

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

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

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**Q1. [Marks- 25]**

**Consider we have Student class with rollno(int), name(String) and gender(char) as member variables**

**Implement Stack Of Student using Linklist.**

**Write Menu driven program to perfrom below operations:**

**A. Push Student (5 marks)**

**B. Pop Student (5 marks)**

**C. Print complete Stack using toString() (5 marks)**

**D. Print all Male Student (5 marks)**

**E. Print all FeMale Student (5 marks)**

**Q2. [Marks -10 + 5 ]**

**Write Java code to sort below array using Quick sort and search 25 using binary search operation.**

**{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** | **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** | **25**  **5** |  |
| **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** |  |
|  | ***Total Marks*** | **40** |  |
| cccccccc |  |  |  |

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

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