

LAB 6 – 13.09.2024 – QUEUE AND STACK APPLICATIONS

Evaluation

Observation - 5 marks

Execution - 15 marks

Spot - 5 marks

OBSERVATION (5 MARKS)

1. What is Queue? Write its types.
2. What are the basic operations on Queue.
3. Differentiate Circular Queue with Priority Queue.
4. List down some applications of Queue Data Structure.
5. What are the two possible ways of implementing a queue?
6. Implement a queue using two stacks

EXECUTION (15 MARKS)

1. Imagine a toll gate with only one counter. The following cars are waiting:
TN601234, TN010978, TN453452, TN606116. Find a suitable data structure for
the above scenario and simulate the same. (7.5 marks)
 - a. What is the position of car TN010978?
 - b. What is the position of newly arrived car TN596754?
 - c. Identify the car which gets served first?
 - d. Identify the car which gets served first?
 - e. What will be the next car that get served after TN453452?

2. Write a program that extracts students from two different sections and arrange them in separate circles of boys and girls. The scenario is better explained in the diagram (7.5 marks)

