

PES UNIVERSITY
(Established under Karnataka Act No. 16 of 2013)
100 Feet Ring Road, BSK III Stage, Bengaluru-560 085
Department of Computer Science and Engineering

UE20CS207 - DATA STRUCTURES AND ITS APPLICATIONS LABORATORY

WEEK – 5

OCTOBER 11th to 16th 2021

TOPIC : STACKS & QUEUES

ASSIGNMENT : COMMON TO ALL SECTIONS STUDENTS:

TO BE IMPLEMENTED IN LAB : (15 MARKS) -

1. Josephus Problem : There are n people standing in a circle waiting to be executed. The counting out begins at some point in the circle and proceeds around the circle in a fixed direction. In each step, a certain number of people are skipped and the next person is executed. The elimination proceeds around the circle (which is becoming smaller and smaller as the executed people are removed), until only the last person remains, who is given freedom. Given the total number of persons n and a number k which indicates that k-1 persons are skipped and kth person is killed in circle. The task is to choose the place in the initial circle so that you are the last one remaining and so survive. - **(Common for All sections)**

2a. Monday - (15 MARKS) - Implement a double ended queue using arrays

2b. Tuesday - (15 MARKS) – Sort the contents of stack using temp stack.

2c. Wednesday - (15 MARKS) – Implement queue using stacks (using only push and pop)

2d. Thursday - (15 MARKS) – Implement stacks using queue.(using only enqueue and dequeue)

2e. Friday - (15 MARKS) - Consider a stack with N elements. Pop all the elements from the stack and insert them in a queue. Dequeue every alternate and store the result in an array.