VIT®

Vellore Institute of Technology

(Deemed to be University under section 3 of UGC Act, 1956)

SCHOOL OF COMPUTER SCIENCE AND ENGINEERING

CSE2005 – Operating Systems Laboratory

Fall semester 2020-2021

SET 2

Instructions:

Components (Marks)
Algorithm:10
Program1: 15
Program2:15
Output: 10

a. Aim, algorithm and output can be handwritten or typed (your choice).
b. The snapshot of code and output should be scanned.
c. *The filename should be your register number.
d. The scanned copy of the whole content is to be uploaded in VTOP before 11:45 AM. (The time of submission will be noted).

1. Implement Cigarette smoker's problem using semaphore (25)

Scenario: Assume a cigarette requires three ingredients to make and smoke: tobacco, paper, and matches. There are three smokers around a table, each of whom has an infinite supply of *one* of the three ingredients — one smoker has an infinite supply of tobacco, another has paper, and the third has matches.

There is also a non-smoking agent who enables the smokers to make their cigarettes by arbitrarily (non-deterministically) selecting two of the supplies to place on the table. The smoker who has the third supply should remove the two items from the table, using them (along with their own supply) to make a cigarette, which they

smoke for a while. Once the smoker has finished his cigarette, the agent places two new random items on the table. This process continues forever.

2. **Write and execute a C program to implement Disk scheduling (C-SCAN) (25)**