



### End Term Examinations (April 2019)

School: School of Engineering

Program: B.Tech IT/DS

Course: Operating System Building Blocks

Course Code: CSC222

Semester: IV

Max Marks: 30

Duration (mins): 60

**Note-1.** Figures to the right indicates full marks.

**2.** Attempt any three questions.

Q1)

- a) What is process? Explain process state diagram. (5)
- b) Explain the following
- i. Operation on process
  - ii. System Calls (5)

Q2)

- a) Define operating system. List any two features of OS. (2)
- b) Solve the following.
- i. Solve example using Round Robin Algorithm. Calculate waiting time of each process and also calculate average waiting time.

Quantum 3

Process	Arrival time	Execution time
P0	0	10
P1	1	5
P2	2	11
P3	3	7

- ii. Solve using First Come First Served (FCFS) algorithm. Calculate waiting time of each process, average waiting time, turn around time, completion time.

Process	Arrival time	Execution time	Service time
P0	0	9	4
P1	1	12	8
P2	2	18	6
P3	3	15	20

(8)

Q3)

- a) Define co-operating process. (2)
- b) Define segment. Also define base and limit. (2)
- c) Reference string 7 0 1 2 0 3 0 4 2 3 0 3 2 1 2 0 1 7 0 1 solve using FIFO, Optimal page replacement and least recently used algorithm. Frame size =3. (6)

Q4)

- a) Define the following terms
1. One time password
  2. Program Threats
  3. System Threats
  4. User Authentication
  5. Computer security classification (5)
- b) Explain critical section problem with solutions. (5)

Q5)

- a) Why memory management is important? (2)
- b) Explain the communication between client and server. (8)