

B.Tech III Year I Semester (R15) Supplementary Examinations June 2018

OPERATING SYSTEMS

(Common to CSE & EIE)

Time: 3 hours

Max. Marks: 70

PART – A

(Compulsory Question)

1 Answer the following: (10 X 02 = 20 Marks)

- What is meant by system calls?
- What is meant by race condition?
- A counting semaphore was initialized to 10. Then 6 P (wait) operations and 4V (signal) operations were completed on this semaphore. Find the resulting value of the semaphore.
- What is meant by dispatcher?
- What is meant by swapping?
- What are the algorithms available for deadlock avoidance?
- What is meant by boot control block?
- What is meant by global replacement and local replacement?
- What is meant by device drivers?
- What is meant by SSTF scheduling?

PART – B

(Answer all five units, 5 X 10 = 50 Marks)

UNIT – I

2 Discuss in detail the various system calls.

OR

3 Explain in detail inter process communication.

UNIT – II

- What is multithreading? Explain the thread libraries in detail.
- Describe semaphores in detail.

OR

5 Determine the average waiting time and average turnaround time for FCFS, SJF, non-preemptive priority and round robin scheduling algorithms for the given process, burst and priority given below.

Process	Burst	Priority
P1	8	4
P2	6	1
P3	1	2
P4	9	2
P5	3	3

UNIT – III

6 Given page reference string with 4 frames:

1, 2, 3, 4, 2, 1, 5, 6, 2, 1, 2, 3, 7, 6, 3, 2, 1, 2, 3, 6

Compare the number of page faults for LRU, FIFO and optimal page replacement algorithm.

OR

7 Explain the Banker's algorithm for deadlock avoidance with an example.

UNIT – IV

8 Explain the features and functionality of RAID in detail.

OR

9 Describe free space management in file system implementation in detail.

UNIT – V

10 Describe the services provided by the kernel I/O subsystem in detail.

OR

11 Discuss program threats, system and network threats of operating system in detail.
