



B.Tech VII Semester Regular/Supplementary Examinations, November 2022

OPERATING SYSTEM
(Open Elective)
(Electronics and Communication Engineering)

Maximum Marks: 70

Date:03.12.2022 Duration: 3 hours

- Note:
1. This question paper contains two parts A and B.
 2. Part A is compulsory which carries 20 marks. Answer all questions in Part A.
 3. Part B consists of 5 Units. Answer any one full question from each unit which carries 10M.
 4. Each question carries 10 marks and may have a, b, c, d as sub questions.

Part-A

All the following questions carry equal marks (10x2M=20 Marks)

- 1 What are the objectives of Operating system?
- 2 What are the major activities of operating systems with regard to process management?
- 3 What does PCB contain?
- 4 What is Semaphore?
- 5 State the four necessary condition for a deadlock situation to arise.
- 6 What is the use of Valid-Invalid Bits in Paging?
- 7 What is a pure demand paging?
- 8 What are the various File Operations?
- 9 What are the various layers of a file system?
- 10 What are protection goals and principles?

Part-B

Answer All the following questions.

(5X10M=50Marks)

- 11 Explain User Operating-System Interface in detail. 10M
- OR
- 12 Explain the various types of system calls with examples. 10M
 - 13 Explain the FCFS, preemptive and non-preemptive versions of Shortest-Job-First and Round Robin (time slice = 2) scheduling algorithms with Gantt Chart for the four processes given. Compare their average turn around and waiting time. 10M

Process	Arrival Time	Burst Time
P1	0	10
P2	1	6
P3	2	12
P4	3	15

OR

- 14 A. Discuss in details the critical section problem and also write the algorithms for Readers – Writer’s problems with semaphores. 7M
B. What are the advantages of cooperating processes? 3M
- 15 What is a deadlock? What are the necessary conditions for a deadlock to occur? How can a system recover from deadlock? 10M
- OR
- 16 Write about the techniques for structuring the page table. 10M
- 17 What are the different ways to allocate frames to processes in a multiprogramming environment? 10M
- OR
- 18 Explain Directory and Disk Structure. 10M
- 19 Discuss how free space is managed by operating system. 10M
- OR
- 20 A. Discuss about the Process and threads in windows vista. 5M
B. Discuss about the Security in windows vista. 5M