

B.C.A. (Part—II) Semester—III Examination
3ST4 : ADVANCED OPERATING SYSTEM

Time : Three Hours]

[Maximum Marks : 60

Note :— (1) All questions are compulsory.
(2) All questions carry equal marks.

1. (a) What is Operating System ? Explain any four functions of an operating system. 6
(b) Explain process state transition in detail. 6

OR

2. (a) What is process ? Explain various process states. 6
(b) Explain services of operating system. 6
3. (a) Explain mutual exclusion primitives. 6
(b) Explain message passing in concurrent programming. 6

OR

4. (a) What is Semaphore ? How it is useful in process synchronization ? Explain. 6
(b) State and explain Dekker's Algorithm. 6
5. (a) Explain Dead-Lock prevention. 6
(b) Define Deadlock. Explain Banker's Algorithms for Deadlock avoidance with example. 6

OR

6. (a) Explain Deadlock Recovery. 6
(b) Explain Resource Allocation Graph. 6
7. (a) Explain storage hierarchy in storage management. 6
(b) Define and explain page fault. 6

OR

8. (a) Explain Architecture for paging mechanism. 6
(b) What is fragmentation ? Why it is needed to fragment memory ? Explain. 6
9. (a) Explain Scheduling Criteria. 6
(b) Explain Priority Scheduling. 6

OR

10. (a) Explain the following scheduling technique :
(i) SJF
(ii) FCFS
(iii) Round Robin. 6
(b) State and explain the difference between preemptive and non-preemptive scheduling. 6