

AS-1511

B.C.A. (Part-II) Semester-III Examination

ADVANCED OPERATING SYSTEM

Paper – 3 ST 4

Time : Three Hours]

[Maximum Marks : 60

N.B. :- (1) **ALL** questions are compulsory.

(2) All questions carry equal marks.

(3) Assume suitable data wherever necessary.

1. (a) What is Operating System ? Explain the role of operating system. 6
- (b) Explain life cycle of process in process states. 6

OR

2. (a) Explain the terms :
 - (i) Ready state
 - (ii) Running state
 - (iii) Block state. 6
- (b) What is process ? Explain process control block. 6
3. (a) Explain the mutual exclusion primitives and their implementation. 6
- (b) Explain message passing in concurrent programming. 6

OR

4. (a) What is semaphore ? How it is useful in process synchronisation ? Explain. 6
- (b) State and explain Dekkers algorithm. 6
5. (a) Define deadlock detection. Explain resource allocation graph. 6
- (b) Explain the preemptable and non preemptable resources. 6

OR

6. (a) Write Banker's algorithm for deadlock recovery. 6
(b) How deadlock can be prevented ? Explain. 6
7. (a) Explain contiguous storage allocation method. 6
(b) What is fragmentation ? Explain. 6

OR

8. (a) Explain the following terms :
(i) Page replacement strategies
(ii) Working set. 6
(b) What is page fault ? Explain with an example. 6
9. (a) Explain the preemptive and non-preemptive scheduling. 6
(b) Explain :
(i) CPU Burst
(ii) I/O Burst. 6

OR

10. (a) Explain :
(i) Priority scheduling
(ii) Fair share scheduling. 6
(b) What are the criteria for selection of a good scheduling algorithm ? Explain. 6