

Bachelor of Science (B.Sc. I.T.) Semester–II Examination**OPERATING SYSTEMS****Paper–III**

Time : Three Hours]

[Maximum Marks : 50

Note :—(1) All questions are compulsory.

(2) Draw neat and labelled diagram wherever necessary.

EITHER

1. (a) What is Operating System ? Explain different functions of operating system. 5
- (b) Explain the following terms :
 - (i) Process
 - (ii) Creation and termination operations of process. 5

OR

- (c) What is multithreading ? Explain with a suitable example. 5
- (d) What is scheduling ? Explain SJP shortest job first algorithm. 5

EITHER

2. (a) What is deadlock ? Explain various conditions due to which deadlock occurs. 5
- (b) Write short notes on :
 - (i) Resource Allocation Graph
 - (ii) Simulators. 5

OR

- (c) What is deadlock detection ? Explain recovery of deadlock. 5
- (d) Write short notes on :
 - (i) Deterministic modeling
 - (ii) Queuing Analysis. 5

EITHER

3. (a) Write short notes on :
 - (i) Swapping
 - (ii) Memory Allocation. 5
- (b) What is dynamic loading and dynamic linking ? Explain. 5

OR

- (c) Describe the following memory allocation methods :
 - (i) Single partition allocation
 - (ii) Multiple partition allocation. 5
- (d) What is paging ? Explain. 5

EITHER

4. (a) Explain various file accessing methods. 5
- (b) What is record blocking ? Explain. 5

OR

- (c) How is digital signature used for user authentication ? 5
- (d) Write short notes on the following :
 - (i) I/O hardware
 - (ii) I/O buffering. 5

5. Attempt **all** :

- (a) What is process thread ? Explain. 2½
- (b) Explain Starvation. 2½
- (c) Explain segmentation with paging. 2½
- (d) Explain the concept of cryptography. 2½