TKN/KS/16/6003

Bachelor of Science (B.Sc.) I.T. Semester—II (C.B.S.) Examination

OPERATING SYSTEM

Paper—III

Time : Three Hours] [Maximum Marks : 50

Note :— (1) **ALL** questions are compulsory and carry equal marks.

(2) Draw neat labelled diagrams wherever necessary.

EITHER

1. (a) What is operating system ? Explain the different functions of operating system. 5

(b) Explain the characteristics of modern operating system. 5

OR

(c) What are the different types of schedulers available ? Explain SJF scheduling with example. 5

(d) Explain the concept of microkernel. 5

EITHER

2. (a) Explain the features, on which performance of scheduling algorithm depends. 5

(b) What is a resource allocation graph ? Explain conditions for deadlock. 5

OR

(c) What is deadlock detection ? Explain. 5

(d) Explain steps for recovery from deadlock. 5

EITHER

3. (a) Explain the memory management requirements. 5

(b) Explain dynamic linking and dynamic loading. 5

OR

(c) Explain the concept of segmentation. 5

(d) List various allocation methods. Explain single partition allocation method. 5

EITHER

4. (a) Explain various user authentication methods. 5

(b) Explain RAID mechanism. 5

OR

(c) Explain I/O buffering mechanism. 5

(d) Explain digital signature in detail. 5

5. **ALL** questions are compulsory :

(a) Differentiate between program and process. 2½

(b) Explain :

(1) Logical address space

(2) Physical address space. 2½

(c) Give advantages of single partition allocation method. 2½

(d) Explain plaintext and ciphertext. 2½