**KNT/KW/16/5304**

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

**OPERATING SYSTEMS**

**Paper—III**

Time : Three Hours] [Maximum Marks : 50

**N.B. :—** (1) **All** questions are compulsory and carry equal marks.

(2) Draw neat and labelled diagram wherever necessary.

**EITHER**

1. (a) What is an operating system ? Write the characteristics of a modern operating system. 5

(b) What is a process ? Explain different states of process. 5

**OR**

(c) What is CPU scheduling ? Explain Round Robin scheduling. 5

(d) What is a thread ? Explain multithreading. 5

**EITHER**

2. (a) Describe in detail Deadlock breaking methods. 5

(b) Write short notes on :

(i) Simulators

(ii) Queuing analysis. 5

**OR**

(c) What do you mean by deadlock ? What are the conditions for deadlock ? Explain. 5

(d) Write short note on Resource allocation graph. 5

**EITHER**

3. (a) What is logical and physical address space ? Explain in detail. 5

(b) Differentiate between paging and segmentation. 5

**OR**

(c) Describe the methods that improve the main memory utilization. 5

(d) Write short notes on :

(i) Compaction

(ii) Protection. 5

**EITHER**

4. (a) Write a short note on record blocking. 5

(b) Explain I/O buffering. Why is it necessary ? What are the different types of buffers ? 5

**OR**

(c) Write notes on :

(i) Cryptography

(ii) Digital signature. 5

(d) Write note on File allocation methods. 5

5. (a) Explain FCFS scheduling algorithm. 2½

(b) Write a short note on Deterministic modeling. 2½

(c) Write a short note on Swaping. 2½

(d) What is Disk cache ? Explain. 2½