Code: CS5T5

III B.Tech - I Semester – Regular/Supplementary Examinations October 2018

OPERATING SYSTEMS
(COMPUTER SCIENCE AND ENGINEERING)

Duration: 3 hours   Max. Marks: 70

PART – A

Answer *all* the questions.   All questions carry equal marks

11x 2 = 22 M

1.

a) Give the advantages of Multiprocessor Systems.

b) What are Operating system Services?

c) Discuss about Priority Scheduling.

d) What is FCFS Scheduler?

e) What is Critical Section problem?

f) Define mutual exclusion in deadlock prevention.

g) What do you mean by Compaction?

h) Describe method of Segmentation.

i) State different Accessing Methods.

j) List various Disk-Scheduling Algorithms.

k) Discuss about resource allocation graph.

PART – B

Answer any ***THREE*** questions. All questions carry equal marks.

$$3 \times 16 = 48 \text{ M}$$

2. a) Describe Computer System Architecture in detail.   8 M

   b) Demonstrate system calls and different types of system calls.   8 M

3. a) Explain about Process Management.   8 M

   b) Describe Process Scheduling.   8 M

4. a) Define important feature of critical section? State the dining philosopher's problem and show how to allocate the several resources among several processes in a deadlock and starvation free manner.   8 M

   b) Describe the classical problems of Synchronization.   8 M

5. a) Demonstrate the structure of page table with hashed and inverted page tables in detail.   8 M

   b) Explain allocation of frames in detail.   8 M

6. a) Suppose that the disk drive has 5000 cylinders number 0 to 4999. The drive is currently serving a request at cylinder 143 and the previous request was at 125, the queue of the pending request in FIFO order is: 86,1470,913,1174,948,1509,1022,1750,130 starting from the current head position, what is the total distance (cylinders) that the disk arm moves to satisfy all the pending requests for each of the disk scheduling algorithms. i) SSTF   ii) SCAN.   8 M

b) Demonstrate File System Concepts.   8 M