Roll No. | | | | | | | | | | | | |

Total No. of Pages : 02

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B.Tech (Electronics & Computer Engineering) (Sem.–5)

OPERATING SYSTEM

Subject Code : BTCS-401

M.Code : 70573

Time : 3 Hrs. Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.**
3. **SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.**

SECTION-A

1. Answer briefly :

(a) Differentiate between long term scheduler from short term scheduler.

(b) Distinguish between a process and a program.

(c) What is the difference between a page table and a page frame?

(d) What is the need of page replacement?

(e) What are logical and physical pages?

(f) What do you mean by a file? What are its attributes?

(g) What does the acronym UNIX stands for?

(h) What is the role of i/o controller?

(i) What is the difference between kernel and shell?

(j) Explain the difference between time-sharing and multi-programming.

SECTION-B

2. What are the various views of the operating system? Explain.

3. What is a deadlock? What are the characteristics of a deadlock? Explain with examples.

4. Explain the concept of thrashing.

5. What is a PCB? What is stored in it? What is its role in the CPU scheduling? Explain.

6. Explain the structure of the Unix operating system in detail.

SECTION-C

7. What are the criteria used for comparing various scheduling algorithms? Compute the Average Waiting & Turnaround times for the following, if Shortest Remaining Time

   First Scheduling Algorithm is used:

Process	Arrival Time	Burst Time
P1	0	8
P2	1	4
P3	2	9
P4	3	5

8. Suppose that a disk drive has 5000 cylinders, numbered 0 to 4999. The drive currently Services a request at cylinder 143, and the previous request was at cylinder 125. The queue of pending request in FIFO order is :

   86, 1470, 913, 1774, 948, 1509, 1022, 1750, 130

   Starting from the current position, what is the total distance (in cylinders) that the disk arm moves to satisfy all pending requests, for each of the following algorithms:

   a) FCFS b) SSFT c) SCAN d) LOOK e) C-SCAN.

9. Explain the concepts of multiprocessor and distributed operating systems.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.