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Total No. of Pages : 02

Total No. of Questions : 18

# B.Tech. (CSE) (2018 Batch) (Sem.-4) OPERATING SYSTEMS Subject Code : BTCS-402-18 M.Code : 77628

# Time : 3 Hrs.

Max. Marks : 60

# INSTRUCTIONS TO CANDIDATES :

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

# SECTION-A

### Write briefly :

- 1. Difference between Time Sharing and Multiprogramming.
- FORK system call is used for?
- 3. What are four necessary conditions for deadlock to occur?
- 4. What is Inter Process Communication?
- 5. What is Multilevel Queue Scheduling?
- 6. Define Critical Section in Process Synchronization.
- 7. What is Thrashing?
- 8. Define Process Control Block
- 9. List some page replacement algorithms.
- 10. What is Boot Block?

#### SECTION-B

- 11. What is a Semaphore? Explain busy waiting semaphores.
- 12. Define Deadlocks. Explain different methods of deadlock handling.

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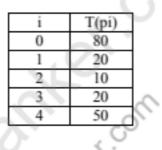
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- Compare paging with segmentation with respect to the amount of memory required by the address translation structures in order to convert virtual addresses to physical addresses.
- What is Disk Scheduling? Explain the following types of disk scheduling by giving an example :
  - a. SCAN
  - b. C-SCAN Scheduling
- What is Distributed Operating System? Explain main issues in designing distributed operating system.

#### SECTION-C

 Discuss Preemptive and Non-preemptive CPU Scheduling algorithms. Assume you have the following jobs to execute with one processor, with the jobs arriving in the order listed here :



- a. Suppose a system uses FCFS scheduling. Create a Gantt chart illustrating the execution of these processes?
- b. What is the turnaround time for process p3?
- c. What is the average wait time for the processes?
- What do you mean by Virtual Memory? Why it is needed? Discuss the hardware support required by the operating system to implement the virtual memory concept.
- 18. Write a Short note on ?
  - a. Dinning Philosophers problem
  - b. Bad block vs. Boot Block in Disk Scheduling.

#### 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.

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