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**IT-4003 (CBGS)****B.E. IV Semester**

Examination, May 2018

**Choice Based Grading System (CBGS)****Operating System***Time : Three Hours**Maximum Marks : 70*

- Note:* i) Attempt any five questions out of eight.  
ii) All questions carry equal marks.

- Explain why 'wait' and 'signal' operations on a semaphore should be executed automatically.
  - What are threads? What resources are used when a thread is created?
- With reference to the following set of processes, determine average waiting time and average turnaround time. Using the following scheduling algorithms:
  - Shortest Remaining Time first
  - Priority based (Preemptive)

Process	Arrival time	CPU Burst	Priority
P <sub>1</sub>	0	24	5
P <sub>2</sub>	3	7	3
P <sub>3</sub>	5	6	2
P <sub>4</sub>	10	10	1

- What is the difference between non-preemptive and preemptive scheduling? Explain why it is not likely to use strict non-preemptive scheduling in a computer system?
  - Write Banker's Algorithm.
- What is the cause of Thrashing? How does the system detect thrashing?
  - If the average page fault service time of 25ms and a memory access time of 100ns. Calculate the effective access time.
- The request tracks in the order received are 55, 58, 39, 18, 90, 160, 150, 38, 98. Apply the following disk scheduling algorithms starting tracks at 100.
  - SSTF
  - C-SCAN
- Explain various file access methods.
  - Explain any one deadlock detection methods.
- Write short notes on any four:
  - I-Node
  - TLB
  - System call
  - PCB
  - Demand paging

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