

**B.Tech. – VIEP – COMPUTER SCIENCE AND  
ENGINEERING (BTCSVI)**

**00061 Term-End Examination**

**June, 2014**

**BICS-019 : OPERATING SYSTEMS**

*Time : 3 hours*

*Maximum Marks : 70*

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**Note :** *Attempt any seven questions.*

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1. (a) What is an operating system ? Discuss the main services of the operating system.  
(b) Discuss the difference between 'time sharing system' and 'real time system'.  $5 \times 2 = 10$
  
2. Define the term process. List and explain the different states of a process. Also draw the process-state transition diagram. 10
  
3. (a) Explain the need for Process Control Block (PCB).  
(b) Discuss the performance criteria for CPU scheduling.  $5 \times 2 = 10$
  
4. (a) What is deadlock ? List necessary conditions for the occurrence of deadlock.  
(b) Define the use of monitors and semaphores operations.  $5 \times 2 = 10$

5. Explain the following scheduling algorithms :  $5 \times 2 = 10$
- (i) First in First out (FIFO) scheduling
  - (ii) Round Robin (RR) scheduling
6. Describe the implementation of paging and segmentation with suitable examples.  $10$
7. (a) What do you mean by Kernel ? Explain Monolithic Kernel and Micro Kernel.
- (b) Describe the allocation and re-allocation techniques in operating systems.  $5 \times 2 = 10$
8. What are the different levels of file directories ?  $10$
9. What do you understand by fragmentation ? What are the different techniques to remove fragmentation in case of multiprogramming with fixed partition and variable partitions ? Discuss.  $10$
10. Discuss any *two* of the following :  $5 \times 2 = 10$
- (i) Buffering
  - (ii) Virtual memory
  - (iii) File management
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