

**B.Tech. – VIEP – COMPUTER SCIENCE AND
ENGINEERING (BTCSVI)****Term-End Examination****December, 2015****BICS-019 : OPERATING SYSTEMS***Time : 3 hours**Maximum Marks : 70*

Note : Attempt any seven questions. Each question carries equal marks.

1. (a) Write any five differences between time sharing and real time operating systems. 5
- (b) Define an operating system. Write and explain any three critical functions of operating systems. 5
2. (a) Compare and contrast the use of monitors and semaphores operations. 5
- (b) Explain in detail any two disk scheduling mechanisms. 5
3. Define the term process. List and explain the different process states. Draw the process states transition diagram and explain it in brief. 2+5+3
4. What is a deadlock ? Explain with an example deadlock detection and prevention methods. 4+6

5. (a) Explain mutual exclusion problems with an example. 4
- (b) Explain in brief about any three file organization techniques. 6
6. Differentiate between paging and segmentation. Explain how protection is ensured in paging scheme. 5+5
7. Explain Paging algorithm in detail, with an example. 10
8. What is virtual memory ? Describe Page Replacement algorithm with an example. 2+8
9. Explain the following : 5+5
- (a) File protection methods
- (b) Directory structure of UNIX
10. Write short notes on any **two** of the following : $2 \times 5 = 10$
- (a) UNIX Kernel
- (b) Device Drivers
- (c) Windows NT
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