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BICS-009

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

Term-End Examination

June, 2016

00746

BICS-009 : LOGIC DESIGN

Time : 3 hours *Maximum Marks : 70*

Note : *Attempt any **seven** questions. Each question carries 10 marks.*

1. (a) How does thread approach improve the performance of an operating system ? *5*

(b) List two problems that force an operating system to use the technique of device dedication. *5*

2. List the major device management functions that must be performed by an operating system. Explain in detail. *10*

3. (a) What is a process ? What are the operations that are performed on a process ? *5*

(b) Differentiate among short-term, medium-term and long-term scheduling. *5*

4. (a) What is a semaphore ? What are the types of semaphores ? Discuss the busy-wait implementation of a semaphore. *6*

(b) Discuss monitors as a tool for interprocess synchronization. *4*

5. What is a deadlock ? What are the strategies of dealing with deadlock problems ? Write and explain an algorithm for deadlock prevention. *10*

6. Explain contiguous allocation and non-contiguous allocation with respect to the following measures : *10*

(a) Wasted Memory

(b) Time Complexity

(c) Memory Access Overhead

7. (a) Explain the term Virtual Memory. How is swapping used in the implementation of Virtual Memory ? *5*

(b) Explain demand paging with the help of an example. *5*

8. What is a directory ? What operations can be performed on a directory or file system ? Also discuss the common schemes for describing a logical directory structure. *10*

9. Describe the importance of protection and security in file management. *10*

10. Write short notes on any ***two*** of the following : *2×5=10*

(a) Microsoft Windows NT

(b) Segmentation

(c) Authentication and Authorization