

**B. TECH.****THEORY EXAMINATION (SEM-IV) 2016-17****OPERATING SYSTEM****Time : 3 Hours****Max. Marks : 100****Note : Be precise in your answer. In case of numerical problem assume data wherever not provided.****SECTION – A****1. Attempt all of the following questions:****10 x 2 = 20**

- (a) Difference between Process and Program.
- (b) Explain Context Switching.
- (c) What is Demand paging?
- (d) Explain Concept of Virtual Memory.
- (e) Difference between Directory and File.
- (f) Define multiprogramming system.
- (g) Difference between External and Internal Fragmentation.
- (h) What is Critical Section?
- (i) Explain threads.
- (j) Define operating system explain in short.

**SECTION – B****2. Attempt any five of the following questions:****5 x 10 = 50**

- (a) Write down the different types of operating system
- (b) What is Kernel? Describe various operations performed by Kernel.
- (c) What is the cause of Thrashing? What steps are taken by the system to eliminate this problem?
- (d) What do you understand by Process? Explain various states of process with suitable diagram. Explain process control block.
- (e) Give the principles, mutual exclusion in critical section problem. Also discuss how well these principles are followed in Dekker's solution.
- (f) State the Producer-consumer problem. Given a solution to the solution using semaphores.
- (g) Explain File organization and Access mechanism.
- (h) Explain the services provided by operating system.

**SECTION – C****Attempt any two of the following questions:****2 x 15 = 30**

- 3 (i) What is a deadlock? Discuss the necessary conditions for deadlock with examples
- (ii) Describe Banker's algorithm for safe allocation.
- 4 What do you mean by caching, spooling and error handling, explain in detail. Explain FCFS, SCAN & CSCAN scheduling with eg.