Code No: **R42045**   **R10**   **Set No. 1**

IV B.Tech II Semester Regular Examinations, April/May - 2014
OPERATING SYSTEMS
(Electronics and Communication Engineering)

Time : 3 hours   **Max. Marks: 75**

Answer any Five Questions
All Questions carry equal marks
*****

1. Justify the following statements.
    a)   OS can be viewed as a Resource Allocator.
    b)   OS is a Control Program.

2. Draw and explain the general structure of Operating System control tables.

3. a) What is a semaphore? What are the various operations defined on it?
   b) What is the difference between weak semaphore and strong semaphore? Explain.

4. Explain the solution to Dining Philosophers Problem using Semaphores.

5. a) Briefly explain the Memory Management Requirements
   b) Explain the use of a Translation Look aside Buffer with neat diagram.

6. a) What is I/O Buffering and draw the I/O Buffering Schemes.
   b) Briefly explain Operating System design issues.

7. Explain the methods of Record Blocking mechanism with neat diagrams of each.

8. a) Explain in detail about the security threats
   b) How Firewalls are used for protection

Code No: **R42045**   **R10**   Set No. 2

IV B.Tech II Semester Regular Examinations, April/May - 2014
OPERATING SYSTEMS
(Electronics and Communication Engineering)

Time : 3 hours   Max. Marks: 75

Answer any Five Questions
All Questions carry equal marks
*****

1. Draw and explain program flow of control without and with interrupts.

2. a) Explain how multiprogramming helps improve CPU utilization.
   b) Differentiate -process and program.
   c) Draw the diagram for process control block

3. What the design characteristics of Message Systems are of inter process communication and synchronization?

4. a) What are the different methods for managing deadlocks?
   b) Explain how deadlocks are prevented.

5. a) Explain the partitioning-based memory management schemes.
   b) Discuss alternatives for page table implementation.

6. a) Explain about the key scheduling criteria.
   b) Give a detail note on short-term scheduling.

7. Explain various techniques implemented for free space management, discuss with suitable examples.

8. a) Explain the various password selection strategies.
   b) Discuss about UNIX password scheme.

Code No: **R42045**   **R10**   Set No. 3

IV B.Tech II Semester Regular Examinations, April/May - 2014
OPERATING SYSTEMS
(Electronics and Communication Engineering)

Time : 3 hours   Max. Marks: 75

Answer any Five Questions
All Questions carry equal marks
*****

1. What are the various objectives and functions of Operating Systems?

2. Explain the following transitions:
   a) Blocked → Blocked/Suspended.
   b) Blocked/Suspended → Ready/Suspended.
   c) Ready/Suspended → Ready.

3. How can Semaphores be used to achieve mutual exclusion? Explain with an example.

4. Explain the solution to Dining Philosophers Problem using Monitors.

5. Explain the terms in Memory Partitioning with examples
   a) Fixed Partitioning
   b) Dynamic partitioning

6. Explain windows 2000 I/O Manager. Discuss Basic I/O Modules, Asynchronous and synchronous I/O.

7. a) Explain the file operations.
   b) Discuss the usage information elements of a file Directory.

8. a) List fields of Audit records. Explain each.
   b) Write notes on Confidentiality, Authentication.

Code No: **R42045**   **R10**   **Set No. 4**

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Time : 3 hours   Max. Marks: 75

Answer any Five Questions
All Questions carry equal marks
*****

1. Explain the following
   a) Interrupt Processing with a neat diagram
   b) Multiple Interrupts with a neat diagram

2. Explain about single threaded and multi threaded process models with suitable diagrams.

3. What the design characteristics of Message Systems are of inter process communication and synchronization?

4. Explain the following
   a) Deadlock Prevention
   b) Deadlock Detection with an example.

5. a) Explain Paging hardware with translation look-aside buffer.
   b) How memory protection can be accomplished in a paged environment? Explain.

6. a) Explain various levels of scheduling.
   b) Discuss queuing diagram for scheduling.

7. Make comparison of all the file organization techniques, discuss relative performance aspects of these organization.

8. a) Explain the protection spectrum offered by operating system.
   b) Make a comparison of Passive threats with active threats.