Code No: 07A40502 | **R07** | **Set No. 2**

II B.Tech II Semester Examinations,December 2010
OPERATING SYSTEMS
Information Technology

Time: 3 hours | Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks
⋆ ⋆ ⋆ ⋆ ⋆

1. Write short notes on:

    (a) Host-attached storage

    (b) Swap-space use

    (c) Problems with RAID. [6+6+5]

2. Write briefly about

    (a) external fragmentation:

    (b) Internal fragmentation

    (c) 50-percent rule

    (d) Compaction. [4+4+4+4]

3. (a) Give a brief account of enforcing protection in java?

    (b) Write a note on the following:

        i. Symmetric encryption

        ii. Key distribution. [8+8]

4. Explain MS-DOS and UNIX system structures. [16]

5. What is serializability. How concurrency control algorithms ensure serializability. [16]

6. (a) Discuss the merits and demerits of supporting links to files that cross mount points

    (b) Draw the schematic view of a virtual file system and explain. [8+8]

7. (a) "I/O is a major factor in system performance" Explain.

    (b) Explain the Unix System V mechanism that enables an application to assemble pipelines of driver code dynamically. [8+8]

8. (a) What are the reasons for the parent to terminate the child process?

    (b) What is cascading termination?

    (c) What are the reasons for interprocess communication? [5+5+6]

⋆ ⋆ ⋆ ⋆

1

Code No: 07A40502   **R07**   **Set No. 4**

II B.Tech II Semester Examinations,December 2010
OPERATING SYSTEMS
Information Technology

Time: 3 hours   Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks
⋆ ⋆ ⋆ ⋆ ⋆

1. What is deadlock? What are the necessary conditions for the deadlock to occur? Explain various deadlock prevention techniques? [16]

2. (a) What is an Operating system?
   (b) What is the difference between user view and system view of an Operating system? [8+8]

3. Explain the locking protocol for serializability. [16]

4. (a) Compare and contrast contiguous allocation and linked allocation techniques.
   (b) What are the advantages and disadvantages of recording the name of the creating program with the file's attributes? [8+8]

5. (a) What are the drawbacks of implementing an access matrix using global table? Suggest methods to overcome those drawbacks.
   (b) Explain how worm propagates from one system to another over a network.
   [8+8]

6. Explain the memory management technique that separates user view of memory and the actual physical memory. [16]

7. Explain POSIX shared memory and windowsXp IPC systems. [16]

8. (a) Explain RAIDs achieving high reliability and data-transfer rate.
   (b) Explain the following terms with respect to a magnetic disk.
      i. Transfer rate
      ii. Random access time
      iii. Head crash. [10+6]

⋆ ⋆ ⋆ ⋆ ⋆

2

Code No: 07A40502 $\qquad$ **R07** $\qquad$ **Set No. 1**

II B.Tech II Semester Examinations,December 2010
OPERATING SYSTEMS
Information Technology

Time: 3 hours $\hfill$ Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks
$\star\star\star\star\star$

1. (a) Discuss the goals of system protection.
   (b) Give a detailed note on the system and network threats. [6+10]

2. (a) Give a brief note on the disk structure.
   (b) Explain about host-attached storage. What are its limitations? [8+8]

3. Explain in detail about segmentation. [16]

4. (a) Give the schematic view of a monitor with condition variables.
   (b) Give the definition of wait() and signal() operations of monitor. [8+8]

5. (a) Consider the following snapshot of a system

	Allocation	Max	Available
	A B C	A B C	A B C
P_0	0 1 0	7 5 3	3 3 2
P_1	2 0 0	3 2 2	
P_2	3 0 2	9 0 2	
P_3	2 1 1	2 2 2	
P_4	0 0 2	4 3 3	

   Answer the following questions using the Bankers algorithm:
      i. What is the content of the matrix need?
      ii. Is the system in a Safe State?
      iii. If a request from process P_1 arrives for (1,0,2), can the request be granted immediately ?
   (b) What principles can be employed to improve the efficiency of I/O? [10+6]

6. Explain about system calls. [16]

7. (a) Give a detailed description of acyclic graph directories. What are the problems with such a structure?
   (b) What are the implications of supporting UNIX consistency semantics for shared access for those files that are stored on remote file systems? [8+8]

8. (a) What is the format of send and receive primitives in direct and indirect communication.
   (b) What is symmetry and asymmetry of addressing?
   (c) What is the significance of mailbox in indirect communication? [5+5+6]

$\star\star\star\star$

Code No: 07A40502 | **R07** | **Set No. 3**

II B.Tech II Semester Examinations,December 2010
OPERATING SYSTEMS
Information Technology

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks
⋆ ⋆ ⋆ ⋆ ⋆

1. What is atomic transaction. How atomic transactions are executed. [16]

2. (a) How multiprocessor systems results in increase in reliability.

   (b) What is fault tolerant system?

   (c) What is the difference between symmetric and asymmetric multiprocessing.
   [5+5+6]

3. (a) Write the algorithm for finding out whether a system is in a safe state or not?

   (b) Draw the life cycle of an I/O request and explain it in detail. [6+10]

4. (a) Discuss in detail about the domain structure.

   (b) What is the difference between a threat and an attack? Explain about the various security attacks. [8+8]

5. (a) Give an example of an application that could benefit from OS support for random access to indexed files.

   (b) Discuss about Windows XP file system in detail. [8+8]

6. (a)) Explain the following terms with respect to a magnetic disk.
      i. Transfer rate
      ii. Random access time
      iii. Head crash

   (b) Give brief note on disk storage access techniques by computers. [6+10]

7. (a) What are shared pages. What is the necessity of sharing pages.

   (b) How pages are shared.

   (c) What are inverted page tables. [5+5+6]

8. What are the operations that can be performed on a process? [16]

⋆ ⋆ ⋆ ⋆ ⋆