Code No: T1221 **R07** SET - 1

II B. Tech II Semester, Supplementary Examinations, Nov/Dec – 2012
OPERATING SYSTEMS
(Information Technology)

Time: 3 hours Max. Marks: 80

Answer any **FIVE** Questions
All Questions carry **Equal** Marks
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1. a) What are the different components of Computer System? Explain.
   b) Define Operating System. What are the various types of the Operating Systems?

2. a) Draw the relevant diagram for CPU switch from process to process.
   b) Draw and Explain task control block.

3. a) What is a Semaphore? Explain.
   b) Explain Dining –Philosophers Problem
   c) What is a Monitor? Write the Syntax of the Monitor

4. a) What is Segmentation? Explain Segmentation by considering a example.
   b) What is the need for page replacement? Explain basic page replacement by a relevant diagram.

5. a) What is a Deadlock? What are the methods for handling deadlocks? Explain.
   b) Explain the Banker's algorithm by the safety algorithm.

6. a) What is File-System Mounting? Explain.
   b) Explain File sharing mechanism for Remote File Systems and Client- Server Model.

7. a) Explain about storage area networks (SANs)
   b) What are problems with the RAID? Explain

8. a) What are the various goals of protection?
   b) Write about the principles of protection.
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Code No: T1221 **R07** SET - 2

II B. Tech II Semester, Supplementary Examinations, Nov/Dec – 2012
OPERATING SYSTEMS
(Information Technology)

Time: 3 hours Max. Marks: 80

Answer any **FIVE** Questions
All Questions carry **Equal** Marks
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1. a) Define System call. Draw and Explain the relevant diagram for handling of a user application involving the open ( ) system call
   b) What are the various Special purpose Operating Systems? Explain them in Detail.

2. a) What are the different characteristics are considered for comparing the CPU scheduled Algorithms?
   b) Explain various types of CPU Scheduling Algorithms.

3. a) What is Critical section Problem? What are the requirements to satisfy critical section Problem?
   b) Explain the Peterson's Solution for Critical section problem.

4. a) What is swapping? Draw the appropriate diagram for swapping.
   b) What is dynamic storage allocation problem? What are the solutions for it?
   c) What is Paging? Draw and explain Paging model by logical and physical memory.

5. a) What is a deadlock? How a deadlock is prevented and how it is avoided? Explain
   b) Explain the Banker's algorithm by the Resource-Request algorithm

6. a) What is free space list? Explain.
   b) Explain various file Allocation Techniques.

7. a) Explain how the moving-head disk is working with suitable diagram.
   b) What is disk scheduling? Explain any three disk scheduling algorithms

8. a) Explain Access matrix with owner rights with suitable figure
   b) How the Access Matrix is implemented? Explain
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Code No: T1221 **R07** SET - 3

II B. Tech II Semester, Supplementary Examinations, Nov/Dec – 2012
OPERATING SYSTEMS
(Information Technology)

Time: 3 hours Max. Marks: 80

Answer any **FIVE** Questions
All Questions carry **Equal** Marks
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1. a) Explain about Evaluation of Operating Systems.
   b) Define System call. Explain various types of System calls.

2. a) Draw and explain Process state diagram.
   b) Draw and explain Process control block.

3. a) Define Semaphore.
   b) Explain the Bounded Buffer problem
   c) Explain Readers and Writers Problem

4. a) What is belady's anomaly? Explain it by considering the following reference string 1,2,3,4,1,2,5,1,2,3,4,5
   b) Discuss the hardware support required to support demand paging.

5. a) What is a Deadlock? What are the techniques for handling deadlocks? Explain
   b) What is STREAMS? Draw and Explain STREAMS structure?

6. a) What is a file? Explain various file attributes and file operations.
   b) Explain various Directory structures.

7. a) What are various Disk organization Techniques? Explain in detail.
   b) Explain about Stable-storage Implementation

8. a) Explain various program Threats.
   b) Explain cryptography as a security tool in detail.
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Code No: T1221 **R07** SET - 4

II B. Tech II Semester, Supplementary Examinations, Nov/Dec – 2012
OPERATING SYSTEMS
(Information Technology)

Time: 3 hours Max. Marks: 80

Answer any **FIVE** Questions
All Questions carry **Equal** Marks
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1. a) What are the four components of Computer System? Explain.
   b) Define Operating System. What are the various services offered by the Operating System.

2. a) What is a Scheduler? What are the various types of Schedulers? Explain
   b) What are the various types of Operations on Processes? Explain.

3. a) What is Critical section Problem? What are the necessary conditions to satisfy critical Section Problem?
   b) What is Race condition? How the Race conditions are prevented by the Synchronization hardware? Explain.

4. a) How many page faults will occur for the following page replacement algorithm FIFO and LRU with 3and 4 page frames given reference string is 1, 2, 3, 4, 5, 3, 4, 1, 6, 7, 8, 7, 8, 9, 7, 8, 9, 5, 4, 5, 4, 2
   b) Explain how the page fault will be handling using a suitable diagram

5. a) What is a Deadlock? Explain the system model with an example.
   b) What are the necessary conditions to hold a deadlock situation?
   c) Draw and explain Resource-allocation graph.

6. a) Draw and Explain file-control block.
   b) Explain various file Allocation methods

7. a) Explain various RAID levels with suitable diagrams
   b) Explain about Tertiary- Storage Structure

8. a) What is Access matrix? Explain.
   b) Explain Access matrix with copy rights with suitable figure
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