Code: 9A05505

R9

B.Tech III Year I Semester (R09) Supplementary Examinations, May 2013

OPERATING SYSTEMS

(Common to IT, ECC and CSE)

Time: 3 hours Max Marks: 70

Answer any FIVE questions

All questions carry equal marks

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1 Write notes on the following:
   (a) Multitasking.
   (b) Real-time embedded systems.
   (c) System calls.

2 (a) What is a thread? Illustrate the difference between a traditional single-threaded process and a multithreaded process.
   (b) Explain the following scheduling algorithms with examples:
   (i) Shortest-remaining-time-first. (ii) Round robin.

3 (a) Give the definition of swap( ) instruction. Explain the implementation of mutual exclusion using swap( ).
   (b) Explain the different types of storage media.

4 (a) What is compaction? What are its advantages and disadvantages?
   (b) Explain enhanced second-chance page replacement algorithm with an example. What is the major difference between this algorithm and the simpler clock algorithm?

5 (a) Define deadlock prevention and deadlock avoidance.
   (b) Explain in detail the deadlock recovery techniques.

6 (a) What are the approaches for sharing of files? Give their relative merits and demerits.
   (b) How dangling pointer problem occurs when deleting a file? What is the solution for it?
   (c) How garbage collection is used in the context of file system?

7 (a) Draw the diagram to depict the device functionality progression and explain.
   (b) Why is it difficult to map a logical block number onto the sectors of the disk?

8 (a) What is key distribution? What are the problems with key distribution?
   (b) How passwords can be used for authentication? What are the merits and demerits of passwords?

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