

Code: 9A05505

B.Tech III Year I Semester (R09) Regular & Supplementary Examinations December 2014

OPERATING SYSTEMS
(Common to IT, ECC and CSE)

Time: 3 hours

Max Marks: 70

Answer any FIVE questions
All questions carry equal marks

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

- 2 (a) Describe the differences among short-term, medium-term and long-term scheduling.
(b) Explain scheduling in windows.

- 3 (a) Implement counting semaphores with binary semaphores.
(b) Servers can be designed to limit the number of open connections. For example, a server may wish to have only N socket connections at any point in time. As soon as N connections are made, the server will not accept another incoming connection until an existing connection is released. Explain how semaphores can be used by a server to limit the number of concurrent connections.

- 4 (a) What is meant by memory protection? Explain how memory is protected by using base register and limit register.
(b) Discuss the hardware support required to support demand paging.

- 5 (a) What is a deadlock? Explain with an example. What are the necessary conditions for deadlock to occur?
(b) Give a possible algorithm for deadlock detection.

- 6 (a) What is search path, absolute path and relative path?
(b) What is directory structure which is suitable for sharing of files? Justify your answer. Illustrate with an example.

- 7 (a) When multiple interrupts from different devices appear at the same time, a priority scheme could be used to determine the order in which the interrupts would be serviced. Discuss what issues need to be considered in assigning priorities to different interrupts.
(b) (What are the goals of achieving parallelism in a disk system through striping?

- 8 Define virus. What are the categories of viruses? Explain them.
