

Code: CSCS1T5

I M.Tech-I Semester-Regular Examinations-February 2016

**OPERATING SYSTEMS
(COMPUTER SCIENCE & ENGINEERING)**

Duration: 3 hours

Max. Marks: 70

Answer any FIVE questions. All questions carry equal marks

- 1 a) List 5 services provided by an operating system and explain them. 7 M

- b) Define the essential properties of the following types of operating systems: 7 M
 - i) Batch
 - ii) Interactive
 - iii) Time sharing
 - iv) Real time

- 2 a) Define the terms Thread and Process. What resources are used when a thread is created? How do they differ from those used when a process is created? 7 M

- b) Explain about the life cycle of a Thread. 7 M

- 3 a) Explain Producer Consumer problem using Semaphores. 7 M

- b) Explain the differences between Monitors and Semaphores. 7 M

- 4 a) Define Deadlock prevention and Deadlock avoidance.
Explain 4 criteria for Deadlock prevention. 7 M
- b) State the necessary condition for deadlock occurrence. 7 M
- 5 a) Describe the following allocation algorithms: 7 M
i) First fit ii) Best fit iii) Worst fit
- b) What is Paging? Explain the basic method used for Paging. 7 M
- 6 a) Describe the differences between short term, medium term and long term schedulers. 7 M
- b) Explain the differences in the degree to which the following scheduling algorithms discriminate in favor of short processes: 7 M
i) FCFS ii) RR iii) Multilevel feedback queues
- 7 What are the different disk scheduling methods? Explain the merits and demerits of each. 14 M
- 8 a) What are the goals of protection? Explain the access matrix Mechanism for achieving protection. 7 M

b) Discuss ways by which managers of systems connected to the Internet could have limited or eliminated the damage done by the worm. What are the drawbacks of making such changes to the way in which the system operates? 7 M