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Roll No

MTCF-101

M.E./M.Tech. I Semester

Examination, June 2017

Operating Systems and Security

Time : Three Hours

Maximum Marks : 70

- Note: i) Attempt any five questions.
 ii) All questions carry equal marks.

1. a) Why operating system is needed? Justify "Operating System is the control program of the system."
 b) Differentiate between (with one suitable example)
 - i) Interactive and batch processing system.
 - ii) Multiprogramming and time sharing system.
2. a) Draw and explain Process Control Block (PCB) with all its components. Also brief why context switching is an overhead in the system.
 b) What are semaphores? What is the usage of semaphores?
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3. a) What are deadlocks? Explain the different methods for dealing with the deadlocks.
 b) Explain the need of process synchronization . How can the interprocess communication be achieved?

4. a) What is Security? How is it different from protection? Explain some goals of computer security.
 b) Explain protection matrix and its purpose.
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5. a) Explain how a security attack can lead to denial of services.
 b) What is system vulnerability? Mention couple system vulnerabilities.
6. a) What kind of authentication unix system use? Explain the authentication procedure.
 b) What are the four main components of a secure system?
7. a) Define trusted operating system. List the difference between trust vs security model.
 b) What are security features of trusted operating system?
8. a) Discuss the paging system for memory management in details. Also give it advantage and disadvantage.
 b) Discuss thrashing with example.

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