Roll No .....

EI-502

B.E. V Semester

Examination, December 2015

Operating Systems

Time : Three Hours

Maximum Marks : 70

Note: i) Answer five questions. In each question part A, B, C is compulsory and D part has internal choice.

ii) All parts of each questions are to be attempted at one place.

iii) All questions carry equal marks, out of which part A and B (Max.50 words) carry 2 marks, part C (Max.100 words) carry 3 marks, part D (Max.400 words) carry 7 marks.

iv) Except numericals, Derivation, Design and Drawing etc.

Unit-I

1. a) What is I/O Buffering?
   b) What is the purpose of system calls?
   c) Why must a computer start in kernel mode when power is first turned on?
   d) Discuss multi-programming versus single user operating systems in terms of throughput and CPU utilization.

OR

What is operating system? Explain the various function of operating system?

Unit-II

2. a) Write the use of Process Control Block and discuss its contents.
   b) What is long term and short term scheduler?
   c) What is deadlock problem? Write the four conditions for deadlock to occur.

   d) Write a brief notes on recovery from deadlock.

OR

Explain in details how semaphores and semaphore operations can be implemented in the nucleus of an operating system.

Unit-III

3. a) Define memory.
   b) What is paging?
   c) Differentiate between external and internal fragmentation.
   d) What advantages does segmentation offer over multiple variable partitions?

OR

Explain the concept of dirty bit for improving the performance during page fault.

Unit-IV

4. a) What is virtual memory?
   b) What is demand paging?
   c) Write the necessary steps taken by the operating system when a page fault occurs.
   d) Write a brief notes on security thread and protection.

OR

What is thrashing? Why does it happen? Why is it bad for processes and the system? How can we limit it?

Unit-V

5. a) What is file?
   b) Define the term Disk Reliability.
   c) Write a brief notes on file protection.
   d) Explain various methods of accessing files with example.

OR

What is Distributed System? In what respect are distributed computing systems superior to parallel systems?

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