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Question Paper Code : 51382

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2016

Fourth Semester

Computer Science and Engineering

CS 2254/CS 45/CS 1253/080250012/10144 CS 405 – OPERATING SYSTEMS

(Common to Information Technology)

(Regulations 2008/2010)

(Common to PTCS 2254/10144 CS 405 – Operating Systems for B.E. (Part-Time)

Fourth Semester – CSE – Regulations 2009/2010)

Time : Three Hours

Maximum : 100 Marks

Answer ALL questions.

PART – A (10 × 2 = 20 Marks)

1. What are the categories of system programs ?
2. What is the objective of multiprogramming ?
3. Define preemptive scheduling.
4. What are semaphores ?
5. What are the major components page fault service time ?
6. What are the various page replacement algorithms used for page replacement ?
7. What are the operations that can be performed on a directory ?
8. What is log-based transaction-oriented file system ?
9. What is the use of interrupt priority levels ?
10. What is bit-level striping and block level striping ?

PART – B (5 × 16 = 80 Marks)

11. (a) (i) Explain the various multithreading models in detail. (8)
(ii) Define cooperating process. Explain with a suitable example. (8)

OR

- (b) (i) Explain in detail about Process scheduling. (8)
(ii) Describe in detail the advantages of virtual machine architecture. (8)

12. (a) Explain in detail about classic problems of synchronization. (16)

OR

- (b) Explain in detail about Multiple-Process solution in critical section.

13. (a) Explain about Contiguous Memory Allocation in detail. (16)

OR

- (b) (i) Explain in detail about performance of demand paging. (8)
(ii) Explain in detail about segmentation with paging. (8)

14. (a) Write short notes on

- (i) File - System Mounting (8)
(ii) Free - Space Management (8)

OR

- (b) Explain in detail about Efficiency and Performance in block-allocation and directory-management.

15. (a) (i) Explain the various disk scheduling algorithms. (8)
(ii) Compare the various disk scheduling algorithms. (8)

OR

- (b) (i) Explain in detail about swap space management. (8)
(ii) Explain in detail about tertiary storage devices. (8)