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Question Paper Code : 31328

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2013.

Sixth Semester

Electronics and Communication Engineering

EC 2022/EC 602 — OPERATING SYSTEMS

(Regulation 2008)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Define multiuser operating system.
2. What are the needs for operating system?
3. Define process.
4. What is meant by thread?
5. What are the advantages of paging?
6. What is meant by garbage collection?
7. What are the different file access methods?
8. What is a Kernel I/O subsystem?
9. What is meant by distributed operating system?
10. What is the different between UNIX and LINUX?

PART B — (5 × 16 = 80 marks)

11. (a) (i) Define an operating system. Discuss its role from different perspectives in detail. (8)

(ii) What are the various operating system services? Explain them in detail. (8)

Or

(b) (i) Write and explain the sequence of system calls for copying a file to another file. (8)

(ii) Write short notes on the structure of operating systems. (8)

12. (a) (i) Define race condition. List the requirements that a solution to critical section problem must satisfy. (8)

(ii) What are semaphores? Explain two primitive semaphore operations. What are the advantages of semaphore? (8)

Or

(b) (i) Draw and explain in detail the process state diagram. (8)

(ii) Describe the implementation of IPC using shared memory and message passing. (8)

13. (a) (i) Differentiate between internal and external fragmentation. Explain how they are solved with a suitable example. (6)

(ii) Consider the following page reference stream :

1, 2, 3, 4, 5, 1, 2, 6, 1, 3, 5, 7, 6, 3, 2, 1, 6, 2, 3

How many page faults would occur for LRU, FIFO and optimal replacement algorithms for the cases of 3 and 4 frames separately? Which one of these is most efficient? (10)

Or

(b) (i) Discuss how memory is allocated in variable partition system. (8)

(ii) Discuss in detail about the free space management with an example. (8)

14. (a) (i) What is a file? Discuss the different access methods on files. Explain file mounting process in detail. (8)

(ii) Draw a neat diagram and explain linked file allocation. (8)

Or

(b) (i) Discuss in detail the various disk scheduling methods with suitable example. (8)

(ii) Write short notes on RAID structure. (8)

15. (a) (i) Explain the importance features of distributed operating system. (6)

(ii) Write a detailed note on windows 2000 operating system. (10)

Or

(b) (i) Explain Real time operating system. What are the advantages of it? (6)

(ii) Write a detailed note on UNIX operating system. (10)
