Reg. No. : | | | | | | | | | | |

Question Paper Code: 41235

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2017

Third Semester

Computer Science and Engineering

14UCS305 - OPERATING SYSTEMS

(Regulation 2014)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. To avoid the race condition, the number of processes that may be simultaneously inside their critical section is.
   (a) 8 (b) 1 (c) 16 (d) 0

2. Fork is
   (a) Dispatching of a task (b) Creation of a new job
   (c) Creation of a new process (d) None of these

3. Banker's algorithm for resource allocation deals with
   (a) Deadlock prevention (b) Deadlock avoidance
   (c) Mutual exclusion (d) Deadlock recovery

4. In an absolute loading scheme, which loader function is accomplished by assembler
   (a) Reallocation (b) Allocation
   (c) Linking (d) Loading

5. Which of the following is not true about the memory management?
   (a) Virtual memory is used only in multi-user systems
   (b) Segmentation suffers from external fragmentation
   (c) Paging suffers from internal fragmentation
   (d) Segmented memory can be paged

6. ‘LRU’ page replacement policy is

(a) Last Replaced Unit. (b) Last Restored Unit
(c) Least Recently Used (d) Least Required Unit

7. What scheduling algorithm allows processes that are logical runnable to be temporarily suspended?

(a) preemptive scheduling (b) non-preemptive scheduling
(c) FIFO (d) FCFS

8. The disadvantage of the two level directory structure is that

(a) it does not solve the name collision problem
(b) it solves the name collision problem
(c) it does not isolate users from one another
(d) it isolates users from one another

9. Interprocess communication

(a) is required for all processes
(b) is usually done via disk drives
(c) is never necessary
(d) allows processes to synchronize activity

10. The computational technique used to compute the disk storage address of individual records is called

(a) hashing (b) bubble memory
(c) dynamic reallocation (d) key fielding

PART - B (5 x 2 = 10 Marks)

11. What are the features of Operating system.

12. Demonstrate when a system is said to be in safe state?

13. Differentiate between page and segment?

14. Illustrate the techniques used to protect the user files.

15. List the various key features of VM ware server virtualization.

PART - C (5 x 16 = 80 Marks)

16. (a) Describe the various types of system calls with an example of each. (16)

Or

(b) Enumerate different operating system structures and explain with a neat sketch. (16)

17. (a) Explain the FCFS, Preemptive and Non-Preemptive versions of Shortest Job First and Round Robin (time-slice2) scheduling algorithms with Grantt Chart for the four processes given. Compare their average turn around and wait time. (16)

Process	Arrival Time	Burst time
P1	0	10
P2	1	6
P3	2	12
P4	3	15

Or

(b) Enumerate different operating system structures and explain with a neat sketch. (16)

18. (a) Illustrate contiguous memory allocation schemes, give examples. (16)

Or

(b) Develop page faults and success .Given that main memory composed of three page frames for public use and that a program request pages in the follow order A, B, A, C, D, A, B, D, B, A, C, A,C, D Use FIFO and LRU page removal algorithms do a page trace analysis. (16)

19. (a) Classify the different file allocation methods with neat diagram. Mention the advantages and disadvantages. (16)

Or

(b) Write a detailed note on various file access methods with neat sketch. (16)

20. (a) Examine in detail about file system in LINUX. (16)

Or

(b) Describe how file system is implemented in Windows. (16)
