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**Question Paper Code: 41844**

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

Fourth Semester

Information Technology

14UIT404 - PRINCIPLES OF OPERATING SYSTEMS

(Regulation 2014)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

- Batch systems are quite appropriate for executing
  - Medium jobs
  - Small jobs
  - Larger jobs
  - None of the above
- Which of the following is/are the part of operating system?
  - Kernel services
  - Library services
  - Application level services
  - All the above
- Turnaround time is the interval from the time of \_\_\_\_\_ to the time of \_\_\_\_\_ of a process.
  - submission, completion
  - creation, submission
  - deadlock, completion
  - completion, creation
- The necessary conditions needed before deadlock can occur
  - No Mutual Exclusion, Hold and wait, Preemption, Circular Wait
  - Mutual Exclusion, No Hold and wait, Preemption, Circular Wait
  - Mutual Exclusion, Hold and wait, No Preemption, Circular Wait
  - Mutual Exclusion, Hold and wait, Preemption, No Circular Wait
- Belady's anomaly states that
  - Page faults may reduce and later increase
  - Page faults are exponential in nature

- (c) Page faults reduces and increases drastically
- (d) Page faults may increase as the number of allocated frames increases

6. Page fault occurs when

- (a) the Deadlock happens
- (b) the Segmentation Starts
- (c) the page is found in the memory
- (d) the page is not found in the memory

7. What is the mounting of file system?

- (a) crating of a file system
- (b) deleting a file system
- (c) attaching portion of the file system into a directory structure
- (d) removing portion of the file system into a directory structure

8. By using the specific system call, we can

- (a) open the file
- (b) read the file
- (c) write into the file
- (d) all of the mentioned

9. If one or more devices use a common set of wires to communicate with the computer system, the connection is called

- (a) CPU
- (b) Monitor
- (c) wirefull
- (d) bus

10. Modern disks do not disclose the physical location of \_\_\_\_\_ blocks.

- (a) Physical
- (b) Logical
- (c) Static
- (d) Dynamic

PART - B (5 x 2 = 10 Marks)

11. Define operating systems.

12. List four necessary conditions for deadlock.

13. Define swapping.

14. Mention any four file attributes.

15. List the responsibilities of a Linux system administrator.

PART - C (5 x 16 = 80 Marks)

16. (a) With suitable supporting diagrams, explain how communication is done in client server systems. (16)

Or

(b) Discuss thread issues in detail. (16)

17. (a) Explain a safe state and an unsafe state. (16)
- Or
- (b) Write any two classic problems of synchronization. (16)
18. (a) Illustrate paging hardware in detail. (16)
- Or
- (b) Compare and contrast first fit, best fit and worst-fit dynamic storage allocation strategies. (16)
19. (a) Discuss various techniques used to improve the efficiency and performance of secondary storage. (16)
- Or
- (b) (i) Write short notes on swap space. (8)
- (ii) Design a controller with a bus, port and a device. (8)
20. (a) Design an I/O interface for a mobile application (16)
- Or
- (b) Explain in detail about the following disk scheduling algorithms. FCFS, SSTF, SCAN, C-LOOK. (16)
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