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B.E. / B. Tech. Degree Examinations

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

CONTINUOUS ASSESSMENT TEST-II

Subject	**:**	Operating Systems	**Duration**	**:**	1.30 Hrs
Subject Code	**:**	CS8493	**Date**	**:**	26/04/2021
Year/Sem	**:**	II/ IV	**Max.Marks:**		50

PART A — (5 × 2 = 10 Marks)

(Answer ALL questions.)

1. What do you mean by page fault? **(K)[CO4]**
2. What is the need for disk scheduling? Give the various disk scheduling methods **(R)[CO5]**
3. Consider a logical address space of eight pages of 1024 words each, mapped on to a physical memory of 32 frames. Find the number of bits in the logical address and the physical address. **(A)[CO4]**
4. Why is virtualization required? **(A)[CO6]**
5. Mention the various components of a Linux System. **(R)[CO6]**

PART-B (2*13=26 Marks)

(Answer all Questions)

1. i) Explain the different file allocation methods with neat diagram. Mention the advantages and disadvantages. **(13)(R)[CO5]**

(OR)

2. Implement page reference string 1 2 3 4 2 1 5 6 2 1 2 3 7 6 3 2 1 2 3 6.

How many page faults occur for LRU, FIFO, Optimal page replacement algorithms, when the frame size is 3 & 4? **(13)(A)[CO4]**

3. i) What is virtualization? Explain its concepts in detail. **(7)(R)[CO6]**

ii) Write about Linux architecture and LINUX kernel with neat sketches**.** **(6)[K] [CO6]**

(OR)

4. i) Given memory partitions of 500KB, 100KB, 300KB, 200KB, and 600KB in order. How would each of the first fit, best fit and worst fit algorithms place processes of 418KB , 202KB, 506KB, 112KB, 95KB.Which algorithm makes the efficient use of memory. **(7)(R)[CO4]**

ii) Analyzing the common schemes available for defining the logical structure of a directory. **(6)(C) [CO4]**

PART-C (1*14=14 Marks)

1. With a neat sketch, explain how a logical address is translated into a physical address using the Paging mechanism. Explain in detail about the structure of the page table. **(14) (R)[CO4]**

(OR)

2. Explain about the RAID structure in disk management with various RAID levels of organization in detail. **(14)(A)[CO5]**

******* ALL THE BEST *******

COURSE OUTCOMES (CO)

At the end of the course the students will be able to

CS8493–Operating Systems

Course Code	Course Outcomes
CO1	Understand the basic concepts and functions of operating systems.
CO2	Analyze various scheduling algorithms.
CO3	Understand threads, process synchronization and deadlock- prevention and avoidance algorithms.
CO4	Compare and understand various memory management schemes.
CO5	Understand the functionality of file and I/O systems
CO6	Learn the basics of Linux system and Mobile OS like iOS and Android.