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10EC65

Sixth Semester B.E. Degree Examination, Jan./Feb. 2021
Operating Systems

Time: 3 hrs.

Max. Marks:100

Note: Answer any FIVE full questions, selecting at least TWO full questions from each part.

PART - A

- 1 a. Explain the goals of an operating systems. (04 Marks)
- b. Write short notes on:
 - i) Resource allocation and related functions
 - ii) User interface related functions. (08 Marks)
- c. Explain time shared operating system with respect to
 - i) Scheduling
 - ii) Memory management. (08 Marks)
- 2 a. What are the functions of an operating system? Explain. (04 Marks)
- b. Compare Kernel based and micro Kernel based operating system. (08 Marks)
- c. Explain Virtual Machine operating system. What are the advantages of using virtual machines? (08 Marks)
- 3 a. Write short notes on:
 - i) Programmer view of processes
 - ii) OS view of a processes (12 Marks)
- b. Write short notes on: i) Processes in unix ii) Threads in solaris. (08 Marks)
- 4 a. Compare contiguous and noncontiguous memory allocation. (04 Marks)
- b. Explain:
 - i) Lazy buddy allocator in unix
 - ii) Memory compaction slab allocator of Solaris 2.4 system. (10 Marks)
- c. Explain internal fragmentation and external fragmentation with examples. (06 Marks)

PART - B

- 5 a. Write explanatory notes on: i) Virtual memory in unix ii) Demand paging. (12 Marks)
- b. For given reference string 7, 0, 1, 2, 0, 3, 0, 4, 2, 3, 0, 3, 2, 1, 2, 0, 1, 7, 0, 1 and for memory with 3 frames. Calculate the number of page faults for FIFO, optimal and LRU page replacement algorithms. (08 Marks)
- 6 a. Compare and contrast sequential, direct and index file organization, with examples. (12 Marks)
- b. Describe the interface between file and IOCS. (08 Marks)
- 7 a. Explain the terms long term, short term and medium term scheduling. (06 Marks)
- b. Write short notes on: i) Real time scheduling ii) Process scheduling in unix. (14 Marks)
- 8 Write short notes on:
 - a. Implementing message passing (08 Marks)
 - b. Mail boxes (06 Marks)
 - c. Inter process communication in unix. (06 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.