

**R13**

Code No: 115EH

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B.Tech III Year I Semester Examinations, November/December - 2018

OPERATING SYSTEMS

(Common to CSE, IT)

Time: 3 hours

Max. Marks: 75

**Note:** This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

**PART - A****(25 Marks)**

- 1.a) What are the goals of operating system? [2]
- b) What is an Operating system? What are the various OS Components? [3]
- c) What is critical section problem? [2]
- d) What is preemptive Scheduling? How is it different from non-preemptive scheduling? [3]
- e) What is Virtual Memory? Why is it required? [2]
- f) Compare LRU and Optimal Replacement Algorithms. [3]
- g) What are the files attributes up dated during file creation? [2]
- h) What are the methods for accessing the file? [3]
- i) Define deadlock. [2]
- j) Write down the principles of protection. [3]

**PART - B****(50 Marks)**

2. Describe evolution of operating system in detail. [10]
- OR**
3. What is the need for system calls? Explain the types of system calls provided by an operating system with respect to memory management. [10]
  4. Explain FCFS, RR and SJF scheduling algorithm with illustrations. [10]
- OR**
5. Explain about multiple-processor scheduling and real time scheduling. [10]
  - 6.a) What is the need of demand paging? Explain briefly.
  - b) Explain in detail about segmentation on with paging technique. [5+5]
- OR**
- 7.a) Explain in detail about paging technique.
  - b) Explain in detail Contiguous Memory Allocation. [5+5]
  8. Explain in detail about file system structure and implementation. [10]
- OR**
9. Explain in detail about free space management. [10]

10. How can deadlock be detected and recovered? Explain in detail with relevant example. [10]

**OR**

11.a) What is access matrix? What are various methods to implement it?

b) Explain Capability-Based Protection system. [5+5]

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