

Code No: RT31055

R13**SET - 1****III B. Tech I Semester Supplementary Examinations, October/November- 2018****OPERATING SYSTEMS**

(Common to Computer Science Engineering and Information Technology)

Time: 3 hours

Max. Marks: 70

Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B**)2. Answering the question in **Part-A** is compulsory3. Answer any **THREE** Questions from **Part-B**

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**PART -A**

- 1 a) Mention the objectives and functions of an operating system. [3M]
- b) Define preemption and nonpreemption. [4M]
- c) What is Semaphore? Mention its properties. [4M]
- d) List the steps needed for page replacement. [4M]
- e) What is deadlock? What are the schemes used in operating system to handle [3M]  
deadlocks?
- f) What are the various file accessing methods? [4M]

**PART -B**

- 2 a) Explain the operating system structure and its functions. [8M]
- b) Briefly Explain the different types of systems: parallel systems, distributed [8M]  
systems and real-time systems?
- 3 a) Explain the steps involved in process creation and process termination. [8M]
- b) Demonstrate FIFO and Round Robin CPU scheduling algorithms with suitable [8M]  
example.
- 4 a) What is the critical section? What are the minimum requirements that should be [8M]  
satisfied by a solution to critical section problem?
- b) Give a solution for readers-writers problem using conditional critical regions? [8M]
- 5 a) Explain the concept of demand paging in detail with neat diagrams. [8M]
- b) Given memory partition of 100 KB, 500 KB, 200 KB and 600 KB ( in order). [8M]  
Show with neat sketch how would each of the first-fit, best-fit and worst fit  
algorithms place processes of 412 KB, 317 KB, 112 KB and 326 KB (in order).
- 6 a) Explain the techniques used to prevent the deadlocks. [8M]
- b) Explain Banker's deadlock-avoidance algorithm with an illustration. [8M]
- 7 a) Discuss the different file allocation methods with suitable example. [8M]
- b) Compare and contrast free space management and swap space management. [8M]

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