

Code No:R164204C

# R16

<b>Set No. 1</b>
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IV B.Tech II Semester Regular Examinations, September - 2020

## OPERATING SYSTEMS

(Electronics and Communication Engineering)

Time: 3 hours

Max. Marks: 70

*Question paper consists of Part-A and Part-B*

*Answer ALL sub questions from Part-A*

*Answer any FOUR questions from Part-B*

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### PART-A(14 Marks)

1. a) Differentiate the functionalities of time sharing operating systems and multiprogramming operating systems. [3]
- b) What is process management? [2]
- c) How to define logical address space with limit and base registers. [2]
- d) Write about mutex and spin locks. [2]
- e) Write short notes on File Attributes. [2]
- f) What kind of support given LINUX for process creation? Discuss. [3]

### PART-B(4x14 = 56 Marks)

2. a) List and describe various services offered by operating systems. [7]
- b) Relate and explain with an example API, System call and Operating system to access the services offered by operating systems. [7]
3. a) Write about various threading issues concerning multithreaded programming. [7]
- b) Calculate various scheduling criteria by assuming minimum of 5 processes using any 3 preemptive scheduling algorithms. [7]
4. a) Explain various common techniques used for structuring the page tables. [7]
- b) How to map user's view of memory to the actual physical memory using segmentation. Explain in detail. [7]
5. a) How does deadlock avoidance differ from deadlock prevention? Explain deadlock avoidance in detail. [7]
- b) What is semaphore? Explain the implementation of signal and wait operations in binary and counting semaphores. [7]



6. a) What are the advantages and disadvantages of recording the name of the creating program with the file's attributes? Explain in detail. [7]
- b) Write a short note on the following
- i) Disk scheduling
  - ii) Free space management [7]
7. a) Explain how message passing and shared memory IPC mechanisms are implemented in LINUX operating systems. [7]
- b) With neat sketch explain the architecture of Android operating systems and various functionalities of it with respect to handheld systems. [7]

