

III B. Tech I Semester Supplementary Examinations, May – 2019**OPERATING SYSTEMS**

(Common to Computer Science and Engineering, 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****PART -A**

- 1 a) Relate boot blocks and booting in OS SYS generation. [2M]
- b) Explain various models of multithreading. [3M]
- c) Illustrate the Belady's Anomaly for the reference string: **5 0 1 2 0 3 0 4 2 3 0 3 2 1 2 0 1 5 0 1 2**. [2M]
- d) Discuss Resource-Request Algorithm with respect to deadlock. [3M]
- e) Write short notes on File operations and types. [2M]
- f) List out the various interrupts in LINUX. [2M]

PART -B

- 2 a) Explain what is meant by interleaving and overlapping with respect to multiprogramming and multi-processing. Assume system have two user processes. [7M]
- b) Draw and explain OS layered and modular architecture and its services. [7M]
- 3 a) Write and explain various scheduling criteria's with respect CPU scheduling. And show the calculations for at least 5 processes arriving at consecutive intervals. [7M]
- b) Explain typical elements of inter process communication models. [7M]
- 4 a) What is paging? Explain the hardware support given for paging. [7M]
- b) Consider the following page reference string 2,3,4,5,3,2,6,7,3,2,3,4,1,7,1,4,3,2,3,4,7. Calculate the number of page faults with LRU, FIFO and optimal page replacement algorithms with frame size of 3. [7M]
- 5 a) What is critical section problem? Write and explain Peterson's solution for it. [7M]
- b) How to prevent necessary and sufficient conditions of deadlock? Explain. [7M]
- 6 a) What are the advantages and disadvantages of recording the name of the creating program with the file's attributes? Explain in detail. [7M]
- b) In detail explain the structure of disk with a neat diagram. How to attach to the existing memory resource? [7M]
- 7 a) Explain the architecture of android with a neat diagram. [7M]
- b) Explain how the exceptions are handled in LINUX? [7M]
