Regulation R18 *Subject code:2P5EA & 2P5FA*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous, Accredited by NAAC with 'A' Grade)

B.Tech V Semester Supplementary Examinations, January 2023

OPERATING SYSTEMS
(Common to CSE & IT)

Maximum Marks: 70 06-01-2023 **Duration: 3 Hours**

Note: 1. This question paper contains two parts A and B.
2. Part A is compulsory which carries 20 marks. Answer all questions in Part A.
3. Part B consists of 5 Units. Answer any one full question from each Unit.
4. Each question carries 10 marks and may have a, b, c, d as sub questions.

Part-A

All the following questions carry equal marks (10x2M=20 Marks)

1 Explain any three main functions of an Operating System.
2 Define asymmetric multiprocessing
3 Write CPU scheduling.
4 Define Preemptive scheduling.
5 Define methods for handling deadlocks.
6 What is Semaphore? Mention its properties.
7 What is Thrashing.
8 What is belady's anomaly.
9 List the schemes that implement revocation capabilities?
10 Write about file system structure.

Part-B

Answer All the following questions. (5X10M=50Marks)

11 Discuss the services provided by the operating system for efficient system operation. [10]

OR

12 a) What is a System call and explain in detail the system call sequence to copy the contents of one file to another file.
b) What is deadlock? What are the schemes used in operating system to handle. [5+5]

13 Explain the following: [5+5]
a) Scheduling Queues b) Context switching

OR

14 Explain critical section problem & what is software-based solution to it? Explain. [10]

15 How semaphores can be used to deal with n-process critical section problem? Explain. [10]

OR

16 a) How the memory protection is assured in paging environment? [5]
b) Describe about Segmentation. [5]

17 Given free memory partitions of 100 K, 500 K, 200 K, 300 K, and 600 K (in order), how would each of the First-fit, Best-fit, and Worst-fit algorithms place processes of 212 K, 417 K, 112 K, and 426 K (in order)? [10]

OR

18 Explain the concept and performance of demand paging. [10]

19 Explain about goals and principles of protection. [10]

OR

20 a) Give overview of mass storage structure in detail. [5]
b) Describe about efficiency and performance of secondary storage. [5]