*R21 Regulation* *Subject code: D123OE1*

# TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

## M.Tech III Semester Supplementary Examinations, February 2024

## Operating Systems

## *(Power Electronics)*

***Maximum Marks: 70*** Date:17.02.2024 **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.**

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|---|---|---|
| | Part-A | |
| All the following questions carry equal marks | | (5X4M=20 Marks) |
| 1 | Write about CPU scheduling and job scheduling | |
| 2 | What is critical section problem | |
| 3 | What are different ways of handling deadlocks? | |
| 4 | Explain paging. | |
| 5 | Describe access matrix in few words. | |
| | Part-B | |
| Answer All the following questions. | | (5X10M=50Marks) |
| 6 | a) Draw & explain the dual mode operation of operating system. [5]<br>b) Write a short note on protection & security. [5] | |
| | OR | |
| 7 | a) Discuss the user view and system view of operating system. [5]<br>b) Draw the diagram for storage device hierarchy & explain the storage structure. [5] | |
| 8 | Explain critical section problem & what is software-based solution to it explain. [10] | |
| | OR | |
| 9 | Explain FCFS scheduling algorithm with suitable example and write its advantages? [10] | |
| 10 | Explain the various methods which we apply for recovery from deadlocks. [10] | |
| | OR | |
| 11 | Explain the Hierarchical paging and Hashed page table. [10] | |
| 12 | Consider the following reference string<br>1 2 3 4 2 1 5 6 2 1 2 3 7 6 3 2 1 2 3 6<br>Frame size=3 and apply the following page replacement algorithms<br>a) Optimal page replacement b) LRU [10] | |
| | OR | |
| 13 | a) Explain the concept of copy on write. [5]<br>b) Explain the concept of virtual memory on windows. [5] | |
| 14 | Explain the concept of file, its attributes and its and its operations. [10] | |
| | OR | |
| 15 | Explain the concept of access matrix in detail and explain its implementation strategies. [10] | |