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**Presidency University**

**Bengaluru**

**School Of Computer Science and Engineering & Information Science**

**Summer Term End-Term Examinations, August 2024**

**Date**: 06-08-2024

**Time**: 9.30 AM- 12.30 PM

**Max Marks**: 100

**Weightage**: 50%

**Odd Semester**: 2023 - 24

**Course Code**: CSA1006

**Course Name**: Operating Systems using UNIX Programming

**Department:** CSE

**Instructions:**

1. *Read the all questions carefully and answer accordingly.*
2. *Do not write any matter on the question paper other than roll number.*

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| --- | --- | --- | --- | --- |
| **Q.No** | **Questions** | **Marks** | **CO** | **RBT** |
| 1 | 1. Define Operating systems | 4 | CO1 | L1 |
| 1. List out Operating system and its services | 6 | CO1 | L2 |
| 1. Explain different operating system structures with neat sketches | 10 | CO1 | L3 |
| OR | | | | |
| 2 | 1. General Structure of a PCB | 4 | CO1 | L1 |
| 1. List out the System Calls with examples | 6 | CO1 | L2 |
| Draw a Gantt charts illustrating the execution of these processes using FCFS and Round Robin (Quantum=5ms) scheduling algorithms. Calculate the Throughput, Average Waiting time and Average Turn around time and draw the Gantt Chart | 10 | CO1 | L3 |

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| 3 | 1. What is the command used for file concatenation? | 4 | CO2 | L1 |
| 1. Write the program using the following system calls of UNIX OS-fork, exec, getpid, exit and wait | 6 | CO2 | L2 |
| 1. Write the five file Manipulation commands along with descriptions | 10 | CO2 | L3 |

OR

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| 4 | 1. Write a shell program to check the given number is even or odd. | 4 | CO2 | L1 |
| 1. Write the program using the following system calls of UNIX OS- close, STAT, opendir, readdir | 6 | CO2 | L2 |
| 1. Write a program for simulation of Ls Unix Commands | 10 | CO2 | L3 |

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| 6 | 1. Write a shell program to check the given year is leap or not. | 4 | CO3 | L1 |
| 1. Implement the priority scheduling algorithm with total and average waiting time. | 6 | CO3 | L2 |
| 1. Write a program for simulation of grep Unix Commands | 10 | CO3 | L3 |

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| 7 | 1. Write a shell program to display the following message PRESIDENCY UNIVERSITY | 4 | CO3 | L1 |
| 1. Implement the priority scheduling algorithm with total and average Turnaround time. | 6 | CO3 | L2 |
| 1. Write a shell program to print the sum of n natural numbers | 10 | CO3 | L3 |

OR

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| 8 | 1. List out the operating system applications | 4 | CO3 | L1 |
| 1. Draw the memory hierarchy diagram and explain | 6 | CO3 | L2 |
| C Explain in details about various android OS structures | 10 | CO3 | L3 |

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| 9 | 1. Define process | 4 | CO1 | L1 |
| 1. List out the attributes of a process | 6 | CO1 | L2 |
| 1. Draw the process state diagram and explain | 10 | CO1 | L3 |

OR

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| 10 | 1. What is Inter process Communication? | 4 | CO2 | L1 |
| 1. What is thread and its types? And discuss the multithreading models | 6 | CO2 | L2 |
| 1. Discuss in detail about threading issues | 10 | CO2 | L3 |