Pokhara engineering college

Unit Test

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| Level: Bachelor | Semester – Spring | Year : 2023 |
| Programme: Computer | | Full Marks: 50 |
| Course: Operating System | | Pass Marks: 23 |
| Time :1.5 hrs. |

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| *Candidates are required to give their answers in their own words as far as practicable.* |
| *The figures in the margin indicate full marks.* |
| Attempt all the questions. |

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|  | 1. Define Operating System. Explain “OS as an extended machine” 2. Explain the evolution of Operating System. | 3+5  7 |
|  | 1. Explain Dining philosopher’s problem and solution to it. 2. Discuss the conditions required for a deadlock to occur between processes. Explain different strategies for handling deadlocks. | 4+4  3+4 |
|  | 1. What do you mean by multithreading model. Explain its type. 2. Consider the set of 6 processes whose arrival time and burst time are given in table below.   If the CPU scheduling policy is Round Robin with time quantum = 5 unit, calculate the average waiting time and average turnaround time. (8)   |  |  |  | | --- | --- | --- | | **Process** | **Arrival Time** | **Burst Time** | | P1 | 0 | 7 | | P2 | 1 | 4 | | P3 | 2 | 15 | | P4 | 3 | 11 | | P5 | 4 | 20 | | P6 | 4 | 9 | | 2+6  7 |
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|  | Write short notes on **any two:**   1. Process vs Thread 2. Producer- Consumer Problem 3. Monolithic Kernel System | 2×5 |