

Reg. No: SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR  
(AUTONOMOUS)

B.Tech II Year II Semester Supplementary Examinations July-2022

FUNDAMENTALS OF OPERATING SYSTEMS

(Computer Science &amp; Information Technology)

Time: 3 hours

Max. Marks: 60

**PART-A**

(Answer all the Questions 5 x 2 = 10 Marks)

- |   |   |   |    |    |
|---|---|---|----|----|
| 1 | a | Define Kernel.                                | L2 | 2M |
|   | b | What is Process.                              | L1 | 2M |
|   | c | Explain Semaphores.                           | L2 | 2M |
|   | d | Write a Short Note on External Fragmentation. | L3 | 2M |
|   | e | List the Various File Attributes.             | L1 | 2M |

**PART-B**

(Answer all Five Units 5 x 10 = 50 Marks)

**UNIT-I**

- |   |   |   |    |    |
|---|---|---|----|----|
| 2 | a | Difference between Monolithic kernel and Micro kernel.              | L4 | 5M |
|   | b | Explain the various types of System calls with an example for each. | L2 | 5M |

**OR**

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|---|---|--|----|----|
| 3 | a | Discuss in briefly about Protection and Security.        | L2 | 5M |
|   | b | What is open source operating system. Explain in detail. | L5 | 5M |

**UNIT-II**

- |   |   |  |    |    |
|---|---|--|----|----|
| 4 | a | Explain in detail about operations of process.                               | L5 | 5M |
|   | b | Define CPU scheduling? Explain types of Scheduling and Scheduling Criterias. | L3 | 5M |

**OR**

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|---|---|--|----|----|
| 5 | a | Explain Process Control Block with neat diagram.                   | L5 | 5M |
|   | b | Describe the Inter Process Communication in client-server systems. | L2 | 5M |

**UNIT-III**

- |   |   |  |    |    |
|---|---|--|----|----|
| 6 | a | Explain in detail about Deadlock Avoidance.    | L2 | 5M |
|   | b | What are the Strategies for handling Deadlock? | L3 | 5M |

**OR**

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|---|---|--|----|----|
| 7 | a | What is Process synchronization? Explain Critical-section problem with solution. | L5 | 6M |
|   | b | Briefly discuss the solution for Dining-Philosophers Problem.                    | L3 | 4M |

**UNIT-IV**

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|---|---|---|----|----|
| 8 | a | What is Page replacement? Explain page replacement algorithms with example. | L4 | 6M |
|   | b | Discuss swapping memory management.   | L2 | 4M |

**OR**

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|---|---|---|----|----|
| 9 | a | Sketch and explain Structure of page table. | L3 | 5M |
|   | b | Explain the concept of Virtual memory.      | L5 | 5M |

**UNIT-V**

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|----|---|---|----|----|
| 10 | a | Compare the C-LOOK and C-SCAN disk scheduling algorithms. | L4 | 5M |
|    | b | Write short note on Disk attachment.                      | L3 | 5M |

**OR**

- |    |   |  |    |    |
|----|---|--|----|----|
| 11 | a | Explain the any two disk scheduling algorithms with neat diagrams. | L4 | 5M |
|    | b | Write short notes on (i) File Operations (ii) File sharing         | L3 | 5M |

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