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**SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR**  
(AUTONOMOUS)**B.Tech II Year II Semester Regular Examinations October-2020****OPERATING SYSTEMS**

(Computer Science &amp; Engineering)

Time: 3 hours

Max. Marks: 60

**PART-A**

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

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|----------|----------|------------------------------|------------|
| <b>1</b> | <b>a</b> | What is an Operating system? | <b>2 M</b> |
|          | <b>b</b> | Define process.              | <b>2 M</b> |
|          | <b>c</b> | Define semaphores.           | <b>2 M</b> |
|          | <b>d</b> | Explain Page Fault.          | <b>2 M</b> |
|          | <b>e</b> | What are File Attributes?    | <b>2 M</b> |

**PART-B**

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

**UNIT-I**

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|----------|----------|---|------------|
| <b>2</b> | <b>a</b> | Explain the different functions of an operating system and discuss the various services provided by an operating system | <b>5 M</b> |
|          | <b>b</b> | Write the differences between monolithic kernel and microkernel.  | <b>5 M</b> |

**OR**

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|----------|--|-------------|
| <b>3</b> | What are the functionalities of Operating Systems? Explain in detail | <b>10 M</b> |
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**UNIT-II**

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|----------|---|-------------|
| <b>4</b> | Consider 3 processes P1, P2 and P3, which require 5, 7 and 4 time units and arrive at time 0, 1 and 3. Draw the Gant chart, process completion sequence and average waiting time for. | <b>10 M</b> |
|          | i. Round robin scheduling with CPU quantum of 2 time units.   |             |
|          | ii. FCFS.   |             |

**OR**

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|----------|----------|---|------------|
| <b>5</b> | <b>a</b> | Write the difference between user level thread and kernel level thread. | <b>5 M</b> |
|          | <b>b</b> | What is a process? Explain Process Control Block.                       | <b>5 M</b> |

**UNIT-III**

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|----------|----------|---|------------|
| <b>6</b> | <b>a</b> | Explain the solution for Dining-Philosophers Problem. | <b>5 M</b> |
|          | <b>b</b> | Write about Deadlock Prevention Methods.              | <b>5 M</b> |

**OR**

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| <b>7</b> | Discuss about the following i) Semaphore ii) Monitor | <b>10 M</b> |
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**UNIT-IV**

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|----------|---|-------------|
| <b>8</b> | Discuss about different types of page replacement algorithms with example | <b>10 M</b> |
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**OR**

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|----------|----------|---|------------|
| <b>9</b> | <b>a</b> | What is Segmentation? Explain with Example. | <b>5 M</b> |
|          | <b>b</b> | Explain about Paging.                       | <b>5 M</b> |

**UNIT-V**

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|-----------|----------|---|------------|
| <b>10</b> | <b>a</b> | Explain the concept of file with Example. | <b>5 M</b> |
|           | <b>b</b> | Explain about access method with Example. | <b>5 M</b> |

**OR**

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| <b>11</b> | Explain file allocation methods in detail. | <b>10 M</b> |
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\*\*\*END\*\*\*