

Reg. No: 

--	--	--	--	--	--	--	--	--	--

**SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR**  
(AUTONOMOUS)

**B.Tech IV Year II Semester Advanced Supplementary Examinations September-2021**

**MECHATRONICS**

(Mechanical Engineering)

Time: 3 hours

Max. Marks: 60

(Answer all Five Units 5 x 12 = 60 Marks)

**UNIT-I**

- |   |  |    |    |
|---|--|----|----|
| 1 | a What is operating system, GPOS, RTOS?                            | L1 | 4M |
|   | b What are the differences between GPOS and RTOS                   | L2 | 4M |
|   | c Draw with neat sketch of open loop control system and explain it | L3 | 4M |

**OR**

- |   |  |    |    |
|---|--|----|----|
| 2 | a Write about Flexible manufacturing system?               | L6 | 6M |
|   | b What is CIM? List out various processes involved in CIM? | L2 | 6M |

**UNIT-II**

- |   |   |    |    |
|---|---|----|----|
| 3 | a Explain signal conditioning? And what are the processes occur in conditioning signal. | L2 | 6M |
|   | b Illustrate the functions of a signal conditioner?                                     | L4 | 6M |

**OR**

- |   |   |    |    |
|---|---|----|----|
| 4 | a What happens with increased and decreased resolution in computer?                     | L1 | 4M |
|   | b Write the function of resistors and draw symbol of fixed resistor with ANSI standard? | L6 | 8M |

**UNIT-III**

- |   |   |    |    |
|---|---|----|----|
| 5 | a Explain the advantages of pneumatic actuator over hydraulic actuator? | L1 | 6M |
|   | b Actuators plays a primary role in mechatronics system explains it?    | L4 | 6M |

**OR**

- |   |  |    |    |
|---|--|----|----|
| 6 | a Describe the basic components of pneumatic system with neat diagram? | L2 | 6M |
|   | b Describe performance Characteristics of Actuators                    | L1 | 6M |

**UNIT-IV**

- |   |  |    |    |
|---|--|----|----|
| 7 | a Explain high voltage circuit breaker? List out classification describe any one type? | L1 | 6M |
|   | b What is MOSFET? Explain two functions with neat sketch?                              | L1 | 6M |

**OR**

- |   |  |    |    |
|---|--|----|----|
| 8 | a What are the electromechanical drives? Explain relay function. | L2 | 6M |
|   | b What is Pulse Width Modulation? With sketch explain it?        | L3 | 6M |

**UNIT-V**

- |   |  |    |    |
|---|--|----|----|
| 9 | a How do micro controller works.             | L2 | 6M |
|   | b Explain the elements of a microcontroller. | L1 | 6M |

**OR**

- |    |  |    |    |
|----|--|----|----|
| 10 | a List out the various functional blocks of 8051 micro-controller. | L2 | 6M |
|    | b Write Opcodes which are used in handheld programming devices.    | L6 | 6M |

\*\*\* END \*\*\*