R16

Reg. No: | | | | | | | | | | |

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech IV Year II Semester Regular Examinations September 2020
REAL TIME OPERATING SYSTEMS
(Electronics & Communication Engineering)

Time: 3 hours   Max. Marks: 60

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

UNIT-I

1 **a** What is the need for Real Times systems? Explain with examples. **6M**
    b What are the specifications requirements in real time systems? **6M**

OR

2 Describe the overview of design process of embedded system. **12M**

UNIT-II

3 Explain different criteria for partitioning hardware and software perspective of real time systems. **12M**

OR

4 **a** Explain in briefly about the following
    i) Bus architecture   ii) system considerations   iii) CPU features **6M**
    b Write short notes on
    i) I2C   ii) SPI **6M**

UNIT-III

5 **a** Explain about On-chip peripherals used in embedded systems. **6M**
    b Define Hardware accelerators? Explain it. **6M**

OR

6 Explain the following real time communication peripherals.
i) I2C   ii) SPI   iii) UART **12M**

UNIT-IV

7 **a** What are the pros & cons of RTOS? **4M**
    b Explain the following Functionalities
    i) Task   ii) Task states   iii) Task control Block **8M**

OR

8 Explain the following elements of RTOS
i) Context Switching   ii) Interrupts Handling   iii) Multiprocessing **12M**

UNIT-V

9 **a** What is semaphore? Explain about types of semaphores. **6M**
    b What is the role of Semaphores? Explain about functions of semaphores. **6M**

OR

10 Explain about steps handle for RTOS Problems of Following
i) Priority Inversion Phenomenon   ii) Deadlock Phenomenon **12M**

*** END ***