



Code: 13A04703

B.Tech IV Year II Semester (R13) Advanced Supplementary Examinations July 2018

EMBEDDED SYSTEMS

(Electrical and Electronics Engineering)

Time: 3 hours

Max. Marks: 70

PART – A

(Compulsory Question)

1 Answer the following: (10 X 02 = 20 Marks)

- List the applications of embedded systems.
- Differentiate SISC and RISC design.
- State about Watch dog timer.
- List on chip peripherals of MSP430x5X series.
- Justify, how data transfer takes place in MSP430.
- State the role of timer and real time clock in MSP430.
- Justify why device drivers are necessary for interfacing a device with a processor.
- Define SPI and point out the operating speed of SPI.
- State about IOT and its features.
- Describe about embedded Wi-Fi.

PART – B

(Answer all five units, 5 X 10 = 50 Marks)

UNIT – I

2 Draw and explain the architecture of MSP430 microcontroller.

OR

- Explain Hardware architecture with neat diagram.
- Analyze the addressing modes of MSP430 microcontroller.

UNIT – II

4 Discuss about FRAM and Flash memory for low power and reliability.

OR

5 Explain the block diagram, address space and register sets of MSP430x5x microcontroller.

UNIT – III

6 Illustrate with neat diagram for remote controller of air conditioner using MSP430.

OR

7 Explain analog interfacing and data acquisition takes place in MSP430 microcontroller.

UNIT – IV

8 Demonstrate a low-Power battery less wireless temperature and humidity sensor with passive low Frequency RFID.

OR9 Explain how serial data transfer is performed in I² C bus. Also brief the steps involved in transfer of a byte using I² C.**UNIT – V**

10 Demonstrate the implementation of Wi-Fi connectivity in a Smart Electric Meter.

OR

11 Discuss about IOT architecture with neat diagram.

