Code: 13A04703

R13

B.Tech IV Year II Semester (R13) Regular & Supplementary Examinations April 2018

EMBEDDED SYSTEMS

(Electrical and Electronics Engineering)

Time: 3 hours Max. Marks: 70

PART – A

(Compulsory Question)

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

(a) What is an embedded system?
(b) Differentiate RAM and ROM.
(c) What is meant by active current consumption?
(d) Define pull up and pull down register.
(e) Define timer and real time clock.
(f) Discuss about ADC in MSP420.
(g) List out the synchronous and asynchronous interfaces.
(h) What is meant by serial communication?
(i) What are the benefits of adding Wi-Fi to the microcontroller?
(j) What is IoT? What are its applications?

PART – B

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

UNIT – I

2 Explain the low power RISC MSP420 microcontroller.

OR

3 Discuss about the architecture and instruction set of MSP420 microcontroller.

UNIT – II

4 Write short notes on interrupts and interrupt programming of MSP420x5x.

OR

5 Write short notes on register set, IO ports of microcontroller and FRAM Vs flash for low power & reliability.

UNIT – III

6 Explain about the interfacing of ADC to MSP420 microcontroller.

OR

7 Discuss about the remote control of AC using MSP420.

UNIT – IV

8 Write short notes on USB and SPI interface.

OR

9 Explain the implementation of UART interface using MSP420.

UNIT – V

10 Explain one of the applications of IoT using CC300 user API for connecting sensors.

OR

11 Discuss about the implementation of Wi-Fi connectivity in smart electric meter.

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