Code: 13A04703

R13

B.Tech IV Year I Semester (R13) Supplementary Examinations June 2018

EMBEDDED SYSTEMS

(Common to ECE and EIE)

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 are the main components of an embedded system?
(b) List out the addressing modes of 16 bit microcontroller MSP430.
(c) Explain the role of Watchdog timer in embedded systems.
(d) Explain about device drivers.
(e) Write notes on standby current consumption.
(f) Explain real time clock.
(g) Discuss about real time requirements of an embedded system.
(h) Briefly explain SPI.
(i) Where does the MSP430 fit?
(j) What are the challenges in IOT development?

PART – B

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

UNIT – I

2 Discuss about embedded system overview, applications and features.

OR

3 Draw the block diagram of Low Power RISC MSP430 and explain its features and architecture.

UNIT – II

4 Explain the on-chip peripherals and register sets of MSP430X5X series.

OR

5 What happens when an interrupt is requested? Discuss about the issues associated with interrupts.

UNIT – III

6 Explain about real time clock control register RTCCTL.

OR

7 Explain the key features of MSP430 based embedded system application using ADC & PWM.

UNIT – IV

8 Explain about Inter- Integrated circuit bus features.

OR

9 Discuss about communication peripherals in the MSP430.

UNIT – V

10 Explain about user APIS for wireless and networking applications.

OR

11 Write the overview and architecture of IOT.

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