Code: 13A04703

R13

B.Tech IV Year II Semester (R13) Regular Examinations April 2017

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 are the advantages and limitations of RISC design?
(b) Differentiate Von-Neumann and Harvard architecture.
(c) Write down the register sets of MSP430x5x.
(d) Briefly discuss the structure and working of FRAM cell.
(e) What are the uses of PWM control?
(f) What is DMA interface?
(g) Compare UART and USB.
(h) What are the limitations of SPI protocol?
(i) What is IoT?
(j) List out the applications of IoT.

PART – B

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

UNIT – I

2 Explain about the features and architecture of MSP430 with block diagram.

OR

3 Discuss about various addressing modes of MSP430 with example.

UNIT – II

4 Describe about address space and on-chip peripherals of MSP430x5x series.

OR

5 What is watchdog timer? Describe its features and uses.

UNIT – III

6 Discuss about ADC interfacing in MSP430 with diagram.

OR

7 Explain in detail about MSP430 based embedded system application using PWM.

UNIT – IV

8 Write short notes on:

(a) USB.
(b) I2C protocol.

OR

9 Describe about implementation and programming of UART interface using MSP430.

UNIT – V

10 Explain in detail about the architecture of IoT.

OR

11 Discuss about the implementation of Wi-Fi connectivity in a Smart Electric Meter.

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