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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)

- 1 Answer the following: $(10 \times 02 = 20 \text{ Marks})$
 - (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, $5 \times 10 = 50 \text{ Marks}$)

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 - IL

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.
