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SEAT No. :
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TE/INSEM/APR-35

T.E. (Electronics Engineering)

304207 : EMBEDDED PROCESSORS

(2015 Pattern) (Semester - II)

Time : 1 Hour]

Instructions to the candidates

- 1) Answer Q1 or Q2, Q3 or Q4 and Q5 or Q6.
- 2) Figures to the right side Indicate full marks.
- 3) Assume suitable data, if necessary.

[Max. Marks : 30

Q1) a) Explain in brief functions of on chip peripherals of MSP 430 microcontroller. **[6]**

b) Explain status register used in MSP 430 microcontroller. **[4]**

OR

Q2) a) List clock sources, clock signals and explain any two oscillators used in MSP 430 microcontroller. **[6]**

b) What is mean by FRAM? Compare FRAM and Flash memory. **[4]**

Q3) a) Explain following GPIO registers of MSP 430 Microcontroller. **[6]**

- i) PxDIR
- ii) PxIN
- iii) PxOUT
- iv) PxSEL

b) Explain the function of watchdog timer. Explain the operating modes of watchdog timer in MSP 430 microcontroller. **[4]**

OR

Q4) a) List features of ADC of MSP 430 Microcontroller. Draw and explain block diagram of ADC 10 of MSP 430 Microcontroller. **[6]**

b) Explain UART communication protocol in detail. **[4]**

P.T.O.

Q5) a) Draw & Explain Programming model of ARM 7 microcontroller. **[6]**

b) Compare ARM 7 and ARM 9 microcontroller. **[4]**

OR

Q6) a) Explain the following instructions of ARM 7 microcontroller. **[6]**

- i) EOR R3, R4, R5
- ii) LDR R0, [R1, #8]
- iii) RSB R0, R1, R2

b) Draw format of Current Program Status Register of ARM 7 microcontroller and explain function of each bit. **[4]**

