

Total No. of Questions :6]

SEAT No. :

P219

[Total No. of Pages :2

Oct./ BE/ Insem. - 535

B.E. (Electrical)

**FUNDAMENTALS OF MICROCONTROLLER MSP430 AND
ITS APPLICATIONS**

(2015 Course) (Semester - I) (403143A) (Open Elective-I)

Time : 1 Hour]

[Max. Marks :30

Instructions to the candidates:

- 1) *Answer Q1 or Q2, Q3 or Q4, Q5 or Q6.*
- 2) *Neat diagrams must be drawn wherever necessary.*
- 3) *Figures to the right side indicate full marks.*
- 4) *Assume suitable data, if necessary.*

Q1) a) Explain with a neat diagram Functional Block diagram of a MSP430 microcontroller. **[5]**

b) Write a short note on MSP430G2 Launchpad. **[5]**

OR

Q2) a) With a neat diagram explain the internal RAM organization of MSP430 microcontroller. **[5]**

b) Explain the on chip peripheral “Hardware multiplier” **[5]**

Q3) a) With an example explain any three addressing modes of MSP430 microcontroller. **[5]**

b) write a program to switch on led's connected to port pin P2.3 and P2.4 LED are connected in common cathode configuration. **[5]**

OR

P.T.O.

Q4) a) write a short note on interrupt structure of MSP430. [5]

b) Explain the following registers associated with the port P1IN, P1OUT and P1DIR. [5]

Q5) a) With block diagram explain the basic timer 1 module of MSP430 microcontroller. [5]

b) Explain the measurement of time period of a signal using Capture mode in MSP430 microcontroller. [5]

OR

Q6) a) Explain use and working of the Real Time Clock with MSP430 [5]

b) Write a program to generate center aligned 1 kHz PWM using timer-counter combination. [5]