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Code : 15EC62T

Register Number | | | | | | | | | | |

VI Semester Diploma Examination, Oct./Nov.-2019

EMBEDDED SYSTEMS

Time : 3 Hours] **[Max. Marks : 100**

Note : (i) Answer any **six** questions from PART – A.

(ii) Answer any **seven** questions from PART – B.

PART – A

1. Explain the characteristics of an embedded system. 5

2. Write a note on Programmable Logic Devices (PLD) and explain the role of PLD in embedded system. 5

3. Differentiate between ASIC & ASSP. 5

4. Explain MSP430 status register. 5

5. Explain MSP430 arithmetic instructions with one and two operands. (any one instruction in each) 5

6. Write an assembly language program in MSP430 to light LED when button is pressed. 5

7. Explain MSP430 interrupts from Timer_A. 5

8. Explain operation of MSP430 Comparator-A. 5

9. Describe how can we use comparator A in capacitive touch sensing. 5

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PART – B

10. Explain the quality attributes of an embedded system. **10**

11. List different types of memory used in embedded system and explain their role. **10**

12. (a) Explain the role of watchdog timer in embedded system. **5**

    (b) Define actuator. Explain the role of it in embedded system with example. **5**

13. Explain different addressing modes supported by MSP430 microcontroller. **10**

14. (a) Compare MSP430 microcontroller with 8051 microcontroller. **5**

    (b) Explain the memory mapping of MSP430 microcontroller. **5**

15. Write MSP430 assembly language and C-language programs to flash LED's with a frequency of approximately 1 Hz using a software delay. **10**

16. (a) Explain MSP430 shift and rotate instructions. (any one instructions in each) **5**

    (b) Explain any two MSP430 flow control instructions. **5**

17. (a) Explain MSPLCD driver with control register. **5**

    (b) Differentiate between non-interruptable I/O and interruptable I/O. **5**

18. Explain basic operation of ADC10 and ADC12 related to MSP430 microcontroller. **10**

19. Explain the architecture and operation of MSP430 comparator A with block diagram. **10**