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**Regulation: R16****Code :16EC302/1**

III B.Tech. I Semester Regular Examinations – November, 2018

MICROPROCESSORS & MICROCONTROLLERS**Time: 3Hrs****(ECE)****Max. Marks: 60M****SECTION – A****Answer all ten questions****10×1M=10 M**

1. How much memory, in terms of bytes, can be interfaced with the 8086?
2. What is the function of ALE and READY pins in the 8086?
3. Differentiate between microprocessors and microcontrollers.
4. What is the role of PC and DPTR registers in 8051?
5. What is the function of TF and TR bits in TCON register?
6. How will you double the baud rate in the 8051?
7. What is ARM7TDMI?
8. What is thumb mode of operation of ARM?
9. State the role of R13 and R14 Registers in ARM
10. What is the function of STMIA/LDMIA instructions in ARM?

SECTION – B**Answer all four questions****4×5M= 20 M**

11. Draw the flag register format and explain the conditions which can cause to set and reset the conditional flags.

(OR)

12. Write an assembly language program to add eight 32-bit hexadecimal numbers.

13. What do you understand about memory segmentation and explain the advantages of segmentation.

(OR)

14. Write an assembly language program to move a block data words from offset 2000H to offset 3000H the size of the block is 0F.

15. Explain the on-chip memory organization of 8051 microcontroller

(OR)

16. Write a program to generate 1 KHz square wave on P1.3 assume crystal frequency is 11.0592MHz.

17. Discuss the 8051 I/O port 0 structure and alternate functions of port 3 pins.

(OR)

18. Explain the addressing modes supported by the 8051.

SECTION – C**Answer all three questions****3×10M= 30 M**

19. Explain the 8051 timer logic and different modes of operation with neat sketches.
Write a program to that continuously gets 8-bit data from P0 and sends it to P1 while simultaneously creating a square wave of 1msec period on P2.1. Use timer 0 to create the square wave. Assume that XTAL=11.0592MHz.

(OR)

20. Draw the interface scheme to connect LCD 20x2 and ADC 0804 with 8051 microcontroller. Write a program to read analog input in to register A, convert it into ASCII and then display on LCD 1st row 5th position.

21. Explain the data processing instructions in ARM with example.

(OR)

22. Explain the single register load and store instructions with examples.

23. Draw the ARM7TDMI core data flow model. Discuss the register organization and different modes of operation of ARM.

(OR)

24. Discuss the evolution of ARM architecture families. Explain about ARM design philosophy and explain the difference between RISC and CISC processors.