

20/11/13

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**B.E./B.Tech. (FT) DEGREE END SEMESTER EXAMINATIONS, NOV/DEC 2013**

**BRANCH: ELECTRONICS AND COMMUNICATION ENGINEERING**

**FIFTH SEMESTER**

**BM9305 – MICROPROCESSOR, MICRO CONTROLLER AND SYSTEM DESIGN**

REGULATIONS: 2008

Time: 3 Hours

Max.Marks: 100

Answer ALL questions

**PART A – (10 x 2 = 20 marks)**

1. What is the purpose of ALE signal in 8085 processor?
2. How the 20 bit effective address is calculated in 8086 processor?
3. Name the various flags available in 8086 microprocessor?
4. Give the usage of any two assembler directives in 8086 Processor
5. What is the specialty of BSR mode of 8255?.
6. What are the applications of 8254?
7. What are the internal features of 8051 microcontroller?
8. What is the purpose of EA/VPP and PSEN pin of 8051
9. Assume that a DAC is constructed by using R/2R ladder in which  $R = 5k$  and  $I_{ref} = 2\text{ ma}$  and find the  $V_{out}$  for the binary input 11001000
10. What is the advantage of Stepper Motor in Industrial Applications?

**PART B – (5 x 16 = 80 marks)**

- 11 (i) Briefly explain all the addressing modes of 8085 with example instruction? (8)
- (ii) With the neat sketch explain the architecture of 8086 processor? (8)
- 12 (a) Discuss in detail the five groups of Interrupts used in 8086 with its priority and also draw the IVT of 8086?

(OR)

12 (b) (i) Design an 8086 based system in minimum mode containing 64kb of EPROM and 64kb of RAM (12)

(ii) Give the functions of NMI, BHE and TEST pins of 8086? (4)

13 (a) With a neat diagram, explain the architecture of 8255 and its different modes of operation

(OR)

13 (b) Draw the block diagram of programmable interrupt controller and explain its operations..

14 (a) With a neat sketch, describe the Internal RAM memory organization in 8051

(OR)

14 (b) With a neat sketch, briefly explain the serial data transmission and reception employed in 8051 with its associated instructions

15 (a) Design a 8051 based system to interface ADC 0804 and also write the necessary program to get the digital output for the respective analog input.

(OR)

15 (b) Describe any one idea in the field Bio-medical system where we can use 8051 system design to capture the biological parameters

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