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4633

Your Roll No. ....

B.Sc. Prog./III

AS

EL-302 : Microprocessors and Micro Controllers

(Admissions of 2005 & onwards)

Time : 3 Hours

Maximum Marks : 75

(Write your Roll No. on the top immediately  
on receipt of this question paper.)

Attempt any **Five** questions.

All questions carry equal marks.

1. Attempt any **five** questions :-

(a) Calculate the time required to execute the following two instructions if systems clock frequency is 750 KHz :-

MOV C, B      4T-States

JMP 2050H    10T-States

(b) Explain the function of HOLD and READY signals in 8085 microprocessor.

(c) Differentiate between the following instructions (Any two)

(i) SUBB and CMPB

(ii) SHLD and LHLD

(iii) EI and DI

P.T.O.

- (d) Show the bit positions of various flags in flag Register of 8085 microprocessor. Mention the purpose of flag register.
- (e) How many interrupts do we have in 8051 microcontroller including reset? What register keeps track of interrupt priority in 8051? Is it a bit addressable register?
- (f) Define and explain status word in 8155.
- (g) List the six modes of 8253 programmable interval timer. (3×5)
2. (a) Illustrate the execution of instruction MVIA, 32H stored in location as given below with the help of a timing diagram :-
- | Memory Location | Machine Code | Memories  |
|-----------------|--------------|-----------|
| 2000            | 3E           | MVIA, 32H |
| 2001            | 32           | (10)      |
- (b) Explain Bus structure of 8085 microprocessor with diagram. (5)
3. (a) Give detailed classification of instructions in 8085 microprocessor according to their functions and word size with help of examples (2 each). (10)

- (b) Draw Labelled Pin out diagram of 8085 microprocessor. (5)
4. (a) Define Addressing Modes. Give detailed explanation of Addressing modes in 8085 microprocessor with help of examples. (10)
- (b) Explain briefly Mode 1 of 8255 PPI device. (5)
5. (a) Write a short note on timer of 8155. (5)
- (b) Define Subroutine. What is their utility? Give detailed explanation of CALL and RETURN instructions used to implement subroutines in 8085 microprocessor. (7)
- (c) Define Instruction Cycle, Machine Cycle and T-state. (3)
6. (a) Describe the four major sections of 8279. (10)
- (b) Explain Priority modes in 8259 A. (5)
7. (a) Write a short note on register banks in 8051 microcontroller. (5)
- (b) What is the name of flag register in 8051 microcontroller? Mention its size. Also specify which bits of this register are user definable. (3)

- (c) Explain RS-Y22 and RS-Y23 interface standards. (7)
8. (a) Draw timing diagram of OVT instruction and explain it in brief. (7)
- (b) What is memory map ? Explain with an example. (6)
- (c) Explain the working of PCHL instruction in 8085 microprocessor. (2)