5136   *Your Roll No. ....*

B.Sc. (Prog.) / III   **B**

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. (a) Differentiate between static and dynamic RAM.   5

    (b) Discuss the bus system of 8085 µP.   8

    (c) Explain PSW.   2

2. (a) What are different control signals and how are they generated ?   7

    (b) What is demultiplexing and how it is done in 8085 ?   8

3. (a) What are different addressing modes ? Explain with suitable examples.   10

(b) Explain the following instructions :

(i) ADC (ii) STAX (iii) LDA (iv) NOP (v) RLC 5

4. (a) Draw and explain the timing diagram of the instruction MVI B, 204. Calculate the execution time for instruction for oscillator frequency of IMHz   10

(b) Explain (i) T State (ii) Machine cycle and (iii) Instruction cycle   5

5. (a) What are subroutines? Explain their utility.   5

(b) Write an assembly language program of multiplication of two 8 bit numbers using subroutine.   8

(c) What is operating system ?   2

6. (a) Explain all the interrupts available in 8085 μP. 10

(b) How delay is generated using a register pair ?   5

7. (a) What is DMA ? Explain its utility.   6

(b) Write the control word of 8255 PPI. What is the control word for port A as input, port B as output PC_u as input and PC_L as output in mode 0.   9

8. Write short notes on any two of the followings :

$7\frac{1}{2} \times 2 = 15$

(i) 8253

(ii) 8051 micro controller

(iii) 16 bit micro processor

(iv) 8279 Key board /Display interface