

2012

ELECTRONICS

(Microprocessor and its Application)

PAPER—ELC-301

[Theory]

Full Marks : 50

Time : 2 hours

Answer **Q. No. 1** and any **three** questions from the rest

The figures in the right-hand margin indicate marks

Candidates are required to give their answers in their own words as far as practicable

Illustrate the answers wherever necessary

1. (a) Draw the block diagram of the built-in clock of 8085 μ P.
- (b) How the vector address for a software interrupt is determined ?
- (c) What the instruction DAD H stands for ?

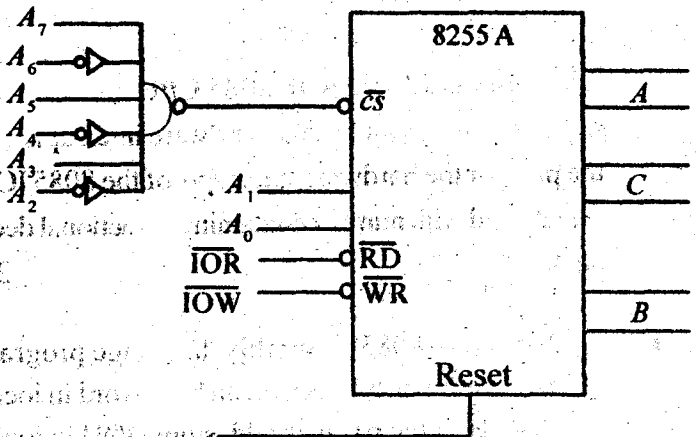
- (d) Exchange the contents of DE register pair with that of HL register pair, using PUSH and POP instructions.
- (e) If the segment address is 1005 H and the offset is 5555H, then calculate the physical address. 2×5
2. (a) Draw the functional block diagram of the 8085 μ P. Compare the 8085 and 8086 μ Ps.
- (b) What is the function of ALE and how does it function? $(5 + 2) + (1 + 2)$
3. What do you mean by the hardware software interrupts available with 8085 CPU? Describe the functional behaviour of the hardware interrupts? Why the pins for the hardware interrupts of the 8085 IC chip are labelled with number containing a fractional decimal number. $2 + 6 + 2$
4. (a) Write an 8085 assembly language program to perform a parity check on an 8-bit word in location 5000 H. If the parity is odd, store DDH in location 5500 H. However, if the parity is even, store EEH in location 5500 H.

(b) Write an 8085 subroutine to compute $Y = 4X^2$. Assume that X is an 8-bit unsigned number. Also assume that the result $Y = 4X^2$ can be accommodated in 16 bits. Store the result in register pair H, L .

(c) At what highest memory location can the SP be initialized? 4 + 4 + 2

5. (a) Draw the block diagram of 8255 A. Show the control word format for I/O mode operation of 8255 A.

(b)



Determine the port addresses for port A, port B, port C and control register of the above figure.

(5 + 3) + 2

6. (a) What is meant by serial and parallel interface standards ? Describe IEEE 488 standard.
- (b) What is current loop interface ? State its advantage.
- (c) How the error checks are made in data communication? $(2 + 2) + (2 + 1) + 3$

[*Internal Assessment* : 10 Marks]