

SH-V/Electronics-501C-11(T)/19

B.Sc. 5th Semester (Honours) Examination, 2019

ELECTRONICS

Course ID : 51711

Course Code : SH/ELC/501/C-11(T)

Course Title : Microprocessor and Microcontrollers

Time 1 Hour 15 Minutes

Full Marks: 25

The figures in the margin indicate full marks.

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

1. Answer *any three* of the following: 1×3=3
 - (a) Give the power supply and clock frequency of 8085 μ p.
 - (b) What is the use of ALE signal?
 - (c) What is T-state?
 - (d) What is meant by Microcontroller?
 - (e) Name special purpose registers of 8085 μ p.
 - (f) Why data bus is bidirectional?

2. Answer *any three* of the following: 2×3=6
 - (a) Define instruction cycle and machine cycle.
 - (b) What are the differences between microprocessor and microcontroller?
 - (c) State the significance of X₁ and X₂ pins of 8085 μ p.
 - (d) Define stack and stack pointer.
 - (e) What is meant by vectored and Non-vectored interrupts?
 - (f) Give one example each of 1-byte, 2-byte and 3-byte instruction.

3. Answer *any two* of the following: 5×2=10
 - (a) Draw the pin diagram of 8085 μ p. Explain the function of HOLD and READY signals.
 - (b) Draw and explain the timing diagram of memory read cycle.
 - (c) What are software interrupts? Mention the instructions, their hex codes and the corresponding vector addresses. 2+3=5
 - (d) Draw and label the flags in the flag register in 8085 μ p. Briefly explain them.

4. Answer *any one* of the followings:

6×1=6

- (a) Write an assembly language program with comment lines. An 8-bit number is stored in memory location C100H. Count number of ones (i.e. 1's) in this byte and store this count in memory location C200H.
- (b) Explain the following instructions with suitable example of each:
 - (i) LXI (ii) MOV (iii) SHLD (iv) LDAX (v) CMP (vi) STA.
