

B.Sc. Semester-V Examination, 2022-23**ELECTRONICS [Honours]**

Course ID : 51711 Course Code : SH/ELC/501/C-11(T)

Course Title : Microprocessors and Microcontrollers

Time : 1 Hour 15 Minutes

Full Marks : 25

*The figures in the right-hand margin indicate marks.**Candidates are required to give their answers in their own words as far as practicable.*1. Answer any **three** of the following questions:

1×3=3

- What are the basic units of a microprocessor?
- What is meant by interrupt?
- What do you mean by subroutine?
- Mention the control signal and status pins of 8085 μ P.
- Mention the power supply and clock frequency of 8085 μ P.
- List the allowed register pairs of 8085.

2. Answer any **three** of the following questions:

2×3=6

- What are the two different techniques used for interfacing I/O devices using 8085 μ P? Differentiate between them. 1+1=2
- How many machine cycles does 8085 μ P have? Name them. 2
- What is meant by 'Vectored' and 'Non-Vectored' interrupt? Give examples of each. 1+1=2
- What is the purpose of I/O instruction - IN and OUT? 2
- Differentiate between microprocessor and microcontroller. 2
- What is meant by data transfer group of instruction set of 8085 μ P? Give two examples. 1+1=2

3. Answer any **two** of the following questions:

5×2=10

- Draw the pin diagram of 8085 microprocessor and explain the function of the pins 'S₁' and 'S₀'. 5
- Explain instruction cycle, machine cycle and T-states. Draw timing diagram of memory read machine cycle. 2+3=5

- c) Draw and label the flags in flag register of 8085.
Briefly explain them. 5
- d) Write an assembly language program in 8085
microprocessor to find the number of 1'S and
0'S in an 8-bit number. 5

4. Answer any **one** of the following questions:

6×1=6

- a) Explain the following instructions with suitable
example:
(i) LXI (ii) MOV (iii) SHLD (iv) LDAX
(v) CMP (vi) STA.
- b) Interface 2K×8 RAM with 8085 microprocessor
by using IC 74138 such that starting address
assign to them are 8000 H.
- c) Explain different types of addressing modes in
8085 with examples.
