

2021
COMPUTER SCIENCE
[HONOURS]
Paper : VIIA

Full Marks : 50

Time : 2 Hours

The figures in the right-hand margin indicate marks.

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

Answer **question no. 1** and any **three** from the rest.

1. Answer any **four** questions: 2×4=8
- a) What is an assembler?
 - b) Why is data bus of 8085 microprocessor bi-directional?
 - c) What is the function of ALE?
 - d) Write the difference between RLC and RAL.
 - e) Write the difference between programmed I/O and memory mapped I/O.
 - f) MVI A, 17H
loop: ORA A
RAL
JNC loop
How many times the loop will be executed?

g) Write the difference between Jump and Call instruction.

2. a) Discuss different addressing modes of 8085 microprocessor with one example for each type.
- b) Explain the need to demultiplex the AD₀-AD₇.
- c) Discuss different flags present in 8085.
- d) Explain different branching instruction of 8085. 5+2+3+4=14
3. a) Draw the timing diagram of MVI A, 07H instruction. What is the function of CMC instruction?
- b) Write the uses of following instruction:
- i) XCHG
 - ii) ORA
 - iii) RLC
 - iv) ACI (7+1)+1½×4=14
4. a) Write an assembly language program to find out the largest number from a given unordered array of 8 bit numbers, stored in the location starting from known address.

[Turn over]

- b) What is the use of bi-directional buffers?
- c) Explain control and status signals of 8085 micro-processor. $6+2+6=14$
5. a) Specify the no. of registers and memory cells in a 128×4 memory chip.
- b) Explain the direct addressing mode and indirect addressing mode of 8085 with example.
- c) Define instruction cycle, machine cycle and T-state.
- d) What is subroutine? $2+4+6+2=14$
6. a) Write the function and addressing mode name of following instruction:
STA, DAD, PUSH, MOV, LDAX
- b) Write a program in 8085 assembly language to generate 7th term of Fibonacci series.
- c) Describe minimum mode of operation in 8086 microprocessor. $5+5+4=14$
