2022

BCA (Hons)

B.Sc. Fifth Semester End Examination - 2022

PAPER - DSE1T

Microprocessor

Full Marks : 40   *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.
Illustrate the answers wherever necessary.

Group-A

Attempt any five questions   **5×2=10**

1. a) What is the role of $IO/\overline{M}$ pin of 8085?

    b) Which I/O mode of 8255 does support bi-directional I/O?

    c) Does opcode fetch machine cycle always require 4 T-states for every 8085 instruction?

d) What does the instruction *DAD B* do?

e) What is the interrupt service routine address of RST 7.5?

f) In which addressing mode do the following instructions belong?
(i) LXI H, 2000 (ii) STA 2001 (iii) RAL (iv) CMA

g) How is PUSH B instruction executed? Find the status after the execution.

h) Explain the need to demultiplex the bus AD_7-AD_0.

Group -B

Attempt any four questions   **4×5=20**

2. How many I/O ports are there in 8255? Write a short note on BSR mode of 8255.   1+4

3. Consider the following 8085 code segment. Determine total time required by this code. Consider that 8085 clock frequency in 3 MHz.

MOV A,B
ADD C
SUI 55$_H$
RAR

4. What is the size of address if I/O device in I/O-mode I/O? What is the maximum number of I/O devices that can be interfaced to an 8085 microprocessor in I/O-mode I/O? What are the instructions used for I/O-mode I/O.   2+1+2

5. Show the register contents as each of the following instructions is being executed :
MVI C, FFH
LXI H, 8070H
LXI D, 8070H
MOV M, C
LADX D
HLT

6. Write an 8085 ALP using STAX to store data from accumulator to the memory address 453CH.

7. What are the varioius interrupts in 8085 microprocessor? Which is the highest priority interrupt?

Group - C

Attempt any one question   **1×10=10**

8. a) Show the status of flags after execution of each of the following instruction.   5

   XRA   A

   ADI $F2_H$

   MVI   B, F F_H

   INR   B

   (b) Design an interfacing circuit to interface 2 KB memory with 8085.   5

9. Draw the archietectural diagram of 8085 microprocessor and list out the following :

   (i) General purpose Registers

   (ii) Special Purpose registers with their functions

   (iii) Flags in the register with required explanation.

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