

UG/4th Sem/H/22(CBCS)

2022

COMPUTER SCIENCE (Honours)

Paper Code : DC-10(a)

[Introduction to Microprocessor]

(CBCS)

Full Marks: 25

Time: Two hours

*The figures in the margin indicate full marks.  
Candidates are required to give their answers  
with their own words as far as practicable.*

**Group - A**

Answer any *five* questions from question no.1. Each question carries two marks.  
2×5=10

1. (a) Explain machine cycle briefly.
- (b) State the addressing mode of the following instructions :
  - (i) CMA (ii) LDAX Rp
- (c) Distinguish between microprocessor and microcontroller.
- (d) Find the content of the accumulator after executing the following program:

```
MVI B, 32H
MOV A, B
CMA
INR  A
ADD B
```
- (e) Differentiate between CALL and JMP.
- (f) Specify the control signal and the direction of the data flow on the data bus in a memory-write operation.

**Group- B**

Answer any *three* questions. 3×5=15

2. (a) If the memory chip size is 1024 x 4 bits, how many chips are required to make up 2048 bytes of memory? Find the first and last address of each block.

( 2 )

(b) Find the content of the accumulator and execution time for the following code :

```
MVI B, 05H
MVI A, 01H
LOOP: ADD A
      DCR B
      JNZ LOOP
```

(1+2)+(1+1)

3. (a) Write a 5 ms time delay subroutine using register pair BC.

(b) Explain the functionality of the pin HLDA in 8085 microprocessor. 3+2=5

4. (a) Draw the timing diagram for the instruction – LDAX D.

(b) Distinguish between ADC Reg and ADD Reg. 3+2=5

5. (a) Why NOP is required?

(b) Find the machine cycles and t-states for the following instructions :

(i) STA (ii) DAD (iii) JMP (iv) CNC 1+(1+1+1+1)

---