20SSP25/14SSP23

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

MSc(SS) DEGREE EXAMINATION MAY 2025
(Fourth Semester)

Branch – **SOFTWARE SYSTEMS**(Five Year Integrated)

MICROPROCESSOR AND INTERFACING

Time: Three Hours Maximum: 75 Marks

SECTION-A (10 Marks)
Answer **ALL** questions
ALL questions carry **EQUAL** marks (10 x 1 = 10)

1 How many general-purpose registers are there in 8085?
(i) 4 (ii) 5
(iii) 6 (iv) 8

2 The 8085 microprocessor has how many address lines?
(i) 8 (ii) 16
(iii) 32 (iv) 64

3 The 8085 microprocessor has how many flag registers?
(i) 3 (ii) 4
(iii) 5 (iv) 6

4 What is the size of the accumulator in 8085?
(i) 4 bit (ii) 8 bit
(iii) 16 bit (iv) 32 bit

5 Which of the following is a 1-byte instruction?
(i) MVI A, 32H (ii) LXI H, 2050H
(iii) STA 3000H (iv) MOV A, B

6 Which instruction exchanges the contents of DE and HL register pairs?
(i) XTHL (ii) XCHG
(iii) SPHL (iv) PCHL

7 Which instruction will subtract the contents of register B from accumulator?
(i) SUB B (ii) SBB B
(iii) CMP B (iv) MOV A, B

8 Which instruction complements all bits of the accumulator?
(i) XRA A (ii) ANI 00H
(iii) CMA (iv) CMC

9 If SP = 3000H and a PUSH instruction is executed, what will SP become?
(i) 3002H (ii) 2FEFH
(iii) 2FFEH (iv) 2FFFH

10 In BSR mode, which port is affected?
(i) Port A (ii) Port B
(iii) Port C (iv) Port D

Cont...

SECTION - B (25 Marks)

Answer **ALL** questions
ALL questions carry **EQUAL** Marks (5 x 5 = 25)

11 a Explain 8085 bus Architecture.

OR

b Discuss various registers in 8085.

12 a Explain Demultiplexing the data bus and address bus.

OR

b Brief the process of generating control signals.

13 a Narrate any three data transfer instructions.

OR

b Illustrate the process of looping, counting and indexing.

14 a Write an ALP for addition on two 8-bit numbers.

OR

b Develop an ALP for Subtracting two 8-bit numbers.

15 a Explain the control word format of 8255 PPI.

OR

b Write an ALP for masking MSB of a data.

SECTION -C (40 Marks)

Answer **ALL** questions
ALL questions carry **EQUAL** Marks (5 x 8 = 40)
Question No. 16 is Compulsory

16 Write a ALP for multiplying two 8-bit data's.

17 a Classify the different types of memory and explain it.

OR

b Describe the architecture of 8085.

18 a Explain the unconditional and conditional branching instructions in 8085.

OR

b Discuss various ROTATE logic instructions in 8085.

19 a Write an ALP to find one's and two's compliment of a data.

OR

b Develop an ALP to find the smallest of a given array.

20 a Draw the block diagram of 8255 PPI and explain it.

OR

b Design a water level indicator using 8255 PPI.

Z-Z-Z

END