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SARDAR PATEL UNIVERSITY

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B. Sc. (5th Semester) Examination - December 2020

US05CINV23 (Instrumentation - Vocational)

(8-BIT MICROPROCESSOR PROGRAMMING AND APPLICATION-I)

Day and Date: Monday, 28/12/2020

Time: 02:00 pm to 04:00 pm

Maximum Marks: 70**Que 1 Multiple choice type questions.****[10]**

- 1 SUB M is _____ byte of instruction.
(A) 1 (C) 2
(B) 3 (D) 4
- 2 The decimal equivalent of FA_H is _____.
(A) 254 (C) 250
(B) 255 (D) 140
- 3 _____ is 16-bit register in 8085 microprocessor.
(A) Stack pointer (C) Accumulator
(B) Flag register (D) DMA
- 4 MVI is _____ byte of instruction.
(A) 1 (C) 3
(B) 2 (D) 4
- 5 _____: Rotate accumulator right.
(A) RAR (C) RAL
(B) RLC (D) RRC
- 6 CALL and RET are _____ type instructions.
(A) Logical (C) Branch
(B) Arithmetic (D) Data transfer
- 7 8085 microprocessor has total _____ interrupts.
(A) 2 (C) 4
(B) 3 (D) 5
- 8 _____ is used to complement the content of accumulator.
(A) ANA A (C) CMA
(B) XRA A (D) ANI 45_H
- 9 8085 microprocessor system requires _____ volt DC power supply for its operation.
(A) 05 (C) 15
(B) 10 (D) 20
- 10 JNZ is _____ byte instruction
(A) 1 (C) 3
(B) 2 (D) 4

Que 2 Fill in the blank and True-False.**[08]**

- 1 To correct the programme _____ technique is used.
- 2 8085 microprocessor is _____ -bit processor.
- 3 DCX B instruction decrements the content of _____.
- 4 RAL instruction used to _____ the content of accumulator.

[1]

[P.T.O.]

- 5 The data bus of 8085 microprocessor contains 16-bit (TRUE/FALSE).
- 6 JC is conditional instruction (TRUE/FALSE).
- 7 In 8085 microprocessor, accumulator is 8-bit register (TRUE/FALSE).
- 8 RET is one-byte Instruction (TRUE/FALSE).

Que 3 Short answer type questions (Attempt any Ten).

[20]

- 1 List pins of interrupt control section of 8085 microprocessor.
- 2 Define static and dynamic debugging.
- 3 State characteristics of logical instruction.
- 4 Briefly explain function of ALU.
- 5 Why data bus is bi-directional in 8085 microprocessor?
- 6 State different arithmetic instructions.
- 7 Differentiate: INR and DCR instructions.
- 8 Define: program and software.
- 9 Explain RRC and RLC with illustration.
- 10 Explain briefly looping and counting techniques.
- 11 State different addressing modes of 8085 microprocessor.
- 12 Explain HLT instruction.

Que 4 Long answer type questions (Attempt any Four)

[32]

- 1 Explain different arithmetic instructions with suitable illustration for each.
- 2 Draw the architectural block diagram of 8085 microprocessor and explain it in detail.
- 3 Discuss the concept of bus timing and generating the control signals in 8085 microprocessor system.
- 4 Give classification of 8085 instructions. Explain in detail.
- 5 Write a programme to load any two hexadecimal numbers in register D and E respectively, now add both the numbers, if sum is greater than FF_H display 01_H at output port 01_H, otherwise display the sum.
- 6 Discuss different logical instructions with suitable illustration for each.
- 7 Sixteen bytes are stored in memory locations starting from XX50_H to XX5F_H. Write an assembly language programme to transfer the entire block of data to new memory locations starting from XX70_H.
- 8 Discuss different additional data transfer instructions and 16-bit arithmetic instructions.

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