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SARDAR PATEL UNIVERSITY

Vallabh Vidyanagar - 388120

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.

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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