[95]

SARDAR PATEL UNIVERSITY
B.Sc. (5ᵗʰ Semester) Examination
Electronics
US05CELE23 -
8-bit microprocessor programming and applications
MONDAY

DATE: 28/12/2020   TIME: 2:00 P.M. TO 4:00P.M.

Total Marks: 70

Q.1 Multiple choice questions.   [10]

1. Bus is_____.
   (a) Group of bytes   (b) group of data bits   (c) group of line

2. In 8085 microprocessor address lines are_____
   (a) 16   (b) 15   (c) 12

3. Instructions can be classified according to their _____.
   (a) Word size   (b) Number size   (c) LSB and MSB

4. To clear to the content of accumulator _____instruction is used.
   (a) CMA   (b) SUB A   (c) ORA A

5. To reset the system _____ Key is pushed.
   (a) Reset   (b) Enter   (c) Shift

6. Decrement the content of register pair by one is_____
   (a) INX R_p (b) DCX R_p (c) DCR B

7. The techniques which is use to repeat the task is called_____
   (a) Looping   (b) Indexing   (c) Immediate addressing

8. Branch operations can _____
   (a) Change the sequence of program
   (b) Change the addressing mode
   (c) Change the low order and high order address

9. _____instruction is use to increment the content of memory location by one.
   (a) ADD M   (b) INR M   (c) DCR M

10. Rotate accumulator right instruction is _____
    (a) RLC   (b) RAR   (c) RRC

Q.2 State whether the following   statements are True or false.   [08]

1. Accumulator is 8 bit register. True/False

2. In the data transfer instruction the data is copied from source to destination. True/False.

3. In one byte instruction the opcode and operand are in the same byte. True/False.
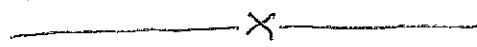
[P.T.O.]

[1]

4. In 8085μp SUI instruction has two bytes size. True/False.
5. The content of accumulator before CMA instruction is A5H its content after execution of CMA is 5AH. True/False.
6. Increment the content of register pair by one is INX Rp. True/False.
7. ADD M instruction is used to add the content of memory location with the content of accumulator. True/False.
8. RLC instruction is used to divide the 8 bit hexadecimal number by 2. True/False.

Q.3 Answer any **TEN** questions in brief.   [20]

1. Draw the flag format of 8085.
2. Define program and software.
3. What are the inputs of ALU?
4. Which instructions use to increment and decrement the content of specified register?
5. Define opcode and operand.
6. Which instructions are used to mask the higher nibble and lower nibble of 8 bit data?
7. Draw the flow chart of continuous loop.
8. How many types of branch instructions are there, list them?
9. List the instruction which transfer the data from memory to microprocessor.
10. State different techniques of dynamic debugging.
11. List the addressing modes.
12. List the arithmetic instructions related to memory.

Q.4 Long answer questions [Attempt any four out of eight]

[I] Draw the block diagram of 8085μp microprocessor and explain each block in detail.   [08]
[II] Draw the pin out diagram of 8085 microprocessor. Explain in detail the functions of each pin.   [08]
[III] Discuss in detail the arithmetic instructions with necessary examples.   [08]
[IV] Discuss in detail the data transfer instructions with necessary examples.   [08]
[V]Discuss in detail the additional data transfer and 16 bit arithmetic instructions.[08]
[VI] Discuss in detail the programming techniques.   [08]
[VII]Explain compare instructions in detail.   [08]
[VIII] Six bytes of data are stored in memory locations starting at XX50H. Add all the data bytes. Use register B to save any carries generated while adding the data bytes. Display the entire data sum at two output ports. Draw the necessary flow chart with program.   [08]

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[2]