

SARDAR PATEL UNIVERSITY
BSc (VI Sem.) Examination
Wednesday, 10th April 2013
3 - 6 pm
US06CELE03 - Electronics

8-bit Microprocessor programming and Applications II

Total Marks: 70

Note: Figures to the right indicate full marks.

- Q.1 Multiple Choice Questions: [10]
- (1) The beginning of the stack is defined in the program by using the instruction _____.
 (a) LXI H, 16bit (b) LXI SP, 16bit (c) LXI B, 16bit
 - (2) RET is _____ instruction.
 (a) One byte (b) Two bytes (c) Three bytes
 - (3) The full form of ASCII code is _____.
 (a) American Standard Code for information interchange
 (b) Alphanumeric Code
 (c) American Storing information
 - (4) To design counters and Time delays _____ and _____ techniques are used.
 (a) Nesting and Subroutine
 (b) Indexing and Multiple ending subroutine
 (c) Looping and Counting
 - (5) If A=F9 then after execution of ANI OFH, the content of Accumulator is _____.
 (a) 09 (b) FO (c) OF
 - (6) Consider A=26H after execution of RRC four times the content of A=_____.
 (a) 02H (b) 62H (c) 52H
 - (7) CZ 16 bit is _____.
 (a) Call Subroutine if z=0
 (b) Call Subroutine if CY=0
 (c) Call Subroutine if z=1
 - (8) To set the carry flag _____ instruction is used.
 (a) PCHL (b) STC (c) CMC
 - (9) The conversion from FFH= ()₁₀.
 (a) 255₁₀ (b) 155₁₀ (c) 355₁₀
 - (10) A down counter counts in _____ order.
 (a) Ascending order
 (b) Descending order
 (c) Both a and b

Q.2 Answer **any ten** questions in brief. [20]

- (1) List the Arithmetic instructions related to memory.
- (2) Write a program to load 4CH in Register D. Multiply 4CH by 2 using rotate instruction. Specify the result.

- (3) What is Subroutine? To implement subroutine which instructions are required?
- (4) For common cathode seven segment display, find out the equivalent Hex code for 0 to 9 digits.
- (5) Explain EI and DI briefly.
- (6) Draw the flow chart of counter and time delay using one Register.
- (7) How many ways we can reset the flip-flop in interrupt process?
- (8) Write a program to enable all the interrupts in 8085 system.
- (9) Write down the Subroutine to convert ASCII Hex to Binary.
- (10) Write a short note on ASCII Code.
- (11) List the instructions which are used to clear the content of Accumulator.
- (12) Which instructions are used to retrieve the data from the stack?

Q.3

- (a) Explain rotate instructions in detail. [06]
- (b) Write a program to load 6CH in Register C. Rotate the content of register C. Save the result at location 8906. Specify the result. [04]

OR

Q.3

- (a) Explain compare instructions in detail. [06]
- (b) Write a program to load 55H in Register C. Compare 55H with 0AH. Find the content of Accumulator and find the status of flags. [04]

Q.4

- (a) Explain the similarities and differences between CALL and RETURN with PUSH and POP. [06]
- (b) Explain advance subroutine concept. [04]

OR

Q.4

- (a) Explain STACK instructions in detail. [06]
- (b) Explain conditional CALL and RETURN instructions. [04]

Q.5

- (a) Write a program to convert 2 digit BCD number to binary number. [06]
- (b) Write a main program with subroutine to convert Binary number to ASCII Hex code conversion. [04]

OR

Q.5

- (a) Write a main program and subroutines to convert three packed BCD to seven segments LED CODE Conversion. [06]
- (b) Write a program to perform BCD subtraction between two BCD numbers. [04]

Q.6

Explain 8085 Vectored Interrupt. [10]

OR

Q.6

- (a) Explain SIM and RIM in detail. [04]
- (b) Write the eight different steps for the execution of 8085 interrupts. [06]

* * *