[A-78]

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SARDAR PATEL UNIVERSITY

T.Y. B.Sc. Electronics

SEM – VI, April 2016

8-Bit microprocessor programming and application -II

SUB CODE: US06CELE03

DATE: 1st April 2016

DAY: Saturday

TIME: 2:30 PM TO 5:30 PM

TOTAL MARKS: 70

Q. 1 Choose the correct answer. [10]

(1) RET is _____ instruction.
- (A) One byte
- (B) Three byte
- (C) Two byte
- (D) Four byte

(2) Maximum time delay using single register program is _____.
- (A) 1 sec.
- (B) 1.8 ms
- (C) 1.8 sec
- (D) None of above

(3) Rotate accumulator right instruction is _____.
- (A) RLC
- (B) RET
- (C) RAR
- (D) None of above

(4) Counter program is used to _____.
- (A) Counting
- (B) Masking
- (C) Stacking
- (D) None of above

(5) To design counter and time delays_____ and _____ techniques are used.
- (A) Nesting, subroutine
- (B) Debugging, indexing
- (C) Looping , counting
- (D) None of above

(6) If accumulator (A) = 39 H, after execution of ANI F0, the contain of Accumulator is _____.
- (A) 30 H
- (B) 39 H
- (C) 03 H
- (D) None of above

(7) To set the carry flag _____ instruction is used.
- (A) PCHL
- (B) STC
- (C) CMC
- (D) None of above

(8) _____ is unconditional jump instruction.
- (A) JNZ
- (B) JMP 2F0F H
- (C) JNC
- (D) None of above

(9) The decimal equivalent of FD_H is = _____
- (A) 532
- (B) 235
- (C) 253
- (D) None of above

(10) A down counter counts in _____ order.
- (A) Ascending
- (B) Both A and B
- (C) Descending
- (D) None of above

Q.2 Answer the following.(attempt any ten, each two marks) **[20]**

(1) List arithmetic instruction related to memory in 8085 µp.
(2) What is use of counter and delay in program?
(3) Which instructions are used to store and retrieve data from STACK?
(4) Define RAR and RRC instruction.
(5) What is ASCII code? Explain briefly.
(6) What do you mean by debugging?
(7) Define T- states in 8085 µp.
(8) What is subroutine? State its instruction.
(9) Draw the flow chart of counter and time delay using single register.
(10) Write a program to load 4C H in register D, multiply 4C H by 2 using rotate instruction. Specify the result.
(11) Explain EI and DI briefly.
(12) How many ways we can reset the flip –flops in interrupt process?

Q.3 **(A)** Explain rotate instruction in detail. **[05]**
(B) Explain compare instruction in detail. **[05]**

OR

Q.3 A 15 byte of data are stored in memory location starting at XX60 H. Write a program to add all these data bytes and save the carry generated in a register. Display the sum at output PORTS. **[10]**

Q.4 **(A)** Explain STACK instruction with illustration. **[05]**
(B) Discuss CALL and RETURN instruction. **[05]**

OR

Q.4 **(A)** Write a program to count continuously in hexadecimal from AF_H to 00_H in system with 1 micro second clock period. Setup time delay of 0.8 millisecond between each count. Display the count at output PORT. (Take no. of loop T- state =15) **[10]**

Q.5 Write program to convert a BCD number stored in memory to its equivalent binary number and save the answer in output buffer memory. **[10]**

OR

Q. 5 Write program to convert a BINARY number stored in memory to its equivalent unpacked BCD number and save the answer in output buffer memory. **[10]**

Q. 6 What do you mean by interrupt in 8085 µp system? List priority of interrupts and Discuss vectored interrupt in detail. **[10]**

OR

Q. 6 A set of ten pack BCD number is stored in memory location starting at XX00 H. write a program with subroutine to add all these numbers in BCD if carry is generated save it in register B after adjusting it for BCD. **[10]**