5 C

(48/A-24) SEAT No._____ **No. of Printed Pages : 2**

SARDAR PATEL UNIVERSITY

B.Sc. (6th Semester) Examination

Saturday, 31st March 2018

10:00 am to 01:00 pm

Electronics

US06CELE03- 8-bit Microprocessor programming and applications

Total Marks : 70

Q.1 Multiple choice questions. [10]

1. _____instruction is used to increment the content of memory location by one.
   (a) INR M (b) ADD M (c) DCR M
2. Rotate Accumulator right instruction is _____.
   (a) RLC (b) RRC (c) RAR
3. _____ is the conditional jump instruction.
   (a) JNC (b) JUMP 2050 (c) JUMP
4. The stack is shared by the _____and the_____.
   (a) CPU, Software (b) Programmer, Microprocessor
   (c) Interpreter, Compiler
5. If Accumulator A equal to 59 H, after execution of ANI F0 H the content of accumulator is_____.
   (a) 05 H (b) 50 H (c) 59 H
6. Maximum time delay using single register program is _____.
   (a) 0.18 ms (b) 18 ms (c) 1.8 ms
7. To convert Binary number into BCD, if number is greater than 100, then Binary number is subtracted by_____ and _____.
   (a) 100, 1 (b) 100, 10 (c) 1000, 100
8. The full form of ASCII code is_____.
   (a) American Standard Code for Information Interfacing
   (b) American Standard Code for Information Interchange
   (c) American Standalone Code for Information Interchange
9. RET is _____ byte instruction.
   (a) 3 (b) 2 (c) 1
10. A Non- maskable interrupt is known as _____.
    (a) MNI (b) NNI (c) NMI

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

1. Define RAR and RLC instructions.

[P.T.O]

2. Define T states in microprocessor.
3. List the arithmetic instructions related to memory in 8085 microprocessor.
4. What is subroutine ? To implement subroutine which instructions are required.
5. Define counter and time delay.
6. Draw the flow chart of time delay for two loops.
7. State different techniques of dynamic debugging.
8. Write down the subroutine to convert ASCII Hex code to Binary code.
9. Which instructions are used to store and retrieve data from stack ?
10. How many ways we can reset the flip-flop in interrupt process ?
11. Write instructions to enable all the interrupts in an 8085 microprocessor.
12. Define DAA instruction.

Q.3 (a) Explain i) CMP R ii) CMP M iii) CPI 8-bit data. [07]

(b) How microprocessor performs the compare instruction ? [03]

OR

Q.3 (a) Explain Rotate instructions in detail. [07]

(b) State the applications of rotate instructions. [03]

Q.4 (a) Write a program to count continuously in hexadecimal from FFH to 00H in a system with a 0. 5 µs clock period. Use register C to set up a 1 ms delay between each count and display the numbers at one of the output port. (Given Count = 8C H) [05]

(b) Write a program to count from 0 to 9 with a 1 sec delay between each count. At the count of 9, the counter should reset itself to 0 and repeat the sequence continuously. Use register pair HL to set up the delay and display each count at one of the output ports. (Given Count = A2C2 H) [05]

OR

Q.4 (a) Explain stack instructions in detail. [06]

(b) Explain the similarities and differences between PUSH & POP with CALL & RETURN instructions. [04]

Q.5 Write a main program and subroutines to convert BCD to seven segment LED CODE conversions. [10]

OR

Q.5 Write a program to convert BCD to Binary number. [10]

Q.6 Explain EI, DI, SIM, RIM instructions in detail. [10]

OR

Q.6 Explain 8085 Vectored Interrupts. [10]