SUBJECT - MICROCONTROLLER

SUBJECT CODE - NEC-022

SHORT ANSWERS :

1. Which registers are allowed to be used for register indirect addressing mode if the data is in On-chip RAM?
2. State any two differences between microprocessor and microcontroller.
3. Explain about the instruction DJNZ.
4. What does the Mnemonics “LCALL” and “ACALL” stands for?
5. What is the output of the program ?

```
MOV R0, A
XRL A, #3FH
XRL A, R0
```

6. Explain the function of following directives :
   a. DB
   b. EQU
   c. ORG
   d. DATA
   e. END
   f. CODE
7. Translate the following :
   a. Main features of 8051 microcontroller,
   b. Comparison of 8051 family members.
8. Explain the DAA instruction with suitable example.
9. Explain the features of pins of 8051.
   a. ALE
   b. PSEN
   c. EA
10. Explain the significance of SFRs in 8051 microcontroller.
11. What is Von-Neumann architecture ?
12. Explain the 16-bit registers DPTR of 8051 microcontroller.

LONG ANSWERS :

13. Explain RISC and CISC processor.
14. Explain the PSW of 8051 microcontroller with example for each bit.
15. Explain the program memory and data memory structure of 8051 microcontroller.

16. Explain the memory organization in 8051 controller.
17. Explain the role of stack and stack pointer in 8051 microcontroller.
18. Explain the addressing modes of 8051 microcontroller with suitable examples.
19. Explain the steps to be perform to create, assemble and run 8051 assembly language program. Using block diagram.

PROGRAMS :

20. WAP to transfer data from memory block B1 to memory block B2.
21. WAP to load accumulator with value 55H and complement it 70 times.
22. WAP to copy the value 55H into RAM memory location 40H to 45H using register indirect addressing with a loop.
23. WAP to clear the accumulator and add 3 to the accumulator 10 times.
24. WAP for 8051 microcontroller to multiply two 8-bit numbers stored in external memory locations 3000H and 3001H. Send the result on port 1 and port 3.
25. Write an assembly program in 8051 to add two 16-bit numbers stored in external memory. After addition store the results in internal data memory.