Question Bank (G scheme)

Name of subject: EMBEDDED SYSTEM

Subject code : 17658 **Unit Test: I**

Semester : SIXTH **Course : IS/IE/EJ**

CHAPTER 1 :ARCHITECTURE OF MICROPROCESSOR AND MICROCONTROLLER

3 Marks

1. Draw the format of the following SFR.
   A) TCON
   B) SCON
   C) IP
2. Draw the format of the following SFR.
   A) TMOD
   B) IE
   C) PSW
3. Draw the architecture of 89C51 microcontroller.
4. State the alternate function of Port 3 pins.
5. List the interrupt sources of 89C51 with their vector address.
6. Compare RISC and CISC architecture.

4 Marks

7. Describe the following in brief.
   A) RISC
   B) CISC
   C) DSP
   D) Multicore processor.
8. Compare Von Neumann and Harvard architecture.
9. Draw the internal memory organization of 89C51 and explain.

CHAPTER 2: PROGRAMMING MICROCONTROLLER 89C51 WITH 'C'

3 Marks

10. Compare Assembly language versus embedded c .(Any 3 points)
11. State and explain program downloading tools.
12. State any three features of ICE and IDE.

4 Marks

13. State the function of following.
    A) Cross Compiler
    B) Emulator
    C) Debugger
    D) JTAG Port
14. What is an IDE & what is the selection criterion of IDE.
15. Program (any one)
    a) Write an 8051 C program to toggle only bit P2.4 continuously without disturbing the rest of the bits of P2.
    b) Write an 8051 C program to transfer the message "YES" serially at 9600 baud,8-bit data ,1stop bit. Do this continuously.
    c) Assume that a 1 Hz external clock is being fed into pin T0 (P3.4).write a c program for counter 0 in mode 1 to count the pulses and display the TH0 and TL0 registers on P2 and P1, respectively.
16. Program (any one)
    a) Write an 8051 C program to toggle all bits of P2continuously every 500 ms .Use timer 1 mode 1 to create the delay.
    b) Write an 8051 C program to toggle all the bits of P0,P1,and P2 continuously with a 250 ms delay. Use the Ex-OR operator.
    c) Write an 8051 C program to get a byte of data from P1, wait ½ second, and then send it to P2.

CHAPTER 3: COMMUNICATION PROTOCOLS

3 Marks

17. Compare Serial and Parallel communication .(any three points)
18. Draw the framing of asynchronous serial communication and explain.
19. Explain the need of communication interface in embedded system.
20. State the C data types provided by KEIL and SPJ system to support embedded system application.

4 Marks

21. Compare synchronous and asynchronous communication.
22. Draw pin out of RS232 and describe the pin function.
23. Draw and explain the interfacing of RS232 with 8051 using MAX 232.
24. Draw and explain the interfacing of RS485 with 8051 using MAX 485.
25. Draw pin configuration of MAX 232 and explain.