PART A (25 Marks)

1. Why microcontroller has chosen for embedded system?
2. Explain the sample of requirement form
3. Draw the bit configuration of any one special function register
4. Differentiate XCH and XCHD instructions.
5. What is an interrupt? Mention different interrupts of 8051 based on their priority?
6. Explain priority inversion
7. Compare and contrast message queues and pipes
8. List out the laboratory tools that are used in embedded system
9. What are the data types does the SHARC support?
10. Explain bus protocols.

PART B (5x10 = 50 Marks)

11. a) Discuss the challenges and difficulties in the design of embedded computing system.
    b) Give the bit configuration of any three Special Function Registers.
12. a) Illustrate the addressing modes of 8051 microcontroller.
    b) Write a program to add two 16-bit numbers. The numbers are 3CE7H and 3B8DH. Place the sum in R7 and R6; R6 should have the lower byte.
13. a) Assume that register A has packed BCD. Write a program to convert ASCII to packed BCD.
    b) Explain different display devices.
14. a) What is a shared data problem? How to solve it?
    b) What are the standard features of time functions and events in RTOS.
15. a) Discuss soft real-time and hard real-time systems.
    b) Give the procedure to get the embedded software into target system.
16. a) Explain two modes of Logic Analyzers.
    b) Give the advantages of Logic Analyzers over emulators.
17. Compare and contrast:
   a) ARM processor Vs SHARC processor
   b) CAN bus Vs 12C bus

****