**Short Answer Type Question**

1. What is the purpose of Address Bus and Data Bus in Microcontroller/processor?
2. Translate the following :

a. Main features of 8051 microcontroller,

b. Comparison of 8051 family members.

1. Draw the block diagram of MC8051.
2. Write the features of MSP430x5xx series microcontroller.
3. What is Watchdog Timer.
4. What are the features of Timer\_A & Timer\_B?
5. What are the features of Real Time Clock?
6. What is USCI?
7. Differentiate between synchronous and asynchronous communication.
8. What is ADC and DAC?
9. Draw the block diagram of Comparator\_A.
10. Draw Watchdog Timer Register format.
11. Write the features of UCS.
12. What is Sigma Delta?
13. What is pull up/down registers.
14. What are the features of MSP430 GPIO ports.
15. What is I2C?
16. Draw Princeton architecture.
17. Explain the Flag format of 8051 microcontroller.
18. What is SPI?
19. What is an interrupt in MSP430.
20. What is baud rate?
21. What are different Timer counting modes?

**Long Answer Type Question**

1. Explain the different addressing modes of 8051 microcontroller.
2. Differentiate between CISC and RISC architecture.
3. Explain MSP430x5xx Architecture with the help of suitable diagram.
4. Draw MSP430 CPU block diagram and also explain its various registers.
5. Draw and explain the Memory Mapped Of MSP430.
6. Explain the addressing modes of MSP430 microcontroller.
7. Describe the system clock of MSP430.
8. Write about various Low Power Modes Of MSP430 microcontroller.
9. Explain briefly about watchdog timer.
10. With the help of block diagram explain ADC10.
11. Explain the register format of Comparator\_A.
12. Explain the interrupt flow in MSP430 with diagram.
13. Explain USCI : UART Mode of MSP430.
14. Explain the master and slave mode of SPI.
15. What is USCI : I2C Mode of MSP430.
16. Differentiate between Von-Neumann and Harvard Architecture.
17. Explain Real Time Clock.
18. What are different RTC modules? Explain their features.
19. Explain the transfer mode of DMA controller. Also explain its different addressing modes.
20. Write a short note on data acquisition system.
21. Write a short note on external memory interface with MSP430 microcontroller.
22. Draw and explain the block diagram of Basic Timer\_1 of MSP430. Also explain the bit pattern of various timer registers.
23. Explain the wired and wireless network.
24. Write a short note on following :
25. IOT
26. WSNs
27. NFC
28. ZigBee
29. Bluetooth
30. Wi-Fi