

13. Recall the option that matches the function of the instruction `CJNE A,#00001111b, ROW1` 1 K2 CO4
 (a) It masks the bit and then jumps to the label where ROW1 is written.
 (b) It makes the value of the accumulator 0FH and then jumps at the address where ROW1 label is written.
 (c) It compares the value of the accumulator with 0FH and jumps to the location where ROW1 label is there if the value becomes equal.
 (d) It compares the value of the accumulator with 0FH and jumps to the location where ROW1 label is there if the value is not equal.
14. In the keypad programming the programmer needs to _____ for identifying which key is pressed while interfacing with 8051. 1 K2 CO4
 (a) ground all the pins at a time (b) ground any two pins at a time
 (c) ground the pins one by one (d) connect all the pins to power supply
15. Which motor rotates from 0 to a maximum of 180 degrees 1 K1 CO4
 (a) Continuous motion servo motor (b) Standard/Limited Motion servo motor
 (c) Stepper motor (d) None of the mentioned
16. The symbol '#' represent in the instruction `MOV A, #55H` means..... 1 K1 CO4
 (a) Direct datatype (b) Indirect data type (c) Indexed data type (d) Immediate data type
17. Which of the following is not a 32 bit processor? 1 K1 CO5
 (a) Windows 7 (b) Linux (c) Windows 8 Vista (d) 8086
18. Evaluate the statement about the CISC processor. 1 K2 CO5
 1. It has relatively few instructions.
 2. It can have relatively few addressing modes.
 3. CISC stands for Complex Instruction Set Computer.
 (a) All statements are true (b) Only 1st and 2nd statement are true
 (c) All statement are false (d) Only 3rd statement is true
19. Which part of the computer is directly involved in executing the instructions of the computer program? 1 K2 CO5
 (a) Processor (b) RAM (c) ROM (d) Hard disk
20. Pipe-lining is a unique feature of _____ 1 K1 CO5
 (a) CISC (b) RISC (c) ISA (d) ANNA

PART - B (10 × 2 = 20 Marks)

Answer ALL Questions

21. List the general-purpose registers of 8085 microprocessor. 2 K1 CO1
22. Compare the instructions `CMP` and `SUB`. 2 K2 CO1
23. What are register banks in an 8051 microcontroller? 2 K1 CO2
24. Find the addressing modes for the instructions below 2 K2 CO2
`ADD A,R7`
`ADD A,55H`
`MOV A,@R0`
`MOVC A,@A+DPTR.`
25. Explain the cascaded mode of the 8259 programmable interrupt controller. 2 K2 CO3
26. State the functions of IC 8254. 2 K1 CO3
27. State the need for a key debouncing circuit in the keyboard interface. 2 K1 CO4
28. Deduce some examples of input devices to microprocessor-based systems. 2 K1 CO4
29. What are the characteristics of an Embedded system? 2 K1 CO5
30. Illustrate the concept of pipelining with an example. 2 K2 CO5

PART - C (6 × 10 = 60 Marks)

Answer ALL Questions

31. a) What are interrupts? Explain the interrupt Structure of 8085 processor. 10 K2 CO1
OR
b) Explain the timing diagram for the instruction MVI C, #35 H. 10 K2 CO1
32. a) Draw and explain the architecture of the 8051 microcontroller. 10 K2 CO2
OR
b) Explain Data transfer and arithmetic instructions of 8051 Microcontroller. 10 K2 CO2
33. a) Draw and explain the functional block diagram of 8254 timer. 10 K2 CO3
OR
b) Explain the interfacing of DAC with 8051 or 8085 with a neat diagram and write a program for generating any typical waveform. 10 K2 CO3
34. a) Design and illustrate a block diagram for interfacing a stepper motor with an 8051 microcontroller. Additionally, provide an assembly language program to control the stepper motor through this setup. 10 K3 CO4
OR
b) Illustrate the process of interfacing an LCD display with an 8051 microcontroller and provide a detailed assembly language program for displaying characters on the LCD. 10 K3 CO4
35. a) Compare the architectures of RISC and CISC processors and illustrate their advantages and disadvantages in modern computing systems. 10 K2 CO5
OR
b) Explain the Architecture of a 16 bit Microprocessor in detail. Also explain its features and Applications. 10 K2 CO5
36. a) i) Explain an Assembly Language Program using 8051 microcontroller to perform multiplication. 5 K2 CO4
ii) Discuss about the types of embedded systems. 5 K2 CO5
OR
b) i) Illustrate a block diagram for interfacing a servo motor with an 8051 microcontroller. 5 K2 CO4
ii) Explain various functional blocks of embedded systems. 5 K2 CO5