

- Q.27 What is Ladder programming? Draw its components.
- Q.28 Give four examples of conditional instructions of 8051 microcontroller?
- Q.29 Enlist some of the comparison instructions used in PLCs programming.
- Q.30 Explain different interrupts available in 8051.
- Q.31 Describe main features of 8051 microcontroller.
- Q.32 Write the basic features of PIC microcontrollers.
- Q.33 Differentiate the function of Assembler. Compiler and interpreter.
- Q.34 Write a short note on Simulator.
- Q.35 Discuss the procedure of interfacing stepper motor with microcontroller.

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. (2x10=20)

- Q.36 What do you mean by addressing modes? What are the addressing mode of 8051. Explain it with examples.
- Q.37 Discuss in detail, the timer's operation of 8051 microcontroller.
- Q.38 Write a short note on any two of the following
- Functions of assembler directives
 - PUSH instruction
 - Instruction format of microcontroller

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**6th Sem / Elect. Eltx., Mechatronics, GE, Power
Station Engg. Elect. & Eltx. Engg.
Sub.: Programmable Logic Controllers &
Microcontrollers Mic. Cont. & PLCs**

Time : 3Hrs.

M.M. : 100

SECTION-A

Note: Multiple choice questions. All questions are compulsory (10x1=10)

- Q.1 What is the standard form of FBD?
- Functional block diagram
 - First block diagram
 - Functional block division
 - None of the above
- Q.2 _____ is an example for input modules in programmable logic controller.
- Stepper motor
 - Push buttons
 - Lamps
 - None of the above
- Q.3 Addressing is which the location of data is contained within the mnemonics is known as _____
- Immediate addressing
 - Implicit addressing
 - Register addressing
 - Direct addressing
- Q.4 Which addressing mode is used in instruction LXI H, 4500 H?
- Direct
 - Indirect
 - Register
 - Implicit

- Q.5 What is the bit size of 8051 microcontroller?
- 4 bit
 - 8 bit
 - 16 bit
 - 32 bit
- Q.6 EQU, LES, LEQ instructions are the examples of which of the following instructions?
- Comparison instructions
 - Sequencer instructions
 - Data handling instruction
 - Composite instructions
- Q.7 What is the function of the TMOD register?
- To set various operation models of timer/counter
 - To load the count of the timer
 - Is used to interrupt the timer
 - None of the above
- Q.8 Which of the following interrupts has the highest priority?
- RST 5.5
 - TRAP
 - RST 7.5
 - INTR
- Q.9 Which of the following is a type of microcontroller interrupt?
- INT0
 - INT1
 - TFQ
 - All of the above
- Q.10 The internal RAM memory of the 8051 is:
- 32 bytes
 - 64 bytes
 - 128 bytes
 - 256 bytes

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SECTION-B

Note: Objective type questions. All questions are compulsory. (10x1=10)

- Q.11 Define the term instruction cycle.
- Q.12 What is the purpose of DW directive?
- Q.13 Which interrupt has lowest priority?
- Q.14 What is the function of SCON instruction?
- Q.15 What is the full form of SIM?
- Q.16 What is the full form of SFR?
- Q.17 How many memory banks are used in internal memory of 8051?
- Q.18 What is the meaning of Mnemonic : XCH A, Rn?
- Q.19 What is the meaning of CTD instruction?
- Q.20 Draw the symbol of XIC.

SECTION-C

Note: Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)

- Q.21 Explain the different programming languages of PLC.
- Q.22 What are the uses of Timer? Explain different types of timers used in PLCs.
- Q.23 Explain working of Motor on-Off operation using ladder diagram programming.
- Q.24 Explain in brief the counters used in PLCs.
- Q.25 Explain memory structure and I/O structure of PLC's.
- Q.26 Write a short note on "Counters of 8051 microcontroller".

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