

- 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

No. of Printed Pages : 4 120962/105864/031065A
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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?
a) 4 bit b) 8 bit
c) 16 bit d) 32 bit
- Q.6 EQU, LES, LEQ instructions are the examples of which of the following instructions?
a) Comparison instructions
b) Sequencer instructions
c) Data handling instruction
d) Composite instructions
- Q.7 What is the function of the TMOD register?
a) To set various operation models of timer/counter
b) To load the count of the timer
c) Is used to interrupt the timer
d) None of the above
- Q.8 Which of the following interrupts has the highest priority?
a) RST 5.5 b) TRAP
c) RST 7.5 d) INTR
- Q.9 Which of the following is a type of microcontroller interrupt?
a) INTO b) INT1
c) TFQ d) All of the above
- Q.10 The internal RAM memory of the 8051 is:
a) 32 bytes b) 64 bytes
c) 128bytes d) 256 bytes

(2) 120962/105864/031065A

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 is 8051?
Q.18 What is the meaning of Mnemonic : XCHA, 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".

(3) 120962/105864/031065A