

3477
BOARD DIPLOMA EXAMINATION, (C-09)
MARCH/APRIL - 2019
DIPLOMA IN ELECTRICAL & ELECTRONICS ENGINEERING
DIGITAL ELECTRONICS AND MICRO CONTROLLERS
FOURTH SEMESTER EXAMINATION

Time: 3 Hours**Total Marks: 80**

PART - A (10 x 3 = 30 Marks)

Note 1: Answer all questions and each question carries 3 marks

2: Answers should be brief and straight to the point and shall not exceed 5 simple sentences

1. Draw the logic circuit of full adder using gates and write its truth table.
2. What are encoders and decoders?
3. List the different types of RAMs.
4. What is a counter? Define modulus of a counter.
5. What are the functions of the following 8051 pins?
a) \overline{ALE} b) \overline{EA} c) \overline{PSEN}
6. What is the difference between a Counter and a Timer?
7. Explain the DIV AB instruction with one example.
8. State the addressing mode of each of the following instructions.
 - a) MOV A, #30 H
 - b) MOV A, @R0
 - c) SUBB A, 56 H
 - d) MOVX A, @DPTR
 - e) RR A
 - f) ADD A, R1.
9. Explain LJMP instruction.
10. What is a flow chart? List any four symbols used while drawing a flow chart.

PART - B (5 x 10 = 50 Marks)

Note 1: Answer any five questions and each question carries 10 marks

2: The answers should be comprehensive and the criteria for valuation is the content but not the length of the answer

11. (a) Write about BCD code.
(b) Convert $A9FC_{16}$ into Octal number system.
(c) Divide 1111_2 by 11_2 .
12. (a) Explain the operation of NAND and NOR gates with truth tables.
(b) State and explain De-Morgan's theorems.
13. (a) Briefly explain the data movement in the following registers with block diagrams.
i) PISO ii) SIPO
(b) Explain the operation of 4 bit shift right register with diagram.
14. (a) Explain the operation of NAND latch with its truth table.
(b) Draw the circuit and explain the operation of D flip-flop with its truth table.
15. Explain the register structure of 8051 microcontroller.

16. Draw and explain the bit wise description of IE and IP registers.
17. a) List the major groups in the instruction set of 8051 along with two examples of each.
b) Classify the 8051 instruction set as per their length with one example of each.
18. Write an assembly language program along with comments to multiply two 8-bit numbers stored in the memory locations 2400H and 2401H and save the result at 2402H and 2403H.

- xxx -

*

*

WWW.MANARESULTS.CO.IN