

TED (15) 4264
(Revision 2015)

N19-01069

Reg.No.
Signature.

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANAGEMENT/
COMMERCIAL PRACTICE – OCTOBER/NOVEMBER -2019.

FOUNDATIONS OF COMPUTER HARDWARE

(Maximum Marks : 100)

[Time : 3 hours]

PART-A
(Maximum marks: 10)

Marks

I. Answer all questions in one or two sentences. Each question carries 2 marks.

1. What is ASCII?
2. Draw the logic symbol of XNOR gate.
3. Which are the main types of sequential circuits?
4. What is meant by the state of a sequential circuit?
5. List the segment registers in 8086 microprocessor.

(5x2=10)

PART - B
(Maximum Marks : 30)

II Answer any **five** of the following questions . Each question carries 6 marks.

1. Briefly explain the postulates of Boolean algebra.
2. Explain different number systems used in computers.
3. Design basic gates using NOR gates.
4. Describe about the multiplexer.
5. Explain the sequential circuits.
6. Design SR flip flop with NAND gates.
7. Explain the register organization in 8086 microprocessor.

[5x6 =30]

PART - C
(Maximum marks : 60)

(Answer one full question from each unit. Each full question carries 15 marks)

UNIT I

III (a) Convert the following into Binary.

(i) $(41.375)_{10}$ (ii) $(273.124)_8$ (iii) $(IC69.F2)_{16}$ (9)

(b) Briefly explain various binary codes. (6)

OR

IV Explain Karnaugh's map. Simplify the given Boolean function using Karnaugh's map

$$F(A,B,C,D) = \sum(0,1,2,4,6,8,9,12,13,14). \quad (15)$$

UNIT- II

V Explain about the full adder with truth table and logic circuit. (15)

OR

VI What is meant by a Decoder . Explain with circuit diagram and truth table. (15)

UNIT- III

VII With neat sketch explain J-K Flip Flop. (15)

OR

VIII Explain asynchronous counter. (15)

UNIT - IV

IX Draw the pin diagram of 8086 and explain minimum mode pins. (15)

OR

X (a) Describe the basic addressing modes in 8086 microprocessor. (9)

(b) Write an assembly language program to find the sum of 3 numbers. (6)
