



TED (10) – 3059

(REVISION — 2010)

<https://www.gptcthirurangadi.in>

Reg. No.

Signature

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/
MANAGEMENT/COMMERCIAL PRACTICE — OCTOBER, 2018

DIGITAL ELECTRONICS

[Time : 3 hours

(Maximum marks : 100)

PART — A

(Maximum marks : 10)

Marks

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

1. Define weighted code with example.
2. Define fan-in in logic gates.
3. Define propagation delay in logic family.
4. Define sequential circuits.
5. Write the type of ADCs.

(5×2 = 10)

PART — B

(Maximum marks : 30)

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

1. State and explain De-Morgan's theorems.
2. Simplify the Boolean expression.
$$Y = \prod (0,1,3,5,6,7,10,14,15).$$
3. Explain the race around condition.
4. Explain the working of full adder circuit using logic gates and truth table.
5. Explain the working of T flip-flop circuit with truth table.
6. Compare SDRAM and EDORAM.
7. Define accuracy, resolution and monotonicity.

(5×6 = 30)



PART — C

(Maximum marks : 60)

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

UNIT — I

- III (a) Do the following operation :
- (i) $(284)_{10}$ to Binary.
 - (ii) 010101-101010 (using 2's complement)
 - (iii) Convert $(6A2.3)_{16}$ into decimal.
 - (iv) 110101×110 .
- (b) What is mean by binary codes ? Give the list of binary codes.

OR

- IV (a) Draw the basic gates using NOR gates only.
- (b) Simplify using K'map and draw the logic circuit diagram.
- $$Y = ABCD + A\bar{B}\bar{C}\bar{D} + A\bar{B}C + AB$$

UNIT — II

- V (a) Explain the working of 8×1 Multiplexer with diagram.
- (b) Explain the circuit diagram of TTL inverter.

OR

- VI (a) Explain about BCD to seven segment decoder with diagram.
- (b) Compare positive and negative logics.

UNIT — III

- VII (a) Explain about JK flip-flop with diagram and truth table.
- (b) Explain the working of 3 bit ring counter.

OR

- VIII (a) Explain the working of 3-bit Asynchronous ripple counter.
- (b) Explain the working of right shift register with diagram.

UNIT — IV

- IX Draw and explain the working of R-2R ladder network DAC.

OR

- X (a) Explain the working of ROM with diagram.
- (b) Compare Flash ROM and NVRAM.