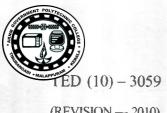
# https://mail.gptcthirurangadi.in



(REVISION - 2010)

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

- Answer all questions in one or two sentences. Each question carries 2 marks.
  - Define weighted code with example.
  - 2. Define fan-in in logic gates.
  - 3. Define propagation delay in logic family.
  - Define sequential circuits.
  - Write the type of ADCs.

 $(5 \times 2 = 10)$ 

#### PART — B

(Maximum marks: 30)

- II Answer any five of the following questions. Each question carries 6 marks.
  - State and explain De-Morgan's theorems. 1.
  - 2. Simplify the Boolean expression.

$$Y = T(0,1,3,5,6,7,10,14,15).$$

- 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.
- Compare SDRAM and EDORAM. 6.
- 7. Define accuracy, resolution and monotonicity.

 $(5 \times 6 = 30)$ 

[244]



Marks

### $\mathbf{PART} - \mathbf{C}$

(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) <sub>10</sub> to Binary.	
		<ul> <li>(ii) 010101-101010 (using 2's complement)</li> <li>(iii) Convert(6A2.3)<sub>16</sub> into decimal.</li> </ul>	
		(iv) $110101 \times 110$ .	8
	(b)	What is mean by binary codes? Give the list of binary codes.	7
		O <sub>R</sub>	
IV	(a)	Draw the basic gates using NOR gates only.	6
	(b)	s) Simplify using K'map and draw the logic circuit diagram.	
		$Y = ABCD + A\bar{B}\bar{C}\bar{D} + A\bar{B}C + AB$	9
		Unit — II	
V	(a)	Explain the working of 8×1 Multiplexer with diagram.	8
	(b)	Explain the circuit diagram of TTL inverter.	7
		OR	
VI	(a)	Explain about BCD to seven segment decoder with diagram.	9
	(b)	Compare positive and negative logics.	6
		Unit — III	
VII	(a)	Explain about JK flip-flop with diagram and truth table.	9
	(b)	Explain the working of 3 bit ring counter.	6
		$O_{R}$	
/III	(a)	Explain the working of 3-bit Asynchronous ripple counter.	9
	(b)	Explain the working of right shift register with diagram.	6
		Unit — IV	
IX	Dra	w and explain the working of R-2R ladder network DAC.	15
		OR	
X	(a)	Explain the working of ROM with diagram.	8
	(b)	Compare Flash ROM and NVRAM.	7