

TED (10) – 3061 (REVISION — 2010)

Reg. No	
Signature	

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

## LINEAR INTEGRATED CIRCUITS

[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 virtual ground.
  - 2. Define slew rate.
  - 3. What are active filters?
  - 4. Define capture range in PLL.
  - 5. Define voltage regulator.

 $(5 \times 2 = 10)$ 

## PART — B

(Maximum marks: 30)

- II Answer any five of the following questions. Each question carries 6 marks.
  - 1. Draw and explain the block diagram of an opamp.
  - 2. Explain zero crossing detector using opamp.
  - 3. Describe half wave precision rectifier.
  - 4. Draw the block diagram of 565 PLL IC.
  - 5. Explain with diagram differentiator using opamp.
  - 6. Draw the circuit of Audio power amplifier using LM 380.
  - 7. List the important features of 723 voltage regulator.

 $(5 \times 6 = 30)$ 

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Marks PART - C (Maximum marks: 60) (Answer one full question from each unit. Each full question carries 15 marks.) UNIT - I III (a) What are the characteristics of ideal opamp. (b) Explain electric parameters of opamp. 6 OR IV Explain the following circuits: (i) Inverting amplifier (ii) Non-Inverting amplifier (iii) Voltage follower. 15 Unit - II (a) Describe the working of full wave precision rectifier. V 8 7 (b) Explain RC phase shift oscillator. OR (a) Explain the working of astable multivibrator with wave forms VI 8 (b) With a neat diagram, explain 2<sup>nd</sup> order high pass filter. 7 UNIT - III VII (a) Describe frequency multiplier using PLL. 6 9 (b) Explain the functional block diagram of timer 555. VIII (a) List the applications of IC 555 timer. 8 (b) Draw and explain monostable multivibrator using 555. 7 UNIT - IV Briefly explain the block diagram of voltage regulators. 8 IX 7 (b) Draw and explain a fixed positive voltage regulator. OR 8 (a) Explain high voltage regulator using 723 IC. X

(b) Explain basic analog voltage divider circuit.