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. (5×2 = 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. (5×6 = 30)

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. 9

(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

V (a) Describe the working of full wave precision rectifier. 8

(b) Explain RC phase shift oscillator. 7

OR

VI (a) Explain the working of astable multivibrator with wave forms 8

(b) With a neat diagram, explain 2nd order high pass filter. 7

UNIT — III

VII (a) Describe frequency multiplier using PLL. 6

(b) Explain the functional block diagram of timer 555. 9

OR

VIII (a) List the applications of IC 555 timer. 8

(b) Draw and explain monostable multivibrator using 555. 7

UNIT — IV

IX (a) Briefly explain the block diagram of voltage regulators. 8

(b) Draw and explain a fixed positive voltage regulator. 7

OR

X (a) Explain high voltage regulator using 723 IC. 8

(b) Explain basic analog voltage divider circuit. 7