TED (10) – 3061
(REVISION — 2010)

Reg. No.....

Signature .....

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/ MANAGEMENT/COMMERCIAL PRACTICE — APRIL, 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 CMMR of Opamp.
2. Draw the frequency response of a High pass filter.
3. Define Lock-in range of PLL.
4. Define line regulation.
5. Write any two application of IC 555. (5×2 = 10)

PART — B

(Maximum marks : 30)

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

1. Draw the block diagram of general purpose Opamp.
2. Explain the concept of virtual ground.
3. Explain the circuit of summing amplifier using Opamp.
4. Draw the circuit of Astable multivibrator using opamp and explain.
5. Draw the functional block diagram of VCO.
6. Draw and explain an adjustable IC regulator circuit.
7. Draw the symbol of analog multiplier and write the applications. (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) Explain different types of packages used for Opamp. 9

(b) Define :
(i) Input bias current (ii) Input offset voltage (iii) Output offset voltage 6

OR

IV (a) Draw and explain the circuit of Non-inverting amplifier and derive the equation for voltage gain. 9

(b) What are the characteristics of an ideal Opamp ? 6

UNIT — II

V (a) Explain the circuit of phaseshift oscillator using Opamp. 8

(b) Explain a first order Low pass butterworth filter circuit. 7

OR

VI (a) Explain the circuit of full wave precision rectifier. 8

(b) Explain the circuit of a differentiator using Opamp. 7

UNIT — III

VII (a) Explain the block diagram of PLL. 8

(b) Draw the functional diagram of IC 555. 7

OR

VIII (a) With the help of circuit diagram and waveform explain the working principle of Astable multivibrator using Opamp. 10

(b) Write short notes on isolation amplifier. 5

UNIT — IV

IX (a) Draw and explain the circuit diagram of a high voltage regulator using IC 723. 8

(b) Draw the block diagram of dual power supply. 7

OR

X (a) Explain the functional block diagram of IC 723 voltage regulator. 10

(b) Draw the schematic of multiplier IC configured as divider. 5
