

TED (10) - 3061

(REVISION - 2010)

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Reg. No.....

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

 $(5 \times 2 = 10)$

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.

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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III

IV

V

VI

VII

VIII

IX

X

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