

TED (15/19) - 4042
(REVISION-2015/19)

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Reg.No.....
Signature.....

**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/
MANAGEMENT/COMMERCIAL PRACTICE, APRIL - 2024**

LINEAR INTEGRATED CIRCUITS

(Maximum Marks:100)

(Time: 3 Hours)

PART - A
(Maximum Mark : 10)

Marks

I. Answer **all** the questions in one or two sentences. Each question carries 2 marks.

1. Define CMRR.
2. What is input offset current?
3. List the applications of integrator.
4. Define lock range of a PLL.
5. State the principle of opto-couplers.

(5 x 2 = 10)

PART - B
(Maximum Mark: 30)

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

1. List the ideal characteristics of an op amp.
2. Describe the working of a first order Butterworth LPF.
3. Write short notes on differentiator circuit using op amp.
4. List the features of 555 timer IC.
5. Explain the general block diagram of a PLL.
6. Draw the block diagram of dual power supply.
7. List the advantages of SMPS.

(5 x 6 = 30)

P.T.O

PART – C

(Maximum Mark: 60)

(Answer **one full** question from each unit. Each full question carries 15 marks.)

UNIT - I

- III a) Draw the block diagram of an op-amp and explain each block. (8)
b) Explain the working of a Non inverting amplifier. (7)

OR

- IV a) Explain the different op-amp packages. (8)
b) With circuit diagram explain the working of an inverting amplifier. (7)

UNIT – II

- V a) Explain the working of a full wave precision rectifier. (8)
b) Describe the working of a Schmitt trigger circuit using op-amp. (7)

OR

- VI a) Explain the working of astable multivibrator circuit using op-amp. (8)
b) Explain the principle of an RC phase shift oscillator using op-amp. (7)

UNIT – III

- VII a) Draw the internal architecture of 555 timer and explain. (9)
b) Explain the block diagram of frequency multiplier using PLL. (6)

OR

- VIII a) Explain the block diagram of VCO 566. (8)
b) Explain the block diagram of FM demodulator using PLL. (7)

UNIT – IV

- IX a) Explain the basic block diagram of an SMPS. (8)
b) Explain the fixed positive voltage regulators. (7)

OR

- X a) Explain the functional block diagram of LM 723 voltage regulator. (8)
b) With circuit diagram explain the operation of adjustable voltage regulator using LM 317. (7)

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