

TED (15/19) - 3044
(REVISION-2015/19)

A24 - 7674

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

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

ELECTRONICS DEVICE AND 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. List the different transistor biasing circuits.
2. List the applications of tuned amplifier.
3. Explain the effects of negative feedback.
4. Define piezoelectric effect.
5. State the Barkhausen criteria for oscillation.

(5 x 2 = 10)

PART - B

(Maximum Mark: 30)

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

1. Draw and explain direct coupled amplifier.
2. Distinguish between voltage amplifier and power amplifier.
3. Derive the expression for the gain of feedback amplifier.
4. Explain the working of UJT relaxation oscillator.
5. Describe RC differentiator.
6. Explain Parallel resonant circuits.
7. Define Operating point.

(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 and explain the operation of single stage CE amplifier circuit. (9)
b) Define frequency response and bandwidth of an amplifier. (6)

OR

- IV (a) Explain the operation of transformer coupled amplifier. (9)
(b) Draw and explain emitter follower. (6)

UNIT – II

- V a) Define Quality factor? Write the relation between f_r , Q and bandwidth. (5)
b) Explain the classifications of power amplifiers. (10)

OR

- VI a) Explain Class B push pull power amplifier with circuit. (9)
b) Explain single ended power amplifier. (6)

UNIT – III

- VII a) Differentiate between positive feedback and negative feedback. (6)
b) Explain the type of negative feedback. (9)

OR

- VIII a) Compare BJT and FET. (6)
b) Explain the working principle and construction of DMOSFET. (9)

UNIT – IV

- IX a) Draw and explain the RC phase shift oscillator. (9)
b) Describe Colpitt's oscillator. (6)

OR

- X a) Draw the circuit diagram and waveforms of Astable multi vibrator. (9)
b) Explain the working of Schmitt trigger with circuit diagram and waveforms. (6)

.....