TED (15/19) 3044

(Revision-2015/19)

N22-07177

Reg.No............................

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DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANAGEMENT/ COMMERCIAL PRACTICE, NOVEMBER - 2022

ELECTRONIC DEVICES AND CIRCUITS

[Maximum marks: 100]   (Time: 3 Hours)

PART – A
Maximum marks : 10

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

1. Define DC load line.

2. List different methods of interstage coupling.

3. Compare BJT and FET.

4. Define Barkhausen criteria for oscillation.

5. Define UTP & LTP.   (5 x 2 = 10)

PART – B
Maximum marks : 30

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

1. Explain the working of Emitter Follower.

2. Explain the operation of single tuned amplifier with frequency response.

3. Describe classification of power amplifiers based on biasing.

4. Describe the types of negative feedback.

5. Describe the construction of N channel MOSFET.

6. List the advantages and application of crystal oscillator.

7. Describe the operation of Astable Multivibrator.   (5 x 6= 30)

PART – C
Maximum marks : 60

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

UNIT –I

III. (a) Draw the frequency response of RC coupled amplifier and explain.   (8)

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(b) List the advantages and disadvantages of direct coupled amplifier. (7)

OR

IV.(a) Explain the working of transformer coupled multistage amplifier. (8)

(b) Derive the expression for the voltage gain of two stages RC coupled amplifier. (7)

UNIT-II

V. (a) Distinguish between voltage amplifier and power amplifier. (8)

(b) Explain parallel resonant circuit and derive resonant frequency. (7)

OR

VI. (a) Explain the operation of class B push pull power amplifier. (8)

(b) Why heat sinks are necessary for power transistor. (7)

UNIT-III

VII.(a) Derive the expression for the negative feedback amplifier. (8)

(b) Explain the working of relaxation oscillator using UJT. (7)

OR

VIII.(a) Describe the construction of N channel JFET with diagram. (8)

(b) List the advantages and disadvantages of negative feedback in amplifiers. (7)

UNIT-IV

IX.(a) Explain the working of RC phase shift oscillator. (8)

(b) Prove that output of RC integrator circuit is proportional to the integral of the input. (7)

OR

X. (a) Explain the working of colpitts oscillator with circuit diagram. (8)

(b) Explain the working of Schmitt trigger with circuit diagram and waveforms. (7)

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