

**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANAGEMENT/  
COMMERCIAL PRACTICE, APRIL-2021**

**ELECTRONIC DEVICES AND CIRCUITS**

[Maximum marks: 75]

(Time: 2.15 Hours)

**PART – A**

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

1. Define operating point.
2. List the advantages of push pull amplifier.
3. Define negative feedback in amplifiers.
4. List different types of MOSFET.
5. Define LTP and UTP of Schmitt trigger (3 x 2 = 6)

**PART – B**

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

1. Derive the expression for voltage gain of an amplifier in CE configuration.
2. Draw and explain the frequency response curve of RC coupled amplifier.
3. Compare voltage and power amplifier.
4. Illustrate the importance of impedance matching in power amplifiers.
5. Compare BJT and FET.
6. Explain the operation of crystal oscillator.
7. State the conditions for proper integration and differentiation. (4 x 6= 24)

**PART – C**

(Answer *any of the three units* from the following. Each full question carries 15 marks)

**UNIT –I**

- III. (a) Explain the principle of operation of transistor amplifier in common emitter configuration. (9)
- (b) Explain the need for stabilisation of operating point (6)

**OR**

- IV.** (a) Explain the working principle of transformer coupled multistage amplifier. (9)  
(b) List the applications of RC coupled, transformer coupled and direct coupled multistage amplifiers. (6)

**UNIT-II**

- V.** (a) Explain the operation and frequency response of single tuned amplifier. (9)  
(b) Explain different classes of power amplifiers (6)

**OR**

- VI.** (a) Explain the operation of the class B push pull power amplifier. (9)  
(b) State the importance of heat sinks and power dissipation in power amplifiers (6)

**UNIT-III**

- VII.**(a) Illustrate the types of negative feedback in amplifiers. (9)  
(b) Derive the expression for the gain of a negative feedback amplifier (6)

**OR**

- VIII.**(a) Explain the working principle of UJT with necessary diagrams. (9)  
(b) Explain the working of UJT relaxation oscillator (6)

**UNIT-IV**

- IX.** (a) Draw and explain the working of Wien bridge oscillator (9)  
(b) List the applications for RC and LC oscillators. (6)

**OR**

- X.** (a) Explain the working of monostable multivibrators with circuit diagram. (9)  
(b) List the applications of multivibrators. (6)

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