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Reg. No……
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DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/ MANAGEMENT/COMMERCIAL PRACTICE, APRIL – 2022

ELECTRONIC DEVICES AND CIRCUITS

[Maximum Marks: **100**] [Time: **3** Hours]

(PART-A)

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

I. 1. Define Operating point.

2. Write the relation between Resonance frequency, Q and Bandwidth.

3. List different types of MOSFET.

4. State the condition for proper integration.

5. Define peizo electric effect. (5 x 2 = 10)

(PART-B)

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

II. 1. Explain the need for stabilization of operating point.

2. Explain working of emitter follower with help of diagram.

3. Distinguish between voltage amplifier and power amplifier.

4. Explain the importance of heat sink in Power amplifier.

5. List the advantages of negative feedback amplifier.

6. Explain working principle of UJT.

7. Draw the circuit diagram of Hartley oscillator write the equation for frequency of Oscillation. (5 x 6 = 30)

(PART-C)

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

UNIT – I

III. (a) Explain Potential divider biasing technique with circuit diagram. (7)

(b) Draw and explain circuit diagram of two stage transformer coupled amplifier and list its advantages. (8)

OR

IV. (a) Draw and explain the frequency response of RC coupled Amplifier. (8)

(b) Explain working principle of direct coupled amplifier. (7)

UNIT – II

V. (a) Draw and explain the operation of Single tuned amplifier. (7)

(b) Explain the operation of Class B Push Pull amplifier. (8)

OR

VI. (a) Explain the series and parallel resonance circuit. (7)

(b) Classify Power amplifier with the help of diagram. (8)

UNIT- III

VII. (a) Explain working principle of JFET. (7)

(b) Explain types of negative feedback amplifier with the help of diagram. (8)

OR

VIII. (a) Explain working of Relaxation oscillator using UJT. (7)

(b) Describe working principle and construction of N-channel depletion type MOSFET. (8)

UNIT - IV

IX. (a) Draw and explain working of Astable multivibrator circuit with waveform. (9)

(b) Draw and explain working of Colpitts oscillator. (6)

OR

X. (a) Explain working of RC phase shift oscillator with help of diagram. (7)

(b) Draw and explain the working of Schmitt trigger with circuit diagram and waveform. (8)

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