TED (15) 3031
(Revision - 2015)

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Reg. No……
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DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/ MANAGEMENT/COMMERCIAL PRACTICE, NOVEMBER – 2020

ANALOG DEVICES AND CIRCUITS

[Maximum Marks: 75] [Time: 2.15 Hours]

PART-A

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

I. 1. Define ripple factor.
2. Define band width.
3. State the concept of Barkhausen's criterion.
4. List out the applications of Schmitt trigger.
5. Define Input offset voltage. (3 x 2 = 6)

PART-B

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

II 1. Describe the construction and principle of Centre tap full wave rectifier with circuit diagram and wave forms.
2. With the help of neat diagram explain voltage regulator using zener diode.
3. Plot frequency response of R C coupled amplifier with necessary justifications.
4. Explain operation of astable multi vibrator circuit with circuit diagram and waveforms.
5. Describe operation of Hartley oscillator.
6. Explain the concept of virtual ground.
7. Describe adder using op-amplifier. (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) With the help of neat sketch explain double ended clipping circuit. (8)

(b) Describe the working of regulator using 7805 IC. (7)

OR

IV (a) With the help of circuit diagram explain positive clamping circuits. (8)

(b) Explain operation of π filters. (7)

UNIT – II

V (a) Explain operation of transformer coupled amplifier with the help of circuit diagram. (8)

(b) Explain the push pull amplifier operation with the help of circuit diagram. (7)

OR

VI (a) Explain class A power amplifiers. (8)

(b) Write four differences between the positive an negative feedback in amplifiers. (7)

UNIT- III

VII (a) With the help of circuit diagram explain operation of R-C phase shift oscillators. (8)

(b) Explain mono stable multi vibrator circuits with circuit diagram. (7)

OR

VIII (a) Explain the operation of Schmitt trigger using circuit diagram and waveforms. (8)

(b) Describe the working of mono stable multi vibrator circuits using IC 555. (7)

UNIT - IV

IX (a) Describe Integrator using op-amplifier. (8)

(b) Describe differentiator using op-amplifier. (7)

OR

X (a) Explain operation of zero crossing detector using op Amp. (8)

(b) Describe the working principle of half wave precision rectifiers. (7)
