

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/
MANAGEMENT/COMMERCIAL PRACTICE — APRIL, 2019

ANALOG DEVICES AND CIRCUITS

[Time : 3 hours

(Maximum marks : 100)

PART — A

(Maximum marks : 10)

Marks

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

1. Define peak inverse voltage of a diode.
2. Draw the frequency response curve of an RC coupled amplifier.
3. List out the advantages of crystal oscillator.
4. List out the characteristics of an ideal op-amp.
5. Discuss the virtual ground in op-amp.

(5 × 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 zener diode as voltage regulator.
2. Explain the positive clamping circuit with the help of diagrams and waveforms.
3. Differentiate class A and class B amplifier.
4. List out different types of oscillators.
5. Explain the working of tuned collector oscillator.
6. Discuss subtractor using op-amp.
7. Explain half wave precision rectifier.

(5 × 6 = 30)

PART — C

(Maximum marks : 60)

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

UNIT — I

- III (a) Explain the working of voltage regulator using 7805 IC. 8
 (b) Explain the working of bridge rectifier with filter circuit and draw the wave forms. 7

OR

- IV (a) Explain the working of unbiased positive and negative shunt clippers. 8
 (b) Compare half wave and full wave rectifiers. 7

UNIT — II

- V (a) Explain the working of RC coupled amplifier. 8
 (b) Explain the operation of complementary symmetry push pull amplifier. 7

OR

- VI (a) Explain the operation of class A amplifier. 8
 (b) Explain the operation of push pull amplifier. 7

UNIT — III

- VII (a) Draw a neat sketch of RC phase shift oscillator and explain its working. 8
 (b) Describe the working of crystal oscillator. 7

OR

- VIII (a) Draw and explain the working of Hartely oscillator. 8
 (b) Explain astable multivibrator using 555 IC. 7

UNIT — IV

- IX (a) Explain the working of a non inverting amplifier using op-amp. 8
 (b) Describe adder using op-amp. 7

OR

- X (a) Draw and explain integrator using op-amp. 8
 (b) Explain op-amp as comparator. 7