

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/
MANAGEMENT/COMMERCIAL PRACTICE — OCTOBER, 2018

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 voltage regulation.
2. What is gain of an amplifier ?
3. Draw the symbol of an NPN transistor.
4. Draw the circuit of an op-amp comparator.
5. What is 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 positive clamper.
2. What are the drawbacks of half wave rectifier ?
3. What are the classification of power amplifiers based on period of conduction ?
4. Compare voltage and power amplifiers.
5. What are the main difference between an amplifier and an oscillator ?
6. Explain the working of Hartley oscillator.
7. Draw an integrator circuit using op-amp.

(5×6 = 30)

PART — C

Marks

(Maximum marks : 60)

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

UNIT — I

- III (a) Explain the working of zener voltage regulator. 8
 (b) Explain the working of voltage regulator using IC 7905. 7

OR

- IV (a) Compare half wave and full wave rectifiers. 7
 (b) Describe the operation of centre tap and bridge rectifiers. 8

UNIT — II

- V (a) Explain the working of complementary symmetry pushpull amplifiers. 9
 (b) What are the advantages of pushpull amplifiers ? 6

OR

- VI (a) Explain the concept of feedback in amplifiers. 6
 (b) Draw and explain two stage transformer coupled amplifier. 9

UNIT — III

- VII (a) Draw and explain the circuit of an RC phase shift oscillator. 8
 (b) Draw and explain the circuit of crystal oscillator. 7

OR

- VIII (a) Draw and explain the Schmitt trigger circuit. 8
 (b) Explain the working of transistor astable multivibrator. 7

UNIT — IV

- IX (a) Draw and explain summing amplifier using op-amp. 8
 (b) Draw and explain difference amplifier using op-amp. 7

OR

- X (a) Give the ideal characteristics of an op-amp. 6
 (b) Draw and explain zero crossing detector circuit using an op-amp. 9