

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANAGEMENT/
COMMERCIAL PRACTICE - APRIL -2020.

ANALOG DEVICES AND CIRCUITS

(Maximum Marks :75)

PART-A

[Time : 2.15 hours]

Marks

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

1. Define peak inverse voltage (PIV).
2. What are the advantages of bridge rectifier.
3. What is amplification.
4. What is the basic principle of an oscillator.
5. Draw a summing amplifier.

(3x2=6)

PART - B

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

1. Explain the working of biased positive clipper.
2. Draw and explain L-C filter.
3. Compare positive and negative feedback in amplifier.
4. State and explain Barkhausen's criterion.
5. What are the applications of bistable multivibrator.
6. Give the ideal characteristics of an opamp.
7. Explain an opamp comparator.

[4x6 =24]

PART - C

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

UNIT I

- III (a) Explain the working of a half wave rectifier. (7)
- (b) Explain the working of a full wave centre tapped rectifier with waveforms. (8)

OR

IV (a) Explain the working of unbiased series diode positive clipper. (7)

(b) Explain the working of unbiased series diode negative clipper. (8)

UNIT- II

V (a) Draw and explain the working of common base amplifier. (9)

(b) Lists the characteristics of common base amplifier. (6)

OR

VI (a) Explain the working of RC coupled amplifier. (9)

(b) Draw and explain the frequency response curve of RC coupled amplifier. (6)

UNIT- III

5 VII (a) Explain the classification of oscillators. (6)

5 (b) Draw and explain the working of Hartley oscillator. (9)

OR

VIII Draw and explain the working of transistor monostable multivibrator. (15)

UNIT - IV

IX (a) Draw and explain an opamp as integrator. (8)

(b) Draw and explain an opamp as differentiator. (7)

OR

5 X (a) Derive the voltage gain of an inverting amplifier using opamp. (8)

5 (b) Derive the voltage gain of a non inverting amplifier using opamp. (7)
