TED (15) – 3031

(REVISION — 2015)

Reg. No..

Signature ....

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

ANALOG DEVICES & 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 the term peak inverse voltage.

2. Name three schemes of amplifier coupling.

3. State Barkhausen's criteria for oscillation.

4. Draw the circuit of an op-amp integrator.

5. Define CMRR.

(5×2 = 10)

PART — B

(Maximum marks : 30)

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

1. Explain a full wave bridge rectifier.

2. Explain a zener diode voltage regulator.

3. Explain a transformer coupled amplifier.

4. Explain class A, class B and class C amplifier.

5. Explain a RC phase shift oscillator circuit.

6. Explain the working of colpitts oscillator.

7. List the characteristics of an ideal op amp.

(5×6 = 30)

[40]

[P.T.O.

PART — C

(Maximum marks : 60)

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

Unit — I

III   (a)   Explain a center tapped full wave rectifier circuit with waveform.   8

     (b)   Explain a LC filter.   7

Or

IV   (a)   Explain the working of voltage regulator using IC7805.   7

     (b)   Explain a positive clipper using series diode.   8

Unit — II

V   (a)   Explain a RC coupled amplifier and plot the frequency response.   8

     (b)   Distinguish between different coupling schemes used in multistage amplifiers.   7

Or

VI   (a)   Explain the working of a complementary symmetry pushpull amplifier.   8

     (b)   Compare voltage and power amplifier.   7

Unit — III

VII   (a)   Explain an astable multivibrator using IC 555.   8

     (b)   Explain the working of crystal oscillator.   7

Or

VIII   (a)   Name the three multivibrators and give applications of each.   7

     (b)   Explain the working of Hartley oscillator.   8

Unit — IV

IX   (a)   Explain a inverting amplifier using op-amp.   7

     (b)   Explain a summing amplifier using op-amp.   8

Or

X   (a)   Explain a comparator using op-amp.   8

     (b)   Explain a differentiator using op-amp.   7

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