DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANAGEMENT/
COMMERCIAL PRACTICE –NOVEMBER -2021.

ANALOG CIRCUITS

(Maximum Marks : 75)   [Time : 2.15 hours]

PART–A

Marks

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

1. Explain voltage gain.

2. Define Barkhausen criteria for oscillations.

3. List the conditions for proper integration in RC integrator.

4. Define clamping.

5. Explain voltage follower.   (3x2=6)

PART - B

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

1. Explain DC load line of CE amplifier.

2. With neat diagram explain positive feedback amplifier.

3. Explain the working of Hartley oscillator.

4. With neat diagram and waveform explain RC differentiator circuit.

5. Explain positive biased clipper with necessary waveforms.

6. Illustrate the internal block diagram of OP-amp.

7. Derive the output equation of an inverting amplifier.

(4x6 =24)

PART - C

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

UNIT I

III (a) With neat diagram explain the working of transformer coupled amplifier (9)

(b) Describe the frequency response and band width of RC coupled amplifier. (6)

OR

IV (a) Describe the negative feedback amplifier with voltage series and shunt

arrangement. (8)

(b) With diagram explain RC coupled amplifier. (7)

UNIT- II

V (a) Explain the working of Wein bridge oscillator with suitable diagram. (8)

(b) List the advantages and applications of crystal oscillator. (7)

OR

VI (a) Describe the operation of Bistable multivibrator using transistors. (8)

(b) Explain the operation of crystal oscillator. (7)

UNIT- III

VII (a) Explain the working of shunt positive clipper with positive and negative

reference voltage. (9)

(b) Define the characteristics of a pulse waveform. (6)

OR

VIII (a) Explain the operation of Zener diode clipper circuits. (8)

(b) Draw the RC circuit which can give a pulse wave output when a square

wave is given as input. (7)

UNIT – IV

IX (a) Explain and derive 1 to V and V to 1 converter. (8)

(b) Explain the ideal characteristics of Op-amp. (7)

OR

X (a) Explain the working of instrumentation amplifier. (8)

(b) Describe the working of Schmitt trigger with necessary diagrams and

waveforms. (7)

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