

**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/
MANAGEMENT/COMMERCIAL PRACTICE, NOVEMBER - 2024**

ANALOG CIRCUITS FOR INSTRUMENTATION

[Maximum Marks:75]

[Time: 3 Hours]

PART - A

I. Answer all the following questions in one word or one sentence. Each question carries 'one' marks.

(9 x 1 = 9 Marks)

Module Outcome Cognitive level

1	What is DC Load line?	M1.05	R
2	Input characteristics of CE amplifier is plotted between and.....	M1.05	U
3	Write the expression for gain of an amplifier with feedback	M2.01	U
4	Give an example for LC oscillator.	M2.03	R
5	Write the expression for gain of a non-inverting amplifier using op amp.	M3.04	R
6	Define CMRR.	M3.03	R
7	Write any one non-linear applications of op amp.	M4.01	R
8	State any one use of precision Rectifiers.	M4.01	R
9	Write any one application of clamping circuits.	M4.03	R

PART - B

II. Answer any eight questions from the following. Each question carries 'Three' marks.

(8 x 3 = 24 Marks)

Module Outcome Cognitive level

1	Write notes on CB configuration of NPN transistor.	M1.01	U
2	Define power gain and give its expression.	M1.04	U
3	List any three the advantages of negative feedback amplifier.	M2.01	U
4	Draw the tank circuit of crystal oscillator. Write the expression for the frequency of oscillation.	M2.03	U
5	Define input bias current and input offset current.	M3.03	R
6	Explain the working of Voltage follower using op-amp.	M3.04	U
7	Draw the circuit and waveforms of positive clipper using op- amp.	M4.03	U
8	Write the applications of peak detector using, op-amp.	M4.02	U

9	Draw the circuit of a log amplifier using op-amp.	M4.05	U
10	Explain the differentiator circuit using op amp.	M3.05	U

PART - C

Answer all the questions from the following. Each question carries 'seven' marks.

(6 x 7 = 42 Marks)

Module Outcome Cognitive level

III.	Illustrate the working of a Common Emitter Amplifier with the help of neat a Circuit. OR	M1.04	U
IV.	Explain briefly the input and output characteristics of CE configuration.	M1.05	U
V.	Draw the circuit of Wein bridge oscillator and explain its working. OR	M2.03 M2.03	U U
VI.	Draw the circuit of Colpitt's oscillator and explain its working.		
VII.	Explain the working of integrator using op amp and draw the output waveforms. OR	M3.05	U
VIII.	Design an inverting amplifier of gain -10 and non-inverting amplifier of gain 10.	M3.04	A
IX.	Explain the working of a Schmitt trigger circuit using OP- Amp. OR	M4.02	U
X.	Describe the working of Antilog amplifier using OP-Amp.	M4.05	U
XI.	Compare CB, CE and CC configurations of op amp. OR	M1.02	U
XII.	Explain potential divider biasing circuit.	M1.03	U
XIII.	Illustrate the working of RC phase shift oscillator with the help of circuit diagram. OR	M2.03	U
XIV.	With a schematic, explain the working of Astable multivibrator.	M2.04	U
