Roll No .....

National Institute of Technology, Delhi

Name of the Examination: B.Tech.

Re-Mid Semester Examination (October, 2023)

Branch : ECE & EE **Semester** : 5th

Title of the Course : IC Applications **Course Code** : ECBB 304

Time: 1 Hour 30 Minutes **Maximum Marks: 25**

Note: *All questions are compulsory.*

COURSE OUTCOMES		COGNITIVE LEVELS
CO1	Study of basics of operational amplifier ideal and practical	**Understanding** (Level II)
CO2	Application of operational amplifier	**Analyzing** (Level IV)
CO3	Study and analysis of opamp filters	**Evaluating** (Level V)
CO4	Comparator, convertor circuit analysis	**Analyzing** (Level IV)

Course Outcomes(CO's)	CO1	CO2
Questions No.	Q1, Q2	Q3, Q4, Q5

Answer the following questions. All questions carry equal marks.

1) Find the expression of voltage gain for inverting opamp configuration with negative feedback.

2) Define input bias current and derive its mathematical expression.

3) Why gain falls for specific frequency ranges? Find the expression for gain magnitude and phase angle for open loop opamp configuration.

4) What is the power absorbed by the 4-kΩ resistor below?

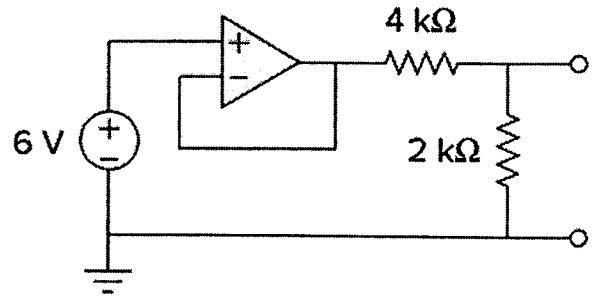

Figure 1

5. Find output offset voltage. Following values are given:

Rf = 2K
Rin= 150K
Input offset = 1.2 mV

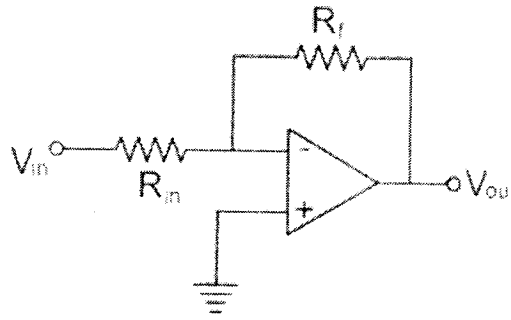

Figure 2