SNS COLLEGE OF TECHNOLOGY

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COIMBATORE-641 035, TAMIL NADU

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Course Code & Name : **23ECB203 LINEAR INTEGRATED CIRCUITS**

Course Faculty : **Ms.V.Aishwarya-AP/ECE**

Question Bank

Unit – II : APPLICATIONS OF OPERATIONAL AMPLIFIERS

Part A – 2 Mark Questions

S.No	Question	Bloom's Level	Industry Reference/Gate QP	CO
1	Define inverting amplifier.	BL1 – Remember	Analog Devices	CO2
2	Define non-inverting amplifier.	BL1 – Remember	Texas Instruments	CO2
3	What is voltage follower?	BL1 – Remember	Buffer Amplifiers	CO2
4	Write the gain expression for an inverting amplifier.	BL1 – Remember	GATE EC	CO2
5	Write the gain expression for a non-inverting amplifier.	BL1 – Remember	GATE EC	CO2
6	What is a summing amplifier?	BL1 – Remember	Signal Processing	CO2
7	Define differential amplifier.	BL1 – Remember	Instrumentation Systems	CO2
8	What is an integrator?	BL1 – Remember	Control Systems	CO2
9	What is a differentiator?	BL1 – Remember	Analog Signal Processing	CO2
10	Define instrumentation amplifier.	BL1 – Remember	Medical Electronics	CO2
11	What is a comparator?	BL1 – Remember	Industrial Automation	CO2
12	Define Schmitt trigger.	BL1 – Remember	Pulse Shaping Circuits	CO2
13	What is a precision rectifier?	BL1 – Remember	Power Electronics	CO2
14	What is a peak detector?	BL1 – Remember	Measurement Systems	CO2
15	Define logarithmic amplifier.	BL1 – Remember	Communication Systems	CO2
16	What is an antilogarithmic amplifier?	BL1 – Remember	Signal Processing	CO2
17	Define V–I converter.	BL1 – Remember	Industrial Sensors	CO2
18	Define I–V converter.	BL1 – Remember	Data Acquisition	CO2
19	What is a clipper circuit?	BL1 – Remember	Wave Shaping	CO2
20	What is a clamper circuit?	BL1 – Remember	Analog Circuits	CO2

Part B Questions

S.No	Question	Bloom's Level	Industry Reference/Gate	Course Outcome
1	Explain the working of inverting and non-inverting amplifiers with gain expressions.	BL2 – Understand	Analog Devices	CO2
2	Explain voltage follower and its applications.	BL2 – Understand	Buffer Amplifiers	CO2
3	Explain summing and subtractor amplifiers with neat diagrams.	BL2 – Understand	Signal Processing	CO2
4	Describe the working of integrator and differentiator circuits.	BL2 – Understand	Control Systems	CO2
5	Explain the working of an instrumentation amplifier.	BL2 – Understand	Medical Electronics	CO2
6	Explain the working of logarithmic and antilogarithmic amplifiers.	BL2 – Understand	Communication Systems	CO2
7	Explain comparator and Schmitt trigger with waveforms.	BL2 – Understand	Industrial Automation	CO2
8	Explain the operation of precision rectifier and peak detector circuits.	BL2 – Understand	Power Electronics	CO2
9	Explain V–I and I–V converters with applications.	BL2 – Understand	Sensor Interface Circuits	CO2
10	Explain clipper and clamper circuits using op-amps.	BL2 – Understand	Wave Shaping Circuits	CO2
11	Analyze the frequency response of integrator and differentiator circuits.	BL4 – Analyze	GATE EC	CO2
12	Compare integrator and differentiator circuits.	BL4 – Analyze	Analog Signal Processing	CO2
13	Explain low-pass, high-pass and band-pass Butterworth filters.	BL2 – Understand	Signal Conditioning	CO2
14	Design an op-amp based summing amplifier for industrial applications.	BL3 – Apply	Industrial Automation	CO2
15	Explain the applications of op-amp circuits in signal conditioning systems.	BL2 – Understand	Industrial Electronics	CO2
16	Derive the gain expression for an inverting amplifier.	BL3 – Apply	GATE EC	CO2
17	Design a non-inverting amplifier with gain of 11.	BL3 – Apply	GATE EC	CO2
18	Analyze the output of an ideal integrator for a square wave input.	BL4 – Analyze	GATE EC	CO2
19	Explain hysteresis in Schmitt trigger circuits.	BL2 – Understand	GATE EC	CO2
20	Design a summing amplifier for three input signals.	BL3 – Apply	GATE EC	CO2
21	Derive the gain expression for an inverting amplifier.	BL3 – Apply	GATE EC	CO2