

# ANALOG AND DIGITAL INTEGRATED CIRCUITS QUESTION BANK

## UNIT I: Introduction to Operational Amplifier and Its Applications

### 2 Mark Questions:

1. What are the ideal characteristics of an operational amplifier?
2. Explain the function of a voltage follower circuit.
3. What is the role of an inverting amplifier in an op-amp circuit?
4. Describe the configuration and application of a non-inverting amplifier.
5. What is the primary function of a differentiator circuit?
6. How does an integrator circuit differ from a differentiator circuit in terms of output?
7. What is the main use of a voltage-to-current converter in electronic circuits?
8. Define an instrumentation amplifier and its typical application.
9. Explain the difference between a low-pass and a high-pass filter.
10. What is the purpose of a comparator in op-amp circuits?
11. How does an op-amp work as a voltage-to-current converter?
12. Describe the basic operation of a band-pass filter using an op-amp.
13. What is the significance of an integrator in signal processing?
14. Explain the concept of a non-inverting amplifier with an example.
15. How is a differentiator circuit used in practical applications?
16. What is a voltage follower, and why is it used in op-amp circuits?
17. Describe the basic principle of operation for a low-pass filter.
18. What are the key features of an ideal operational amplifier?
19. What is the purpose of using an instrumentation amplifier?
20. How does a high-pass filter work in an op-amp circuit?
21. Explain the basic configuration of a comparator using an op-amp.
22. Describe the application of a voltage-to-current converter in signal processing.
23. What is a band-pass filter and its function in electronic circuits?
24. Explain the role of the feedback loop in an operational amplifier circuit.
25. How does an op-amp differentiator circuit affect the frequency response of a signal?