

**SSR DEGREE COLLEGE (A) NIZAMABAD**  
**M.SC. PHYSICS**  
**SEM – II INTERNAL – I**  
**Electronics 2**  
**QUESTION BANK**

**I. Multiple Choice**

1. The ideal input impedance of an operational amplifier is:

- A)  $0 \Omega$
- B) Infinite
- C)  $1 \text{ k}\Omega$
- D)  $100 \Omega$

Answer: B) Infinite

2. The ideal output impedance of an op-amp is:

- A) Infinite
- B)  $100 \Omega$
- C) Zero
- D)  $1 \text{ k}\Omega$

Answer: C) Zero

3. An operational amplifier mainly amplifies:

- A) DC current
- B) Differential voltage
- C) Power
- D) Frequency

Answer: B) Differential voltage

4. The symbol of an op-amp has:

- A) One input
- B) Two inputs
- C) Three outputs
- D) No supply terminals

Answer: B) Two inputs

5. The input terminals of an op-amp are called:

- A) Base and emitter
- B) Drain and source
- C) Inverting and non-inverting
- D) Collector and emitter

Answer: C) Inverting and non-inverting

6. In an inverting amplifier, the input signal is applied to:

- A) Non-inverting terminal
- B) Inverting terminal
- C) Output terminal
- D) Ground terminal

Answer: B) Inverting terminal

7. The phase difference between input and output in an inverting amplifier is:

- A)  $0^\circ$
- B)  $45^\circ$
- C)  $90^\circ$
- D)  $180^\circ$

Answer: D)  $180^\circ$

8. The voltage gain of an inverting amplifier is:



- A)
- B)
- C)
- D) 1

Answer: B)

9. A voltage follower has a gain of:

- A) 0
- B) 1
- C) Infinite
- D) -1

Answer: B) 1

10. The op-amp configuration used as a buffer circuit is:

- A) Integrator
- B) Comparator
- C) Voltage follower
- D) Differentiator

Answer: C) Voltage follower

11. IC 555 timer is mainly used for:

- A) Amplification
- B) Timing applications
- C) Rectification
- D) Modulation

Answer: B) Timing applications

12. The 555 timer IC was introduced by:

- A) Intel
- B) Motorola
- C) Signetics
- D) IBM

Answer: C) Signetics

13. The number of pins in a standard 555 timer IC is:

- A) 6
- B) 8
- C) 10
- D) 14

Answer: B) 8

14. The pin number used for ground in IC 555 is:

- A) Pin 1
- B) Pin 2
- C) Pin 4
- D) Pin 8

Answer: A) Pin 1

15. The output pin of IC 555 is:

- A) Pin 2
- B) Pin 3
- C) Pin 5
- D) Pin 7

Answer: B) Pin 3

16. The reset pin of IC 555 is:

- A) Pin 2

- B) Pin 4
- C) Pin 6
- D) Pin 8

Answer: B) Pin 4

17. In IC 555, the trigger pin is:

- A) Pin 1
- B) Pin 2
- C) Pin 5
- D) Pin 7

Answer: B) Pin 2

18. The threshold pin in IC 555 is:

- A) Pin 3
- B) Pin 4
- C) Pin 6
- D) Pin 8

Answer: C) Pin 6

19. The control voltage pin in IC 555 is:

- A) Pin 5
- B) Pin 6
- C) Pin 7
- D) Pin 8

Answer: A) Pin 5

20. The discharge pin of IC 555 timer is:

- A) Pin 2
- B) Pin 3
- C) Pin 5
- D) Pin 7

Answer: D) Pin 7

## II. Fill in the blanks

1. An operational amplifier is commonly called an \_\_\_\_.

Answer: Op-amp

2. An ideal op-amp has \_\_\_\_ input impedance.

Answer: Infinite

3. The ideal output impedance of an op-amp is \_\_\_\_.

Answer: Zero

4. An op-amp amplifies the \_\_\_\_ between two input signals.

Answer: Difference

5. The two input terminals of an op-amp are called inverting and \_\_\_\_ terminals.

Answer: Non-inverting

6. In the symbol of an op-amp, the inverting terminal is marked with a \_\_\_\_ sign.

Answer: Minus (-)

7. The non-inverting terminal is marked with a \_\_\_\_ sign.

Answer: Plus (+)

8. The commonly used general-purpose op-amp IC is \_\_\_\_.

Answer: 741

9. In an inverting amplifier, the output is \_\_\_\_ phase shifted with respect to the input.

Answer: 180°

10. A voltage follower has a voltage gain equal to \_\_\_\_.

Answer: One (1)

11. IC 555 timer is mainly used in \_\_\_\_ applications.

Answer: Timing

12. The standard IC 555 timer has \_\_\_\_ pins.

Answer: 8

13. Pin 1 of the IC 555 timer is connected to \_\_\_\_.

Answer: Ground

14. The output pin of IC 555 timer is pin number \_\_\_\_.

Answer: 3

15. Pin 2 of the IC 555 timer is called the \_\_\_\_ pin.

Answer: Trigger

16. Pin 6 of the IC 555 timer is called the \_\_\_\_ pin.

Answer: Threshold

17. Pin 4 of the IC 555 timer is the \_\_\_\_ pin.

Answer: Reset

18. Pin 7 of the IC 555 timer is known as the \_\_\_\_ pin.

Answer: Discharge

19. Pin 8 of the IC 555 timer is connected to the \_\_\_\_ supply.

Answer: Positive

20. IC 555 timer can operate in \_\_\_\_ different modes.

Answer: Three

### III. Descriptive Questions

1. Write the ideal characteristics of operational amplifier
2. Mention the pins of IC 555 timer
3. Draw the four variable k-map
4. Explain the working of multiplexer
5. Mention the types of shift register