

22225 Basic Electronics Viva Questions and Answers

Define the Given following

1. Resistor: A resistor is an electrical component that limits or regulates the flow of electrical current in an electronic circuit.

2. Peak Inverse Voltage (PIV): The maximum value of reverse voltage (for the diode in a rectifier) occurring at the peak of the negative cycle of the input cycle is called Peak Inverse Voltage.

3. Transformer Utilisation Factor (TUF): It is the ratio of dc power delivered to the load and the ac rating of the transformer secondary.

4. Ripple factor: The factor which represents a component present in the rectifier output, with respect to dc component is called Ripple Factor. OR The ratio of r.m.s. value of a.c. component to the d.c. A component in the rectifier output is known as ripple factor.

5. Efficiency of rectifier : This is defined as the ratio of dc power delivered to the load to the ac input power from the secondary winding of the transformer.

6. Filters: Filters are electronic circuits (consisting of inductors and capacitors) which remove or minimise unwanted ac component of the rectifier output and allows only the dc component to reach the load.

7. α (Alpha) : This is the Common Base dc current gain. It is defined as the ratio of collector current (I_C) to emitter current (I_E). $\alpha = \frac{I_C}{I_E}$

8. β (Beta): This is the Common Emitter dc current gain. It is defined as the ratio of collector current (I_C) to the base current (I_B).

9. Frequency: The number of cycles that occurs in one second is called the frequency (f) of the alternating quantity. It is measured in cycles/ sec or Hertz(Hz)

10. Analog Transducer

An analog transducer is a device that converts the input signal into a continuous DC signal of voltage or current.

11. Active Transducer

Used for measurement of Surface roughness in accelerometers and vibration pickups

12. Passive Transducer

Used for measurement of power at high frequency

13. Examples of Analog Transducer

Strain gauge

L.V.D.T

Thermocouple

Thermistor

14. State advantages of MOSFET.

MOSFETs provide greater efficiency while operating at lower voltages.

Absence of gate current results in high input impedance.

High switching speed.

They operate at lower power and draw no current.

15. Give different types of IC.

1. Analog IC
2. Digital IC
3. Thin and thick film ICs
4. Monolithic ICs

16. Application of resistor:

1. Resistors are used in high frequency instruments.
2. Resistor is used in power control circuits.
3. It is used in DC power supplies.
4. Resistors are used in filter circuit networks.

17. Applications of capacitor:

1. Use for capacitors is energy storage.
2. Additional uses include power conditioning, signal coupling or decoupling, electronic noise filtering, and remote sensing.

18. Applications of Inductors:

- 1.Filters
- 2.Sensors

19. Specifications of Resistor:

- 1.Temperature Coefficient.
- 2.Size or value of a resistor
- 3.Power Dissipation / wattage
- 4.Tolerance

20. Inductor Specification:

- 1.DC Resistance (DCR)
- 2.Maximum DC Current
- 3.Electromagnetic Interference (EMI)
- 4.Magnetic Saturation Flux Density

21. Advantages of Integrated circuits:

- Small in size due to the reduced device dimension.
- Low weight due to very small size.
- Low power requirement due to lower dimension and lower threshold power requirement.
- Low cost due to large-scale production.
- High reliability due to the absence of a solder joint.

22. Disadvantages of Integrated circuits:

- IC resistors have a limited range.
- Generally inductors (L) cannot be formed using IC.
- ICs are delicate and cannot withstand rough handling
- Limited amount of power handling.

23. Advantages of MOSFET

MOSFETs provide greater efficiency while operating at lower voltages.
Absence of gate current results in high input impedance.
High switching speed.
They operate at lower power and draw no current.

24. Types of electrical signals

- 1) Sine wave
- 2) Triangular wave
- 3) Square wave

25. Applications of Active Transducer

Used for measurement of Surface roughness in accelerometers and vibration pickups

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