

B.Tech (ECE 1st Year) - Unit II: Network Theory MCQs

1. The reciprocal of resistance is called:

- a) Inductance b) Capacitance c) Conductance d) Reactance

Answer: c) Conductance

2. The unit of admittance is:

- a) Ohm b) Mho (Siemens) c) Henry d) Farad

Answer: b) Mho (Siemens)

3. Kirchhoff's Current Law (KCL) is based on:

- a) Conservation of energy b) Conservation of charge c) Ohm's Law d) Conservation of power

Answer: b) Conservation of charge

4. According to KVL, the algebraic sum of voltages in a closed loop is:

- a) Zero b) Equal to resistance c) Equal to inductance d) Infinite

Answer: a) Zero

5. In mesh analysis, the primary variable is:

- a) Current in a loop b) Voltage at a node c) Power in circuit d) Energy stored

Answer: a) Current in a loop

6. In nodal analysis, which law is used?

- a) Ohm's Law b) KVL c) KCL d) Superposition theorem

Answer: c) KCL

7. Thevenin's theorem is used to simplify a circuit to:

- a) Current source & parallel resistance b) Voltage source & series resistance c) Only a resistance d) Dependent source

Answer: b) Voltage source & series resistance

8. Norton's theorem represents the network with:

- a) Voltage source in series with resistance b) Current source in parallel with resistance c) Only a capacitor d) Only a resistor

Answer: b) Current source in parallel with resistance

9. Maximum power is transferred to the load when:

- a) Load resistance = Source resistance b) Load resistance > Source resistance c) Load resistance < Source resistance d) Load resistance is zero

Answer: a) Load resistance = Source resistance

10. A star network can be converted into delta network to:

- a) Reduce capacitance b) Simplify circuit analysis c) Increase power factor d) Reduce resistance

Answer: b) Simplify circuit analysis

11. In star-delta conversion, the resistance of one delta branch is equal to:

- a) Product of two star resistances divided by opposite star resistance b) Sum of all star resistances c) Parallel combination of two star resistances d) Series combination of two star resistances

Answer: a) Product of two star resistances divided by opposite star resistance