

Laxminarayan Institute of Technology, Nagpur

B-Tech Second Semester (Chemical Engineering)
Subject : Electrical & Electronics Engineering (EEE)

Question Bank

UNIT -1

1. You are given three bulbs of ,25W, 40W and 60W. Which of them has the lowest resistance?
(A) 25W bulb (B) 40W bulb
(C) 60W bulb (D) Incomplete information
2. You have the following electric appliances
 1. 1 KW, 250V electric heater
 2. 1 KW, 250V electric kettle
 3. 1KW, 250V electric bulbWhich of these has the highest resistance?
(A) Heater (B). Kettle
(C) All have equal resistances (D) Electric bulb
3. A 3 ohm resistor having 2 A current will dissipate the power of
A. 2 W
B. 6 W
C. 4 W .
D. 12 W
4. A length of wire having a resistance of Length is cut into four equal parts and these four parts are bundled together side-by-side to form a wire. The new resistance will be
A. 1/4 ohm
B. 1/16 ohm
C. 4 ohm
D. 16 ohm
5. The hot resistance of the filament of a bulb is higher than the cold resistance because the temperature coefficient of the filament is
A. negative
B. infinite
C. zero
D. positive
6. In applying the superposition theorem which statement is correct?
A. All current and voltage sources are removed
B. Only the current sources are removed
C. Only the voltage sources must be removed.
D. Only one source is included at a time
7. For _____ network, Thevenin's theorem cannot be applied
A. linear
B. active
C. passive
D. nonlinear

8. Which of the following is an active element in a circuit?
- A. Current source
 - B. Resistance
 - C. Inductance
 - D. Capacitance
9. The circuit having the same properties in either direction is known as
- A. unilateral
 - B. reversible
 - C. bilateral
 - D. irreversible
10. In circuit analysis by network reduction technique, which of the following laws are used
- A. Ohm's law
 - B. KCL
 - C. KVL
 - D. All the above

UNIT-2

1. The rms value of ac sinusoidal current is 10A, the peak value is
- A. 7.07A
 - B. 14.14A
 - C. 10A
 - D. 28.28A
2. In the pure capacitive circuit, the voltage lags the current by
- A. 90 degree
 - B. 180 degree
 - C. 270 degree
 - D. 360 degree
3. The power consumed by pure capacitance connected to an ac source is
- A. zero
 - B. very low
 - C. very high
 - D. infinite
4. Impedance of a R-L circuit excited by an ac source is
- A. real
 - B. Imaginary
 - C. complex
 - D. none of these
5. Which of the following is used to express the capacity of an ac equipment
- A. true power
 - B. reactive power
 - C. apparent power
 - D. none of these

6. A series RLC circuit operating at unity power factor will draw reactive power equal to
A. $VI \tan \phi$
B. $VI \sin \phi$
C. $VI \cos \phi$
D. zero

7. The standard supply frequency in India is
A. 25 Hz
B. 50 Hz
C. 60 Hz
D. 30 Hz

8. The transfer of charge by an alternating quantity indicates the
A. rms value
B. average value
C. peak value
D. instantaneous value

9. The average value of a sinusoidally varying quantity is times the maximum value
A. 0.637
B. 0.141
C. $\sqrt{3}$
D. $\sqrt{2}$

10. The operator j , when operated upon a phasor, shifts the phasor in
A. clockwise direction by 90°
B. anticlockwise direction by 120°
C. clockwise direction by 120°
D. anticlockwise direction by 90°

UNIT-3

1. When the frequency of applied voltage in a series RL circuit increases, what happens to the inductive reactance?

- A. Decreases
- B. Remains the same
- C. Increases
- D. Becomes zero

2. When the frequency of applied voltage in a series RL circuit increases, what happens to the capacitive reactance?

- A. Decreases
- B. Remains the same
- C. Increases
- D. Becomes zero

3. A power factor of 0 indicates
- purely resistive element
 - purely reactive element
 - both(a) and (b)
 - none of these;
4. In an ac circuit, the active power and apparent power are equal in magnitude, then the power factor of the circuit is
- 1
 - 0.8
 - 0.6
 - 0
5. In an ac circuit the real power is consumed in
- pure resistor
 - pure inductance
 - pure capacitance
 - none of the above
6. A series RLC circuit operating at unity power factor will draw reactive power equal to
- $VI \tan \theta$
 - VI
 - $V I \cos \theta$
 - Zero
7. In thermal power plant, the pressure in the working fluid cycle is developed by
- Condenser
 - Super heater
 - Feed water pump
 - Turbine
8. On which one of the following cycle does the modern steam power plant work
- Carnot cycle
 - Rankine cycle
 - Otto cycle
 - Bell-Coleman cycle
9. The power factor of a ac circuit is given by
- R/Z
 - KW/KVA
 - cosine of the angle between current & voltage
 - all the above
10. Mutual inductance can be observed in which of the following connections:
- Conductively connected circuits
 - Inductive circuits
 - Conductively connected inductive coupled circuits
 - Both b and c

UNIT-4

1 The function of oil in a transformer is

- A. to provide insulation and cooling
- B. to provide protection against lightning
- C. to provide protection against short circuit
- D. to provide lubrication

2. In a transformer, the primary and the secondary voltages are

- A. 60° out of phase
- B. 90° out of phase
- C. 180° out of phase
- D. always in phase

3. The core flux of a practical transformer with a resistive load

- A. is strictly constant with load changes
- B. increases linearly with load
- C. increases the square root of the load
- D. decreases with increase of load

4. The inductive reactance of a transformer depends on

- A. electromotive force
- B. magnetomotive force
- C. magnetic flux
- D. leakage flux

5. For an ideal transformer the windings should have

- A. maximum resistance on primary side and least resistance on secondary side
- B. least resistance on primary side and maximum resistance on secondary side
- C. equal resistance on primary and secondary side
- D. no ohmic resistance on either side

6. The transformer laminations are interleaved at the joints to reduce

- A. the resistance
- B. eddy current
- C. the reluctance
- D. all of these

7. A transformer on no - load condition operates at

- A. low, lagging pf
- B. high, lagging pf
- C. unity pf
- D. none of these

8. The no - load current drawn by a transformer is nearly _____ of the full load current

- A. 10%
- B. 20%
- C. 4%
- D. 8%

9. The eddy current losses in a transformer is reduced
- A. if laminations are thick
 - B. if the number of turns in primary winding is reduced
 - C. if the number of turns in secondary winding is reduced
 - D. if laminations are thin
10. The efficiency of a transformer will be maximum when _____
- A. leakage reactances of the two windings are equal
 - B. resistances of the two windings are equal
 - C. copper loss is equal to constant loss
 - D. none of the above

UNIT-5

1. Which one of the following is not a semiconductor material ?
- A. Gallium arsenide
 - B. Indium
 - C. Germanium
 - D. Silicon
2. Doping of the semiconductor is
- A. The process of purifying semiconductor materials
 - B. The process of converting pure semiconductor material into some form of active device like diode, transistor etc
 - C. The process of adding impurities to the semiconductor material
 - D. One of the processes used in fabricating ICs
3. The dynamic resistance of the semiconductor diode is
- A. Its resistance when it is forward biased
 - B. Its resistance when it is reverse biased
 - C. The ac opposition to the current flow
 - D. None of these
4. The capacitance of the reverse biased p-n junction
- A. Increases as the reverse bias is decreased
 - B. Increases as the reverse bias is increased
 - C. Depends on the reverse saturation current
 - D. None of these
5. When the diode is reverse biased it is equivalent to
- A. Open switch
 - B. On switch
 - C. Low resistance
 - D. Medium resistance