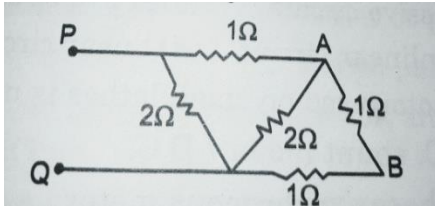


1. How much energy is stored by a 100 mH inductance when a current of 1A is following through it?

- a) 0.005 J b) 0.5 J
c) 5.0 J d) 0.05 J

[SSC. (JE)-2015]

2. For the circuit shown below, find the resistance between points P & Q.



- a) 1Ω b) 2Ω c) 3Ω d) 4Ω

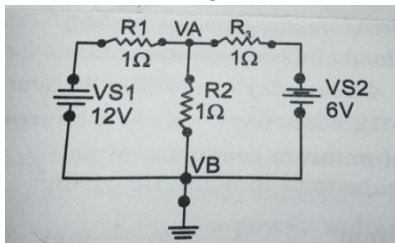
[SSC. (JE)-2015]

3. The rate of change of current in a 4 H inductor is 2 Amps/sec. Find the voltage across inductor.

- a) 16V b) 8V c) 2V d) 0.8V

[SSC. (JE)-2015]

4. Find the node voltage V_A .



- a) 6V b) 5.66V c) 6.66V d) 5V

[SSC. (JE)-2015]

5. In a pure inductive circuit if the supply frequency is reduced to 1/2, the current will?

- a) be four times as high
b) be doubled
c) be reduced by half
d) be reduced to one fourth

[SSC. (JE)-2015]

6. When a source is delivering maximum power to the load, the efficiency will be?

- a) below 50% b) above 50%
c) 50% d) maximum

[SSC. (JE)-2015]

7. The internal resistance of a voltage source is 10Ω and has 10 volts at its terminals. Find the

maximum power that can be transferred to the load

- a) 25 W b) 5 W c) 0.25 W d) 2.5 W

[SSC. (JE)-2015]

8. A node in a circuit is defined as a

- a) closed path
b) group of interconnected elements
c) open terminal of an elements
d) junction of two or more elements

[SSC. (JE)-2015]

9. The area of the hysteresis loop will be least for one of the following materials. It is?

- a) wrought iron
b) silicon steel
c) hard steel
d) soft iron

[SSC. (JE)-2015]

10. The magnitude of AT required establishing a given value of flux in the air gap will be much greater than that required for Iron part of a magnetic circuit, because:

- a) air is a gas
b) air is a good conductor of magnetic flux
c) air has the lowest relative permeability
d) iron has the lowest permeability

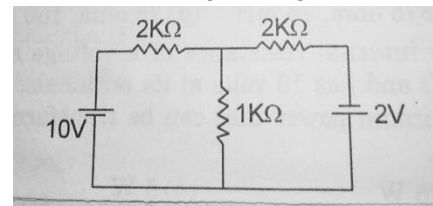
[SSC. (JE)-2015]

11. The unit of luminous flux is

- a) candela b) lumen
c) lux d) steradian

[SSC. (JE)-2015]

12. The voltage across the $1k\Omega$ resistor of the network shown in the given figure is



- a) 1 V b) 4 V c) 2 V d) 6 V

[SSC. (JE)-2015]

13. For painful shock, what is the range of electric shock current at 50 Hz?

- a) 0 – 1 mA b) 3 – 5 mA
c) 0 – 3 mA d) 5 – 10 mA

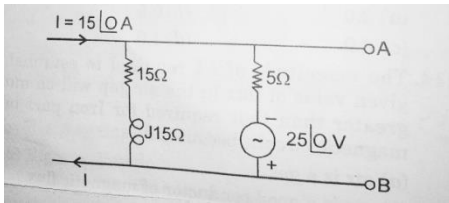
[SSC. (JE)-2015]

14. What is the power consumed by the resistor of 20Ω connected across 100 V source?

- a) 300 W b) 100 W c) 500 W d) 50 W

[SSC. (JE)-2015]

15. For the circuit shown in figure, the Norton's equivalent current source at terminals A & B is given by:



- a) $20\angle 0^\circ\text{A}$
b) $10\angle 0^\circ\text{A}$
c) $14\angle 36.86^\circ\text{A}$
d) $16\angle 36.86^\circ\text{A}$

[SSC. (JE)-2015]

16. Thevenin's theorem cannot be applied to:

- a) passive circuit b) active circuit
c) nonlinear circuit d) linear circuit

[SSC. (JE)-2015]

17. There are 3 lamps 40 W , 100 W and 60 W . To realise the full rated power of the lamps they are to be connected in:

- a) Parallel only b) Series or parallel
c) Series only d) Series-parallel

[SSC. (JE)-2015]

18. In a three-phase system, the volt ampere rating is given by?

- a) $3V_L I_L$ b) $V_{ph} I_{ph}$
c) $V_L I_L$ d) $\sqrt{3}V_L I_L$

[SSC. (JE)-2015]

19. A linear circuit is one whose parameters:

- a) None of the options
b) change with change in current
c) change with change in voltage
d) do not change with voltage and current

[SSC. (JE)-2015]

20. The unit for permeability is:

- a) $\frac{Wb}{At \times m}$ b) $\frac{At}{m}$

- c) Wb d) $\frac{At}{Wb}$

[SSC. (JE)-2015]

21. The Superposition theorem is used when the circuit contains:

- a) a single voltage source
b) passive elements only
c) active elements only
d) a number of voltage sources

[SSC. (JE)-2015]

22. One sine wave has a period of 2 ms , another has a period of 5 ms , and other has a period of 10 ms . Which sine wave is changing at a faster rate?

- a) all are at the same rate
b) sine wave with period 2 ms
c) sine wave with period of 10 msec
d) sine wave with period 5 ms

[SSC. (JE)-2015]

23. An active elements in a circuit is one which:

- a) dissipates energy
b) receives energy
c) both receives and supplies
d) supplies energy

[SSC. (JE)-2015]

24. If in an R-L-C series circuit, the frequency is below the resonant frequency, then

- a) $X_C < X_L$ b) $X_C > X_L$
c) $X_C = X_L$ d) None of the options

[SSC. (JE)-2015]

25. If the power factor is high, then the consumer maximum KVA demand:

- a) increases
b) remains constant
c) becomes Zero
d) decreases

[SSC. (JE)-2015]

26. During the resistance welding, the heat produced at the joint is proportional to?

- a) Current b) Volt-Ampere
c) I^2R d) Voltage

[SSC. (JE)-2015]

27. An RLC series circuit has $R = 10\Omega$, $L = 2H$. What value of capacitance will make the circuit damped?

- a) 0.02 F b) 0.2 F
c) 0.4 F d) 0.08 F

[SSC. (JE)-2015]

28. A primary cell has an emf of 1.5 V. When short circuited, it gives a current of 3 A. The internal resistance of cell is?

- a) 0.5 Ω b) 0.2 Ω c) 2 Ω d) 4.5 Ω

[SSC. (JE)-2015]

29. Electrical Resistivity ρ is :

- a) High for copper as well as for alloy
b) Low for copper and high for alloy
c) High for copper and low for alloy
d) Low for copper as well as for alloy

[SSC. (JE)-2015]

30. In dc operation of flouroscent tube, the life of the tube

- a) Remain same
b) Decreased by about 80% as that with ac operation
c) May increase or decrease
d) Increases by about 80% as that with ac operation

[SSC. (JE)-2015]

31. If the number of turns of a coil is increased, its inductance.

- a) none of the options
b) is increased
c) is decreased
d) remains the same

[SSC. (JE)-2015]

32. A resistor is connected across a 50 V source. The current in the resistor if the colour code is red, orange, orange, silver is?

- a) 21.4 mA b) 2 mA
c) 2.2 mA d) 214 mA

[SSC. (JE)-2015]

33. Mutual inductance between two coils is 4 H. If current in one coil changes at the rate of 2A/sec, then emf induced in the other coil is?

- a) 8 V b) 2 V c) 0.5 V d) 5.0 V

[SSC. (JE)-2015]

34. The e.m.f. induced in a coil of N turns is given by:

- a) $N \frac{d\phi}{dt}$ b) $-N \frac{d\phi}{dt}$
c) $\frac{d\phi}{dt}$ d) $N \frac{dt}{d\phi}$

[SSC. (JE)-2015]

35. A bar of Iron 1 cm² in cross-section has 10⁻⁴ wb of magnetic flux in it. If $\mu_r = 2000$. What is the magnetic field intensity in the bar?

- a) $796 \times 10^3 \frac{AT}{m}$
b) $398 \frac{AT}{m}$
c) $398 \times 10^{-4} \frac{AT}{m}$
d) $398 \times 10^4 \frac{AT}{m}$

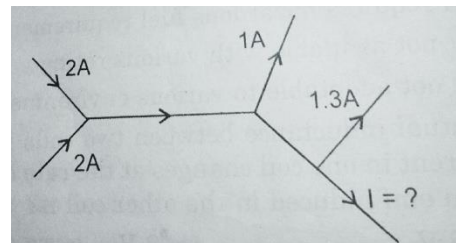
[SSC. (JE)-2015]

36. An electric heater draws 3.5 A from a 110 V source. The resistance of the heating elements is approximately?

- a) 31 Ω b) 3.1 Ω c) 385 Ω d) 38.5 Ω

[SSC. (JE)-2015]

37. The current "I" in the electric circuit shown below is?



- a) 3.7 A b) 1 A c) 2.7 A d) 1.7 A

[SSC. (JE)-2015]

38. In a Parallel RLC circuit if the lower cut-off frequency is 2400 Hz and the upper cut off frequency is 2800 Hz. What is the band width?

- a) 2800 Hz b) 2400 Hz
c) 400 Hz d) 5200 Hz

[SSC. (JE)-2015]

39. If $750 \mu A$ is flowing through $11 k\Omega$ of resistance, what is the voltage drop across the resistor?

- a) 14.6 V b) 146 V
c) 82.5 V d) 8.25 V

[SSC. (JE)-2015]

40. If two capacitance C_1 and C_2 are connected in parallel then the equivalent capacitance is given by

- a) $C_1 C_2$ b) $\frac{C_1 C_2}{C_1 + C_2}$
c) $C_1 + C_2$ d) $C_1 | C_2$

[SSC. (JE)-2015]

41. If the co-efficient of coupling between two coils is increased, mutual inductance between the coils

- a) changes depends on current only
b) is increased
c) is decreased
d) remains unchanged

[SSC. (JE)-2015]

42. When a series RL circuit is connected to a voltage source V at $t = 0$, the current passing through the inductor L at $t = 0^+$ is

- a) infinite b) $\frac{V}{L}$
c) zero d) $\frac{V}{R}$

[SSC. (JE)-2015]

43. In an R-L series circuit, the phase difference between applied voltage and circuit current will increase if

- a) X_L is increased
b) R is increased
c) X_L is decreased
d) supply frequency is decreased

[SSC. (JE)-2014]

44. A series circuit has $R = 4\Omega$, $X_L = 12\Omega$ and $X_C = 9\Omega$ and is supplied with $200 V$, $50 Hz$. Calculate the power.

- a) 6400 W b) 8000 W
c) 14, 400 W d) 19,200 W

[SSC. (JE)-2014]

45. Two sinusoidal currents are given by the equations $i_1 = 50 \sin(\omega t + \frac{\pi}{4})$ and

$i_2 = 25 \sin(\omega t + \frac{\pi}{6})$. The phase difference

between them is _____ degrees.

- a) 15 b) 30 c) 45 d) 75

[SSC. (JE)-2014]

46. The reactance of 1 farad capacitance when connected to a DC circuit is

- a) infinite b) 1Ω
c) 0.5Ω d) zero ohms

[SSC. (JE)-2014]

47. A supply voltage of $230 V$, $50 Hz$ is fed to a residential building. Write down its equation for instantaneous value.

- a) $163 \sin 314.16 t$
b) $230 \sin 314.16 t$
c) $325 \sin 314.16 t$
d) $361 \sin 314.16 t$

[SSC. (JE)-2014]

48. Magnetic lines of force coming from a magnet

- a) intersect at infinity
b) intersect within the magnet
c) cannot intersect at all
d) cancel at pole faces

[SSC. (JE)-2014]

49. The main advantage of temporary magnets is that we can

- a) change the magnetic flux
b) use any magnetic material
c) decrease the hysteresis loss
d) magnetize without any source

[SSC. (JE)-2014]

50. The magnetic material used in permanent magnets is

- a) iron b) soft steel
c) nickel d) hardened steel

[SSC. (JE)-2014]