BASIC ELECTRICAL MOSTLY ASKED 125 QUESTIONS AND ANSWERS

1.What will be the resistance if 10 resistors of 10 ohm each is connected in series

(A)100 Ω (B)1 Ω (C) 0.1 Ω (D)10 Ω.

ANSWER-A

2.Resistivity of a wire depends on

(A) length (B) material (C) cross section area (D) All of the above.

ANSWER-B

3. Which of the following is not the same as watt?

(A) joule/sec (B) amperes/volt (C) amperes x volts (D) (amperes)^2 x ohm.

ANSWER-B

4.Ohm's law is not applicable to

(A) DC circuits (B) high currents (C) small resistors (D) semi-conductors.

ANSWER-D

5.A wire of resistance R has it length and cross-section both doubled. Its resistance will become

(A) 4 R (B)2 R (C) R (D) R / 4.

ANSWER-C

6.The rating of fuse wire is expressed in terms of

(A) Ohms (B) Mhos (C) Amperes (D) Watts.

ANSWER-C

7. For maximum transfer of power, internal resistance of the source should be:

(A) Equal to load resistance (B) Less than that of the load
(C) More than that of the load (D) Zero

ANSWER-A

8.Thevenin's theorem can be applied to network containing

(A) Passive elements only (B) Active elements only

(C) Linear elements only (D) All of these

ANSWER-D

9. Which of the following theorems helps in simplifying computations when the load across a circuit is varying?

(A) Superposition (B) Norton's (C) Thevenin's (D) Maximum power transfer

ANSWER-D

10.When maximum power transfer takes place, the efficiency of power transfer of the circuit is

(A) 100% (B) 75% (C) 50% (D) 25%

ANSWER-C

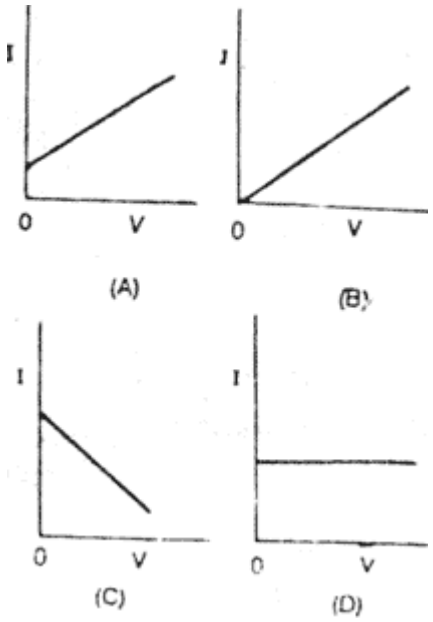
11. The superposition theorem requires as many circuits to be solved as there are:

(A) Nodes (B) Sources (C) Nodes and Sources (D) Nodes, Sources and Mesh

ANSWER-B

12. An ideal voltage source should have:
(A) Zero source resistance (B) Infinite source resistance
(C) Terminal voltage is proportional to current
(D) Open-circuit voltage nearly equal to voltage of the load current
ANSWER-A

13.In which figure the relationship between voltage V and current I is in accordance with Ohm's law ?



(A) Figure A (B) Figure B (C) Figure C (D) Figure D.
ANSWER-B

14.A passive element in a circuit is one which

(A)Receives energy (B) Supplies energy (C) both supplies and receives energy (D) none

ANSWER-A

15.Unit of electric potential

(A) Ampere (B) Volts (C) coulomb (D) Volt-ampere
ANSWER-B

16.If a flux of Φ Weber's links with a coil of N turns , the induced voltage in the coil is given by

(A) N dΦ/dt (B) –N dΦ/dt (C) NBlu (D) none
ANSWER-B

17.Whenever there is a relative motion of a coil & a magnetic field, a voltage is induced in the coil. Such a voltage is called

(A) Statically induced voltage (B) Dynamically induced voltage

(C) Self-induced voltage (D) Mutually induced voltage

ANSWER-B

18.The polarity of the induced voltage is determined by ;

(A) Ampere's law (B) Lenz's law (C) Kirchhoff's law (D) Right hand rule
ANSWER-B

19.Two resistors each of 4Ω and 12Ω are connected in parallel and the parallel combination is connected in series with a 2 Ω resistor. If this circuit is connected across a 100V supply , the total current drawn is
(A) 50A (B) 25A **(C)20A** (D)2A

20.The energy stored in an inductor of inductance L henry is represented by

(A)i^2L (B)iL^2 (C)L^2/i **(D) (1/2) Li^2**

21.The voltage induced in an inductor of L henry is represented by
(A)Li (B) L/I **(C) L di/dt** (D) None of these

22.Which of these is not an expression for the energy stored in a capacitor?
(A) $1/2CV^2$ (B) C∫vdv(C) ∫pdt **(D) QV^2**

23.Which of the elements in the following is not bilateral?

(A) Resistor (B) Inductor (C) Capacitor **(D) Transistor**

24.A node in a network is defined as a
(A) Closed path **(B) Junction point of two or more branches**

(C) Group of interconnected elements (D) All of these

25.Which of the following is not a unit of conductance?]
(A) mho (B) Siemens **(C) Volt/ampere** (D) Ampere/volt

26.Three capacitors, each of C microfarad are first connected in series and then in parallel. The equivalent capacitance
(A) Is greater in the series combination (B) Is greater in the parallel combination

(C) Is the same in the two combination (D) None of these
ANSWER-B

27.Two resistances R_1 and R_2 give combined resistance of 4.5 ohms when in series and 1 ohm when in parallel. The resistances are
(A) 3 ohms and 6 ohms (B) 3 ohms and 9 ohms

(C) 1.5 ohms and 3 ohms (D) 1.5 ohms and 0.5 ohms
ANSWER-C

28. A Material having a charge of 12 coloumbs over 6 second what is current flowing through the material

A) 3 AMPS B)2 AMPS

C) 4 AMPS D) 10AMPS

ANSWER-B

29.The Potential Difference between Two terminals of Resistor is 10V, Current flowing is 5A, What is the value of Resistance

A) 2Ω B) 1.5 Ω

C) 1.5 Ω D) None Of These

ANSWER-A

30.Four resistors each of 20Ω are connected in parallel, the total resistance is

A) 80Ω B) 5Ω

C) 5Ω D) None Of These

ANSWER-C

31.OneFarad Is Equal To

A) 1Ω B) 1 V/C

C) 1C/V D) None Of These

ANSWER-C

32.Two resistors each of 4Ω and 12Ω are connected in parallel and the parallel combination is connected in series with a 2 Ω resistor. What is the Equivalent Resistance?

A) 50Ω B) 5Ω

C) 20Ω D) 2Ω

ANSWER-B

33.The unit of resistance is

A) Ohms B) Volts

C) Amperes D) Tesla

ANSWER-A

34. Circuit is defined as

A) Interconnection OfCircuit Elements With Closed Path

B) Interconnection OfCircuit Elements With Out Any Closed Path

C) Interconnection Of With Out Circuit Elements

D)None of these

ANSWER-A

35.In Series Connection of elements_____Parameter is Same

a) Current b)Voltage

c) Power d)None of these

ANSWER-A

36.In parallel Connection of elements_____Parameter is Same

a) Current b)Voltage

c) Power d)None of these

ANSWER-A

37. A Loop in a Circuit is defined as a

a) Closed path b) Junction point of two or more branches

c) inter connected elements d) All of these

ANSWER-A

38.KCL is applicable at

a) A Junction b) Resistor c) Loop d) All of these

ANSWER-A

39. KVL is applicable at

a) A Junction b) Resistor

c) Closed Loop d) All of these

ANSWER-C

40.Super-Position Theorem is applicable for a

a) Linear Bilateral Network b) Non- Linear Bilateral Network

c) Linear Uni-ateral Network d)All the above

ANSWER-A

41.Faradays- First law the induced EMF is

a) Dynamically Induced EMF b) Statically Induced EMF

c) Eddy EMF d) None of these

ANSWER-A

42.Faradays- second law the induced EMF is

a) Dynamically Induced EMF b) Statically Induced EMF

c) Eddy EMF d) None of these

ANSWER-B

43.The direction of dynamically Induced EMF can be determined with the help of

a) Lenz's Law b) Flemings Left Hand Rule

c) Flemings Right Hand Rule d) None of these

ANSWER-B

44. The self inductance is written as follows

a) L=NØ/I b) L=Ø/I

c) L=V/dI/dt d) All

ANSWER-D

45. Thevenin's Voltage is

a) Open circuit voltage b) Short Circuit Voltage

c) Closed Circuit voltage d) None of these

ANSWER-A

46. Ohm's Law is Applicable at_____Conditions

a) Constant Temperature b) Constant Pressure

c) Constant Volume d) None of These

47. The unit of inductance is

a) ohms b) Volts

c) Amperes **d) Henry**

48. The unit of capacitance is

a) ohms **b) Farads**

c) Amperes d) Tesla

49. An inductor stores_____energy

a)Electrical energy **b) Magnetic energy**

c) mechanical energy d) All

50. Magnetic flux has he unit of _____

a) Newton b) Ampere turn

c) Weber d) Tesla

ANSWER-C

51.If $E_1 = A\sin\omega t$ and $E_2 = A\sin(\omega t - \theta)$, then

A)E1& E2 are in phase B) E2 lags E1by θ C) E1 lags E2by θ D) E2 lags E1by 90^0

ANSWER-B

52.The equation for 25 cycles current sine wave having rms value of 30 amps, will be

A) $42.4\sin 50\pi t$ B) $42.4\sin 25\pi t$ C) $30\sin 25\pi t$ D) $30\sin 25\pi t$

ANSWER-A

53.The rms value of sinusoidal voltage wave $V = 200\sin\omega t$, is

A) $200/\sqrt{2}$ V B) $100/\sqrt{2}$ V C) $200\sqrt{2}$ V D) $100\sqrt{2}$ V

ANSWER-A

54.The value of supply voltage for 400 W, 4 Ω load

is **A) 40 V** B) 20 V C) 100 V D) 1600 V

4.What is represented by the hypotenuse of impedance triangle?

A) Impedance drop B) Resistance C) reactance D)apparent power

6.The phase angle difference between current and voltage is 90°, the power will be

A) zero B) maximum C)minimum D)VI
ANSWER-A

7. A series R - L - C circuit has R = 1 Ω, L = 1 H and C = 1 F connected across a voltage and line current is 1 A, find energy consumed in one hour

A) 36 J B)360 J C)3600 J D)1 J
ANSWER-C

8. Power consumed in Resistor is

A)VI **B)VIcosϕ** C)VI sinϕ D)VI tanϕ

9.In pure inductive circuit current_____voltage by 90^0

A)lead **B)lag** C)in phase with D) none

10.power consumed by capacitor is

A)VI **B) 0** C) VI sinϕ D) VIcosϕ

11.RMS Value of sinusoidal Voltage is

A) Vm/√2 B) 0 C) VI /sinϕ D) VI/cosϕ
ANSWER-

12.Average Value of sinusoidal Voltage is

A) Vm/√2 B) 2Vm/π C) VI /sinϕ D) VI/cosϕ
ANSWER-B

13.Form factor of sinusoidal Voltage is

A) 1.11 B) 2 C) 3 D) 4
ANSWER-A

14. Peak factor of sinusoidal Voltage is

A)1.11 B) 2 C)√2 D) 4
ANSWER-C

15.Direction of Induced EMF is given by

A)Flemings Right hand rule B) Flemings Left hand rule C)Faraday Law D) Lenzs Law

ANSWER-A

16.The direction of magnetic field is from

A)North-south B) South-North C)Both D)None of these
ANSWER-A

17.Power factor CosΦ=

A)ZR B)RZ C)R/Z D)Z/R
ANSWER-C

18.In symmetrical wave RMS Value is calculated for

A) one Alternation B) Full Cycle C)Both D) None
ANSWER-A

19.For Half wave Rectifier Second alternation is

A)ZERO B) Positive C)Negative D) None
ANSWER-A

20.50HZ Means

A) 1 cycle/sec B) 2 Cycles/sec C)50 Cycles/sec D)50 Cycles/min
ANSWER-C

21. How many cycles does a sine wave go through in 10s when its frequency is 60HZ (A)10 cycles (

ANSWER-C

22. If the peak value of a certain sine wave voltage is 10V, what is the peak to peak value?

(A) 20V (B) 10V (C) 5V (D) 7.07V
ANSWER-D

23. If the peak value of a sine wave voltage is 5V, then rms value is (A) 0.707V (B) 3.53

ANSWER-B

24. A phasor represents

(A)Magnitude of the quantity (B)width of the quantity

(C) Magnitude & direction of the quantity D) Phase angle of quantity
ANSWER-C

25. The form factor is the ratio of

(A) peak value to r.m.s. value (B)r.m.s. value to average value

(C) average value to r.m.s. value (D) none
ANSWER-B

26. Two waves of the same frequency have opposite phase when the phase angle between them Is

(A)360° (B) 180° (C) 90° (D) 0°
ANSWER-B

27. True Power Is Also Called As_____

(A) Active Power (B) Real Power (C) Reactive Power (D) Both A &B
ANSWER-D

28. Peak Factor Gives
(A) Peak Value To R.M.S. Value
(B) Average Value To Peak Value
(E) R.M.S. Value To Average Value
(D) R.M.S. Value To Peak Value
ANSWER-A

29. For A Frequency Of 200 Hz, The Time Period Will Be

(A) 0.05 S(B) 0.005 S(C) 0.0005 S(D) 0.5 S
ANSWER-B

30. Power Factor Of An Electrical Circuit Is Equal To
(A) R/Z(B) Cosine Of Phase Angle Difference Betweencurrent And Voltage
(C) Kw/Kva(D) Ratio Of Useful Current To Total Currrent iw/I
(E) All Above
ANSWER-E

31. The Apparent Power Drawn By An A.C. Circuit Is 10 Kva And Active Power Is 8 Kw. The Reactive Power In The Circuit Is
(A) 4 Kvar
(B) 6 Kvar
(C) 8 Kvar
(D) 16 Kvar
ANSWER-B

32. In An A.C. Circuit Power Is Dissipated In
(A) Resistance Only (B) Inductance Only
(C) Capacitance Only (D) None Of The Above
ANSWER-A

33. A Phasor Is
(A) A Line Which Represents The Magnitude And Phase Of An Alternating Quantity
(B) A Line Representing The Magnitude And Direction Of An Alternating Quantity
(C) A Coloured Tag Or Band For Distinction Between Different Phases Of A 3phase Supply
(D) An Instrument Used For Measuring Phases Of An Unbalanced 3phase Load
ANSWER-B

34. Ohm Is Unit Of All Of The Following Except
(A) Inductive Reactance(B) Capacitive Reactance
(C) Resistance (D) Capacitance
ANSWER-D

35. The Product Of Apparent Power And Cosine Of The Phase Angle Between Circuit Voltage And Current Is
(A) True Power (B) Reactive Power
(C) Voltamperes (D) Instantaneous Power
ANSWER-A

36. The Product Of Apparent Power And Sine Of The Phase Angle Between Circuit Voltage And Current Is

(A) True Power (B) Reactive Power
(C) Voltamperes (D) Instantaneous Power
ANSWER-B

37. Which Power Of The Following Is The Product Of Voltage And Current Is

(A) True Power (B) Reactive Power
(C) Voltamperes (D) Instantaneous Power
ANSWER-C

38. The Power Factor Of A D.C. Circuit Is Always
(A) Less Than Unity (B) Unity
(C) Greater Than Unity (D) Zero
ANSWER-D

39. The Safest Value Of Current The Human Body Can Carry For More Than 3 Second Is
(A) 4 ma (B) 9 ma (C) 15 ma (D) 25 ma
ANSWER-B

40. Power Factor Of The Following Circuit Will Be Unity
(A) Inductance (B) Capacitance
(C) Resistance (D) Both (A) And (B)
ANSWER-C

41. Power Factor Of The Following Circuit Will Be Leading
(A) Resistance
(B) Inductance
(C) Capacitance
(D) Both (B) And (C)
ANSWER-C

42. The Units For Capacitor Is

(A) Farads (B) Henry (C) Ohms (D) None
ANSWER-A

43 Formula For Coefficient Of Coupling Is

A) $K=\sqrt{L1L2}$ B) $K=M/\sqrt{L1L2}$

C)$K=\sqrt{M+L2}$ D) $K=M\sqrt{L1/L2}$
ANSWER-M

44. The Units For Current Is

(A) Farads (B) Henry (C) Ohms (D) Ampere
ANSWER-D

45. All The Rules And Laws Of D.C. Circuit Also Apply To A.C. Circuit Containing
(A) Capacitance Only
(B) Inductance Only
(C) Resistance Only
(D) All Above
ANSWER-D

46. Power Factor Of The System Is Kept High
(A) To Reduce Line Losses
(B) To Maximise The Utilization Of The Capacities OfGenerators, Lines And Transformers
(C) To Reduce Voltage Regulation Of The Line
(D) Due To All Above Reasons
(E) ANSWER-D

47. The Units For Resistance Is

(A) Farads (B) Henry (C) Ohms (D) Voltage

ANSWER-C

48. Power Factor Of An Inductive Circuit Is Usually Improved By Connecting Capacitor to it in

(A) Parallel
(B) Series
(C) Either (A) Or (B)
(D) None Of The Above

49. The Range Of Power Factor Value

(A) [1 1] **(B) [-1 1]** (C) [1 0] (D) [0 0.5]

50. For A Sine Wave With Peak Value Imax The R.M.S. Value Is
(A) 0.5 Imax
(B) 0.707
(C) 0.9
(D) 1.414 Lmax

ANSWER-B

1. The copper loss is a_____loss
   A)Fixed **B) Variable** C) fixed & variable D) all of the above.
2. Core type transformer is a_____circuit.
   A)Single **B) double** C) Single &double D) none of these
3. In Shell type transformers the core has_____limbs
   A)One B) two **C) three** D) four
4. The transformer is a_____converting device
   A)Voltage B) current C) frequency D) power
5. Which supply is used for the transformers
   A)DC B) AC & DC **C) AC** D) All of the above
6. Input to a alternator is
   A)A.C B)D.C **C) both A.C &D.C** D)NONE
7. E.M.F equation of alternator is
   A)2.22fϕz B) 22.2fϕz B C) 222fϕZ D) 2.1fϕz
8. Alternator working principal is
   A)electromagnetic induction B)self inductance C) mutual inductance D)back emf
9. Salient pole type is also known as
   A)projecting pole B)non-projecting pole C)cylindrical D)non- cylindrical
10. In alternator frequency f=
    A)NP/120 B)NP120 C)N/120P D)1/NP120

11. Laminated insulations coated with varnish are normally used in the transformer

A) To reduce reluctance of magnetic path B) To reduce the effect of eddy current

C) To reduce the hysteresis effect D) To increase the reluctance of magneticpath

12. Transformer is a device which

A) Work through on electric induction. **B) Can step up or step down the level of voltage.**

C) All of these D) Its Working without changing the Power.

13. The transformer turns ratio determines

A) the reflected impedance B)the ratio of primary and secondary voltages

C) the ratio of primary and secondary currents **D) All of these**

14. A transformer has

A) primary and secondary windings, both of which are considered outputs

B) primary and secondary windings, both of which are considered inputs

C) a primary winding used as an output and a secondary winding used asan input

D) a primary winding used as an input and a secondary winding used as an output

15. The rating of transformer may be expressed in

A) kW **B)KVA** C) Horse power D) KVAR

16. An induction motor works with

A) DC only B) AC only **C)both AC & DC** D) none.

17. The relative speed between stator and rotor fluxes is equal to

A) Synchronous speed Ns B) Rotor speed N

C) Zero D) Ns – N

18.The number of poles in a 3-phase induction motor is determined by

A) supply frequency B) Motor speed

C) Both (A) & (B) D) Supply voltage

19. In modern alternators the rotating part is _____

A) Field B) Armature C) Both D)None

20.The rotor preferred for a low speed hydrogenerator is _____

A) Salient pole B)Non salient pole C) Both D)None

21. Which of the following energy can be easily transformed from one form to another form of energy?

A) Electrical Energy B)Fusion energy C)Magnetic energy D)Mechanical energy

22. The thickness of a 50 Hz transformer lamination is

A) 0.35 mm B) 0.30 cm C) 0.35 cm D) 0.33 m

23. If a sinusoidal exciting current is applied to a transformer, the mutual flux produced is

A)Zero B) Sinusoidal C) Flat top D) Negative

ANSWER-C

21. The voltage regulation of a transformer at full-load 0.8 power factor lag is 6 per cent. Its voltage regulation at full-load 0.8 power factor lead will be

A)Zero B) Positive C) 54% D) Negative

ANSWER-D

22. Transfer of electrical power from primary to secondary in a transformer takes place

A)Electrically B) Magnetically C)None of these D) Electromagnetically

ANSWER-D