

BASICS OF ELECTRICAL AND ELECTRONICS ENGINEERING [102001203]

Multiple Choice Questions Electrical section

1	An instrument which detects electric current is known as (a) Voltmeter (b) Wattmeter (c) Rheostat (d) Galvanometer
2	The resistance of a conductor varies inversely as (a) Length (b) Area of Cross-Section (c) Temperature (d) Resistivity
3	Kilowatt-hour (kWh) is a unit of (a) Current (b) Power (c) Energy (d) Resistance
4	The resistance of a 100 W, 200 V lamp is (a) 100 ohms (b) 200 ohms (c) 400 ohms (d) 1600 ohms
5	Ohm's law is not applicable to (a) DC Circuits (b) AC Circuits (c) Small Resistance (d) Semi-conductors
6	A wire of resistance R has its length and cross section both doubled. Its resistance will become (a) 4R (b) 2R

	<p>(c) R</p> <p>(d) R/4</p>
7	<p>Many resistors connected in series will</p> <p>(a) Divide the voltage proportionally among all the resistors</p> <p>(b) Divide the current proportionally</p> <p>(c) Increase the source voltage in proportion to the values of the resistors</p> <p>(d) Reduce the power to zero</p>
8	<p>It is preferable to connect the bulbs in</p> <p>(a) Series</p> <p>(b) Parallel</p> <p>(c) Both series and parallel</p> <p>(d) Neither series nor parallel</p>
9	<p>For high frequencies, capacitor acts as</p> <p>(a) Open circuit</p> <p>(b) Short circuit</p> <p>(c) Amplifier</p> <p>(d) Rectifier</p>
10	<p>A 250 V bulb passes a current of 0.3 A. Calculate the power in the lamp.</p> <p>(a) 75 W</p> <p>(b) 50 W</p> <p>(c) 25 W</p> <p>(d) 90 W ,</p>
11	<p>One kilowatt hour of electrical energy is the same as</p> <p>(a) 36×10^5 watts</p> <p>(b) 36×10^5 ergs</p> <p>(c) 36×10^5 joules</p> <p>(d) 36×10^5 B.T. U</p>
12	<p>Capacitance increases with</p> <p>(a) Increase in plate area</p> <p>(b) Decrease in plate area</p> <p>(c) Increase in distance between the plates</p> <p>(d) Increase in density of the material</p>

13	<p>Which among the following expressions relate charge, voltage and capacitance of a capacitor?</p> <p>(a) $Q = C/V$</p> <p>(b) $Q = V/C$</p> <p>(c) $Q = CV$</p> <p>(d) $C = Q^2V$</p>
14	<p>What is the total capacitance when three capacitors, C_1, C_2 and C_3 are connected in parallel?</p> <p>(a) $C_1/(C_2+C_3)$</p> <p>(b) $C_1+C_2+C_3$</p> <p>(c) $C_2/(C_1+C_3)$</p> <p>(d) $1/C_1+1/C_2+1/C_3$</p>
15	<p>Why does capacitor block dc signal at steady state?</p> <p>(a) due to high frequency of dc signal</p> <p>(b) capacitor does not pass any current at steady state</p> <p>(c) Capacitors can not be charged with DC Supply</p> <p>(d) due to zero frequency of dc signal</p>
16	<p>What is the unit for relative permittivity?</p> <p>(a) F/m</p> <p>(b) F</p> <p>(c) F/m^2</p> <p>(d) No unit</p>
17	<p>The rms value is _____ times the maximum value.</p> <p>(a) 1.414</p> <p>(b) 0.5</p> <p>(c) 2</p> <p>(d) 0.707</p>
18	<p>Inductor does not allow sudden changes in</p> <p>(a) Voltage</p> <p>(b) Current</p> <p>(c) Resistance</p> <p>(d) Inductance</p>

19	<p>In an inductive circuit, the current _____ the voltage</p> <p>(a) Leads</p> <p>(b) Lags</p> <p>(c) Is in phase with</p> <p>(d) Smaller than</p>
20	<p>What will be the current during the resonance condition for R-L-C Series Circuit?</p> <p>(a) $V / (X_L + X_C)$</p> <p>(b) $V / (X_L - X_C)$</p> <p>(c) 0</p> <p>(d) V/R</p>
21	<p>The Powerfactor of an electrical circuit having, resistance $R=8\ \Omega$ and inductive reactance $X_L=6\ \Omega$ is</p> <p>(a) 0.8</p> <p>(b) 0.6</p> <p>(c) 1</p> <p>(d) 0</p>
22	<p>What is the value of the form factor for sinusoidal current?</p> <p>(a) $\pi/2$</p> <p>(b) $\pi/4$</p> <p>(c) 2π</p> <p>(d) $\pi/\sqrt{2}$</p>
23	<p>According to Faraday's laws of electromagnetic induction, an emf is induced in a conductor whenever</p> <p>(a) The conductor is perpendicular to the magnetic field</p> <p>(b) Lies in the magnetic field</p> <p>(c) Cuts magnetic lines of flux</p> <p>(d) Moves parallel to the magnetic field</p>
24	<p>The time period of a sine wave is 0.02 seconds, its frequency is</p> <p>(a) 20 Hz</p> <p>(b) 30 Hz</p> <p>(c) 40 Hz</p>

	(d) 50 Hz
25	<p>When a sinusoidal voltage is applied across R-L parallel circuit so that $R = X_L$ the phase angle will be</p> <p>(a) 45° lagging</p> <p>(b) 45° leading</p> <p>(c) 90° lagging</p> <p>(d) 90° leading</p>
26	<p>We laminate transformer core to reduce</p> <p>(a) eddy current loss</p> <p>(b) hysteresis loss</p> <p>(c) both eddy current and hysteresis loss</p> <p>(d) ohmic loss</p>
27	<p>Transfer of electric power from primary to secondary in a transformer takes place</p> <p>(a) electrically</p> <p>(b) magnetically</p> <p>(c) electro-magnetically</p> <p>(d) conductively</p>
28	<p>A 230/115 V Transformer is having the number of turns on primary side is 500.What will be the number of turns on secondary side?</p> <p>(a) 250</p> <p>(b) 1000</p> <p>(c) 500</p> <p>(d) 1250</p>
29	<p>A capacitor is charged to a voltage of 400 V and has a resistance of 20 ohm. Calculate the initial value of charging current.</p> <p>(a) 10 A</p> <p>(b) 0 A</p> <p>(c) Infinity</p> <p>(d) 20A</p>
30	<p>An 8 ohms resistor is connected in series with an inductor of 19.11 milli-henry and the whole combination is connected across 100 V, 50 Hz AC Supply, the current drawn by this circuit is</p> <p>(a) 10 A</p> <p>(b) 12.5 A</p>

	(c) 16.67 A (d) 18.86 A
31	<p>If a conductor 0.2m long moves with a velocity of 0.3m/s in a magnetic field of 5T, calculate the emf induced if magnetic field, velocity and length of conductor are mutually perpendicular to each other.</p> <p>(a) 0.3V (b) 0.03V (c) 30V (d) 3V</p>
32	<p>R_{ab} is the resistance between the terminals A and B, R_{bc} between B and C and R_{ca} between C and A. These 3 resistors are connected in delta connection. After transforming to star, the resistance at A(R_a) will be</p> <p>(a) $R_{ab} * R_{ac} / (R_{ab} + R_{bc} + R_{ca})$ (b) $R_{ab} / (R_{ab} + R_{bc} + R_{ca})$ (c) $R_{bc} * R_{ac} / (R_{ab} + R_{bc} + R_{ca})$ (d) $R_{ac} / (R_{ab} + R_{bc} + R_{ca})$</p>
