# Electrician - Block 1 - Module 2 : Basic Electrical - AC circuits

Questions: Level 11How many electrons are there in the copper atom?1How many electrons are there in the copper atom?A8B13C18D292What is the formula to calculate the equivalent resistance (RT) of the three resistors R1, R2 & R3 are connected in parallel circuit?ART = R1 + R2 + R3B $\frac{1}{1}$ + $\frac{1}{R2}$ + $\frac{1}{R3}$ C $R_T = \frac{1}{1}$ + $\frac{1}{R1}$ + $\frac{1}{R2}$ + $\frac{1}{R3}$ D $R_T = \frac{1}{1}$ + $\frac{1}{R2}$ + $\frac{1}{R3}$ D $R_T = \frac{1}{1}$ + $\frac{1}{R2}$ + $\frac{1}{R3}$ C $R_T = \frac{1}{1}$ + $\frac{1}{R2}$ - $\frac{1}{R3}$ D $R_T = \frac{1}{R1}$ + $\frac{1}{R2}$ - $\frac{1}{R3}$ 3What is the name of the resistor?Image: Carbon - film resistorBWire wound resistorCCarbon - film resistorGCarbon - film resistor4What electrical quantifies are related in Ohm's law?4What electrical quantifies are related in Ohm's law?4What is the formula for Reactive Power (Pri in an AC circuit?4What is the formula for resistance5What is the formula for Quantity of electricity(Q)?6What is the formula for Quantity of electricity(Q)?Current x Resistance0Wohn / cm8 $270^\circ$ 9What electrical quantifies are related in Ohm's law?4What is the formula for Reactive Power (Pri in an AC circuit?4What is the formula for React				
AMho1How many electrons are there in the copper atom?A8113C113D292What is the formula to calculate the equivalent resistance (RT) of the three resistors R1, R2 & R3 are connected in parallel circuit?ART = R1 + R2 + R3B $\frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3}$ C $R_T = \frac{1}{K_1 + K_2 + R_3}$ D $R_T = \frac{1}{K_1 + K_2 + R_3}$ D $R_T = \frac{1}{1 + \frac{1}{R_2} + \frac{1}{R_3}}$ C $R_T = \frac{1}{K_1 + R_2 + R_3}$ D $R_T = \frac{1}{R_1 + R_2 + R_3}$ D $R_T = \frac{1}{R_1 + R_2 + R_3}$ AWhat is the name of the resistor?Image: the state of the resistorD $R_T = \frac{1}{R_1 + R_2 + R_3}$ 3What is the name of the resistor?Image: the state of the resistorD $R_T = \frac{1}{R_1 + R_2 + R_3}$ AMetal film resistorD $R_T = \frac{1}{R_1 + R_2 + R_3}$ AMetal film resistorD $R_T = \frac{1}{R_1 + R_2 + R_3}$ C $R_T = \frac{1}{R_1 + R_2 + R_3}$ AMetal film resistorD $R_T = \frac{1}{R_1 + R_2 + R_3}$ C $R_T = \frac{1}{R_1 + R_2 + R_3}$ AMetal film resistorD $R_T = \frac{1}{R_1 + R_2 + R_3}$ C $R_T = \frac{1}{R_1 + R_2 + R_3}$ AMetal film resistorD $R_T = \frac{1}{R_1 + R_2 + R_3}$ B $R_T = \frac{1}{R_1 + R_2 + R_3}$ CCarbon - film resistorDCarbon - film resisto	Questions: Level 1		7	What is the unit of conductance??
1How many electrons are there in the copper atom?BOhm1How many electrons are there in the copper atom?BOhm-m213DOhm/mB113DDOhm/m2What is the formula to calculate the equivalent resistance (RT) of the three resistors R1, R2 & R3 are connected in parallel circuit?BOhm/metree, COhm/metree, CART = R1 + R2 + R3BOhm/metree, COhm/metree, COhm/metree, CB $\frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3}$ CRT = $\frac{1}{R_1 + R_2 + R_3}$ What is the specific resistance value of copper conductor?D $R_T = \frac{1}{R_1 + R_2 + R_3}$ CCurrent x voltage CCurrent x voltage CD $R_T = \frac{1}{R_1 + R_2 + R_3}$ CUWhat is the specific resistance value of copper conductor?D $R_T = \frac{1}{R_1 + R_2 + R_3}$ B1.72 Micro ohm1D $R_T = \frac{1}{R_1 + R_2 + R_3}$ B1.72 Micro ohmD $R_T = \frac{1}{R_1 + R_2 + R_3}$ B1.72 Micro ohmD $R_T = \frac{1}{R_1 + R_2 + R_3}$ B1.72 Micro ohmD $R_T = \frac{1}{R_1 + R_2 + R_3}$ B1.72 Micro ohmD $R_T = \frac{1}{R_1 + R_2 + R_3}$ B1.72 Micro ohmD $R_T = \frac{1}{R_1 + R_2 + R_3}$ B1.72 Micro ohmD $R_T = \frac{1}{R_1 + R_2 + R_3}$ B1.72 Micro ohmD $R_T = \frac{1}{R_1 + R_2 + R_3}$ B1.72 Micro ohmDCorront, resistanceD <td< th=""><th></th><th></th><th>Α</th><th>Mho</th></td<>			Α	Mho
atom? A 8 B 13 C 18 D 29 2 What is the formula to calculate the equivalent resistance (RT) of the three resistors R1, R2 & R3 are connected in parallel circuit? A RT = R1 + R2 + R3 B $\frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3}$ C $R_T = \frac{1}{R_1 + \frac{1}{R_2} + \frac{1}{R_3}}$ C $R_T = \frac{1}{\frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3}}$ D $R_T = \frac{1}{\frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3}}$ D $R_T = \frac{1}{\frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3}}$ D $R_T = \frac{1}{\frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3}}$ A Metal film resistor B Wire wound resistor C Carbon composition resistor D Carbon composition resistor C Carbon composition resistor C Carbon composition resistor C Current, voltage and resisturity C Current x Time B Voltage x Current C Current x Resistance D voltage x Current C Current x Resistance D voltage x Current C Current x Resistance D voltage x Resistance D voltage x Resistance	1	How many electrons are there in the copper	в	Ohm
A 8 B 13 C 18 D 29 2 What is the formula to calculate the equivalent resistance (RT) of the three resistors R1, R2 & R3 are connected in parallel circuit? A RT = R1 + R2 + R3 B $\frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3}$ C $R_T = \frac{1}{R_1 + R_2 + R_3}$ B $\frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3}$ C $R_T = \frac{1}{\frac{1}{R_1 + R_2 + R_3}}$ B $\frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3}$ C $R_T = \frac{1}{\frac{1}{R_1 + R_2 + R_3}}$ B $\frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3}$ C $R_T = \frac{1}{R_1 + R_2 + R_3}$ B $\frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3}$ C $C urrent x voltage C C urrent x outage + Resistance value ofcopper conductor? A Metal film resistor C Carbon - film resistor C Carrent, voltage and resistance D Voltage, resistance and power B Current, voltage and resistance D Voltage, resistance and current density 5 What is the formula for Quantity of electricity (Q)? A ohm / cm2 C Current X Resistance D Voltage x Resi$		atom?	С	Ohm-m
B13C18D292What is the formula to calculate the equivalent resistance (RT) of the three resistors R1, R2 & R3 are connected in parallel circuit?ART = R1 + R2 + R3B $\frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3}$ C $R_T = \frac{1}{R_1 + R_2 + R_3}$ D $R_T = \frac{1}{R_1 + \frac{1}{R_2} + \frac{1}{R_3}}$ C $R_T = \frac{1}{R_1 + \frac{1}{R_2} + \frac{1}{R_3}}$ D $R_T = \frac{1}{R_1 + \frac{1}{R_2} + \frac{1}{R_3}}$ C $R_T = \frac{1}{R_1 + \frac{1}{R_2} + \frac{1}{R_3}}$ D $R_T = \frac{1}{R_1 + \frac{1}{R_2} + \frac{1}{R_3}}$ AMetal film resistorD $R_T = \frac{1}{R_1 + \frac{1}{R_2} + \frac{1}{R_3}}$ AMetal film resistorB $Q_{12} = \frac{1}{M_1 + \frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3}$ AMetal film resistorCCarbon - film resistorB $Vice wound resistor$ CCurrent, voltage and resistivityCCurrent, voltage and resistivity?ACurrent, voltage and resistivity?AWhat is the unit of resistivity?CWhat is the formula for Quantity of electricity (Q)?AWhat is the formula for Quantity of electricity (Q)?	Α	8	D	Ohm/m
C18D292What is the formula to calculate the equivalent resistance (RT) of the three resistors R1, R2 & R3 are connected in parallel circuit?ART = R1 + R2 + R3B $\frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3}$ C $R_T = \frac{1}{R_1 + \frac{1}{R_2} + \frac{1}{R_3}}$ C $R_T = \frac{1}{R_1 + \frac{1}{R_2} + \frac{1}{R_3}}$ D $R_T = \frac{1}{R_1 + \frac{1}{R_2} + \frac{1}{R_3}}$ O $R_T = \frac{1}{R_1 + \frac{1}{R_2} + \frac{1}{R_3}}$ D $R_T = \frac{1}{R_1 + \frac{1}{R_2} + \frac{1}{R_3}}$ D $R_T = \frac{1}{R_1 + \frac{1}{R_2} + \frac{1}{R_3}}$ D $R_T = \frac{1}{R_1 + \frac{1}{R_2} + \frac{1}{R_3}}$ AMetal film resistor?D $R_T = \frac{1}{R_1 + \frac{1}{R_2} + \frac{1}{R_3}}$ AMetal film resistorB $Vire wound resistor$ CCarbon - film resistorBVire wound resistorCCarbon - film resistorDCarbon composition resistorCCurrent, voltage and resistanceDVoltage, resistance and powerBCurrent, voltage and resistorDVoltage, resistance and current density5What is the formula for Quantity of electricity(Q)?ACurrent X ResistanceDVoltage x CurrentCUrrent X ResistanceDVoltage x ResistanceDOrdin / metre6What is the formula for Quantity of electricity(Q)?AWhat is the formula for Quantity of electricity(Q)?AWhat is the formula for Quantity of electricity(Q)?A <th>В</th> <th>13</th> <th>8</th> <th>What is the S.I unit of specific resistance?</th>	В	13	8	What is the S.I unit of specific resistance?
D292What is the formula to calculate the equivalent resistance (RT) of the three resistors R1, R2 & R3 are connected in parallel circuit?Micro ohm/cm2ART = R1 + R2 + R3What is the formula is used to calculate the power of DC circuit?What is the substance (RT) of the three resistors R1, R2 & R3 are connected in DC circuit?What is the formula is used to calculate the power of DC circuit?D $R_T = \frac{1}{R_1 + R_2 + R_3}$ Current x voltageCurrent x voltageD $R_T = \frac{1}{R_1 + R_2 + R_3}$ Current x voltageCurrent x voltage3What is the name of the resistor?1.72 Micro ohm/cm34Metal film resistor1.72 Micro ohm/cm35Carbon - film resistor116Current, resistance and power B Current, voltage and resistanceD4What is the unit of resistor?P, e = 3V, I, Cos 07Current, voltage and resistanceP, e = 3V, I, Cos 09Voltage, resistance and power B Current, voltage and resistanceP, e = VI9What is the unit of resistivity?P, e = VI6What is the formula for Quantity of electricity (Q)?A what is the formula for Quantity of electricity (Q)?6What is the formula for Quantity of electricity (Q)?7Current x Resistance20°9Voltage x Resistance20°9Voltage x Resistance20°9Voltage x Resistance20°9Voltage x Resistance20°9Voltage x Resistance20°9 <th>С</th> <th>18</th> <th>Α</th> <th>Ohm/cm</th>	С	18	Α	Ohm/cm
2What is the formula to calculate the equivalent resistance (RT) of the three resistors R1, R2 & R3 are connected in parallel circuit?COhm-metre DMicro ohm/cm2ART = R1 + R2 + R3B $\frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3}$ CWhich formula is used to calculate the power of D C circuit?B $\frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3}$ CWhich formula is used to calculate the power of D C circuit?D $R_T = \frac{1}{R_1 + R_2 + R_3}$ CWhich is the specific resistanceD $R_T = \frac{1}{R_1 + R_2 - R_3}$ What is the name of the resistor?Image: Star R = R = 1 R = R = R = R = R = R = R = R = R = R =	D	29	в	Ohm/metre <sub>2</sub>
equivalent resistance (RT) of the three resistors R1, R2 & R3 are connected in parallel circuit? <b>A</b> RT = R1 + R2 + R3 <b>B</b> $\frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3}$ <b>C</b> $R_T = \frac{1}{R_1 + K_2 + R_3}$ <b>D</b> $R_1 - Z$ Micro ohm/m <b>C</b> $1.72$ Micro ohm/m <b>C</b> $1.72$ Micro ohm/m <b>C</b> $1.72$ Micro ohm/m <b>1</b> $W$ that is the nomula to find 3 phase Reactive power (PR) if the line votage is "V_1" and line current is "L"? <b>A</b> $P_T = VL I_L$ <b>B</b> $P_T = 3V L_1 L Cos \theta$ <b>D</b> $P_T = V I$ Sin $\theta$ <b>D</b> $P_T = VI$ Sin $\theta$ <b>D</b> $P_T = VI sin\thetaD P_T = VI sin \thetaD 270^\circC 180^\circD 270^\circC 180^\circD 270^\circD 270^\circD 270^\circD 270^\circD R_T = \frac{1}{R_T + R_T}$	2	What is the formula to calculate the	С	Ohm-metre
resistors R1, R2 & R3 are connected in parallel circuit? A RT = R1 + R2 + R3 B $\frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3}$ C $R_T = \frac{1}{R_1 + R_2 + R_3}$ D $R_T = \frac{1}{R_1 + R_2 + R_3}$ 3 What is the name of the resistor? A Metal film resistor B Wire wound resistor C Carbon composition resistor D Carbon composition resistor C Current, voltage and resistivity C Current, resistance and power B Current, voltage and resistivity C Current, voltage and resistivity C Current, voltage and resistivity C Current, voltage and resistivity? A ohm / cm B what is the formula for Quantity of electricity (Q)? A What is the formula for Quantity of electricity (Q)? A Current x Time B Voltage x Resistance D Voltage x Resistance D Voltage x Resistance D Voltage x Resistance		equivalent resistance (RT) of the three	D	Micro ohm/cm <sub>2</sub>
parallel circuit? A RT = R1 + R2 + R3 B $\frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3}$ C $R_T = \frac{1}{R_1 + R_2 + R_3}$ D $R_T = \frac{1}{R_1 + R_2 + R_3}$ J $R_T = \frac{1}{R_1 + R_2 + R_3}$ A Metal film resistor B $\frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3}$ 3 What is the name of the resistor? A Metal film resistor B $\frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3}$ A Metal film resistor C Carbon – film resistor C Carbon – film resistor C Carbon – film resistor A Current, voltage and resistivity C Current x Resistance D Voltage x Current C Onm / metre O hm / metre D Voltage x Current C Current x Resistance D Voltage x Current C Current x Resistance D Voltage x Resistance D		resistors R1, R2 & R3 are connected in	9	Which formula is used to calculate the power of a
A RT = R1 + R2 + R3 B $\frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3}$ C $R_T = \frac{1}{R_1 + R_2 + R_3}$ D $R_T = \frac{1}{R_1 + R_2 + R_3}$ 3 What is the name of the resistor? A Metal film resistor B Wire wound resistor C Carbon – film resistor A What electrical quantities are related in Ohm's law? A Current, voltage and resistivity C Current, voltage and resistivity? C Current, voltage and resistivity? S What is the formula for Quantity of electricity (Q)? A What is the formula for Quantity of electricity (Q)? A Current x Time B Voltage x Resistance D Voltage x Resistance D Voltage x Resistance D Voltage x Resistance D Voltage x Resistance		parallel circuit?		DC circuit?
B $\frac{1}{R_1}$ $\frac{1}{R_2}$ $\frac{1}{R_3}$ B $\frac{1}{R_1}$ $\frac{1}{R_2}$ $\frac{1}{R_3}$ C $R_T = \frac{1}{R_1 + R_2 + R_3}$ $O$ What is the specific resistanceD $R_T = \frac{1}{1 + \frac{1}{R_1 + R_2 + R_3}}$ 3What is the name of the resistor?Image: Display the system of the resistor?Image: Display the sys	Α	RT = R1 + R2 + R3	Α	Voltage x time
<b>C</b> $R_T = \frac{1}{R_1 + R_2 + R_3}$ <b>C</b> $R_T = \frac{1}{R_1 + R_2 + R_3}$ <b>D</b> $R_T = \frac{1}{R_1 + R_2 + R_3}$ <b>D</b> $R_T = \frac{1}{R_1 + R_2 + R_3}$ <b>C</b> $R_1 = \frac{1}{R_1 + R_2 + R_3}$ <b>R</b> $R_2 = \frac{1}{R_1 + R_2 + R_3}$ <b>R</b> $R_1 = \frac{1}{R_1 + R_2}$ <b>R</b> $R_1 =$	R	1 1 1	В	Current x voltage
<b>C</b> $R_T = \frac{1}{\kappa_1 + \kappa_2 + \kappa_3}$ <b>D</b> $R_T = \frac{1}{\kappa_1 + \kappa_2 + \kappa_3}$ <b>3</b> What is the name of the resistor? <b>a</b> Metal film resistor <b>b</b> Vire wound resistor <b>c</b> Carbon - film resistor <b>b</b> Carbon composition resistor <b>c</b> Carbon - film resistor <b>c</b> Carbon - film resistor <b>b</b> Current, resistance and power <b>c</b> Current, voltage and resistivity <b>c</b> Current, voltage and resistivity? <b>k</b> ohm / cm <b>b</b> ohm / cm <b>c</b> ohm - metre <b>b</b> voltage x Current <b>c</b> Current x Resistance <b>b</b> voltage x Current <b>c</b> Current x Resistance <b>b</b> voltage x Current <b>c</b> Current x Resistance <b>b</b> voltage x Resistance	Ы	$\overline{R_1}^+$ $\overline{R_2}^+$ $\overline{R_3}$	С	Current x resistance
C $R_T = \frac{1}{R_1 + R_2 + R_3}$ 10What is the specific resistance value of copper conductor?D $R_T = \frac{1}{R_1 + R_2 + R_3}$ A1.72 Ohm/cm <sup>3</sup> 3What is the name of the resistor? $I = 1.72$ Micro ohmCImage: Complex conductor of the resistor?Image: Complex conductor of the resistor? $I = 1.72$ Micro ohm/cm <sup>3</sup> AMetal film resistor $I = 1.72$ Micro ohm/cm <sup>3</sup> BI.72 Micro ohm/cm <sup>3</sup> $I = 1.72$ Micro ohm/cm <sup>3</sup> CImage: Complex conductor of the resistor $I = 1.72$ Micro ohm/cm <sup>3</sup> CCarbon - film resistor $I = 1.72$ Micro ohm/cm <sup>3</sup> DCarbon - film resistor $I = 1.72$ Micro ohm/cm <sup>3</sup> DCarbon - film resistor $I = 1.72$ Micro ohm/cm <sup>3</sup> CCarbon - film resistor $I = 1.72$ Micro ohm/cm <sup>3</sup> ACurrent, resistance and power $I = 1.72$ Micro ohm/cm <sup>3</sup> ACurrent, resistance and power $I = 1.72$ Micro ohm/cm <sup>3</sup> DCurrent, resistance and current density $I = 1.72$ Micro ohmSWhat is the unit of resistivity? $A = P_r = VI$ DOhm / cm <sup>2</sup> $I = 1.20^{\circ}$ Cohm / cm <sup>2</sup> $I = 20^{\circ}$ Dohm / metre $I = 20^{\circ}$ DVoltage x Current $I = 20^{\circ}$ CCurrent x Time $V = 1.20^{\circ}$ DVoltage x Resistance $I = 20^{\circ}$ DVoltage x Resistance $I = 20^{\circ}$		1	D	Voltage x resistance
$R_{T} + R_{2} + R_{3}$ $P = \frac{1}{\frac{1}{R_{1} + R_{2} + R_{3}}}$ $A = \frac{1}{\frac{1}{R_{1} + R_{1} $	С	$R_T = \frac{1}{1}$	10	What is the specific resistance value of
D $R_T = \frac{1}{R_1 + R_2 + R_3}$ 3 What is the name of the resistor? A Metal film resistor B Wire wound resistor C Carbon – film resistor C Current, voltage and resistivity C Current, voltage and resistivity C Current, voltage and resistivity? A ohm / cm B ohm / cm <sup>2</sup> C ohm - metre D voltage x Current C Current x Time B Voltage x Current C Current x Resistance D Voltage x Resistance D Voltage x Resistance		$R_1 + R_2 + R_3$		copper conductor?
111 $R1 + R2 + R3$ 3What is the name of the resistor? $I$ $I = R2 + R3$ 3What is the name of the resistor? $I$ $I = R2 + R3$ $I$ $I = R2 + R3$ 3What is the name of the resistor? $I$ $I = R2 + R3$ $I$ $I = R2 + R2 + R3$ $I$ $I = R2 + R2 + R3$ $I$ $I = R2 + R2$	D	$R_{\tau} = \frac{1}{1}$	Α	1.72 Ohm/cm <sup>3</sup>
R1R2R33What is the name of the resistor?4Metal film resistorBWire wound resistorCCarbon – film resistorDCarbon composition resistor4What is the electrical quantities are related in Ohm's law?ACurrent, resistance and powerBCurrent, voltage and resistivityCCurrent, voltage and resistivityCCurrent, voltage and resistivity?AOhm / cm25What is the unit of resistivity?Cohm / cm2Cohm / metreDohm / cm2Cohm / metreBVoltage x CurrentCCurrent x TimeBVoltage x CurrentCCurrent x ResistanceDVoltage x Resistance			В	1.72 Micro ohm
3What is the name of the resistor?D 1.72 Micro ontwin1I What is the name of the resistor?AMetal film resistorBWire wound resistorCCarbon - film resistorDCarbon composition resistorAWhat electrical quantities are related in Ohm's law?ACurrent, resistance and powerBCurrent, voltage and resistivityCCurrent, voltage and resistivityCCurrent, voltage and resistivity?AOhm / cmBohm / cmBohm / cmCohm / cmCOhm / metreDohm / cmBVoltage x CurrentCCurrent x TimeBVoltage x ResistanceDVoltage x Resistance		R1 R2 R3	C	1.72 Micro ohm/cm <sup>3</sup>
Image: Second systemImage: Second syste	3	What is the name of the resistor?	D 1.	
AMetal film resistorpower (Fr) in the intervoltage is VL and the power (Fr).AMetal film resistorBWire wound resistorCCarbon - film resistorDCarbon composition resistor4What electrical quantities are related in Ohm's law?ACurrent, resistance and powerBCurrent, voltage and resistivityCCurrent, voltage and resistivityCCurrent, voltage and resistivity?CCurrent, voltage and resistivity?SWhat is the unit of resistivity?Aohm / cmBohm / cm²Cohm / metreDohm / metreCohm / metreDohm / metreBVoltage x CurrentCCurrent x TimeBVoltage x ResistanceDVoltage x Resistance			11	What is the formula to find 3 phase Reactive
AMetal film resistorBWire wound resistorCCarbon - film resistorDCarbon composition resistor4What electrical quantities are related in Ohm's law?ACurrent, resistance and powerBCurrent, voltage and resistivityCCurrent, voltage and resistivity?CCurrent, voltage and resistivity?SWhat is the unit of resistivity?Aohm / cmBohm / cm <sup>2</sup> Cohm / metreDohm / metreGWhat is the formula for Quantity of electricity (Q)?ACurrent x TimeBVoltage x ResistanceDVoltage x Resistance				current is 'h'?
AMetal film resistorBWire wound resistorCCarbon - film resistorDCarbon composition resistor4What electrical quantities are related in Ohm's law?ACurrent, resistance and powerBCurrent, voltage and resistivityCCurrent, voltage and resistivity?CVoltage, resistance and current density5What is the unit of resistivity?Aohm / cmBohm / cm <sup>2</sup> Cohm / metreDohm / metreCWhat is the formula for Quantity of electricity (Q)?ACurrent x TimeBVoltage x CurrentCCurrent x ResistanceDVoltage x Resistance			Α	$P_r = V_1 I_1$
AMetal film resistorBWire wound resistorCCarbon – film resistorDCarbon composition resistor4What electrical quantities are related in Ohm's law?ACurrent, resistance and powerBCurrent, voltage and resistivityCCurrent, voltage and resistivityCCurrent, voltage and resistivity?CCurrent, voltage and resistivity?CVoltage, resistance and current density5What is the unit of resistivity?Aohm / cmBohm / cm <sup>2</sup> Cohm - metre0ohm / metre6What is the formula for Quantity of electricity (Q)?ACurrent x TimeBVoltage x CurrentCCurrent x ResistanceDVoltage x Resistance			В	$P_r = 3 V_1 I_1 \cos \theta$
BWire wound resistorCCarbon – film resistorDCarbon composition resistor4What electrical quantities are related in Ohm's law?ACurrent, resistance and powerBCurrent, voltage and resistivityCCurrent, voltage and resistanceDVoltage, resistance and current density5What is the unit of resistivity?Aohm / cmBohm / cmBohm / cmCohm / metreOohm / metre6What is the formula for Quantity of electricity (Q)?ACurrent x TimeBVoltage x ResistanceDVoltage x Resistance	Α	Metal film resistor	С	$P_r = \sqrt{3} V_1 I_1 Sin \theta$
CCarbon - film resistorDCarbon composition resistor4What electrical quantities are related in Ohm's law?ACurrent, resistance and powerBCurrent, resistance and powerBCurrent, voltage and resistivityCCurrent, voltage and resistanceDVoltage, resistance and current density5What is the unit of resistivity?Aohm / cmBohm / cm <sup>2</sup> Cohm / metreDohm / metreGWhat is the formula for Quantity of electricity (Q)?ACurrent x TimeBVoltage x ResistanceDVoltage x Resistance	В	Wire wound resistor	D	$P_r = \sqrt{3} V_L I_L \cos \theta$
DCarbon composition resistor4What electrical quantities are related in Ohm's law?ACurrent, resistance and powerBCurrent, voltage and resistivityCCurrent, voltage and resistanceDVoltage, resistance and current density5What is the unit of resistivity?Aohm / cmBohm / cmDohm / cmCohm / metreDohm / metre6What is the formula for Quantity of electricity (Q)?ACurrent x TimeBVoltage x CurrentCCurrent x ResistanceDVoltage x Resistance	C	Carbon – film resistor	12	What is the formula for Reactive Power (Pr)
4What electrical quantities are related in Ohm's law?ACurrent, resistance and powerBCurrent, voltage and resistivityCCurrent, voltage and resistanceDVoltage, resistance and current density5What is the unit of resistivity?Aohm / cmBohm / cm <sup>2</sup> Cohm / metre6What is the formula for Quantity of electricity (Q)?ACurrent x TimeBVoltage x CurrentCCurrent x ResistanceDVoltage x Resistance				in an AC circuit?
A Current, resistance and power B Current, voltage and resistivity C Current, voltage and resistance D Voltage, resistance and current density 5 What is the unit of resistivity? A ohm / cm B ohm / cm <sup>2</sup> C ohm - metre D ohm / metre 6 What is the formula for Quantity of electricity (Q)? A Current x Time B Voltage x Current C Current x Resistance D Voltage x Resistance	4	what electrical quantities are related in	Α	$P_r = VI$
ACurrent, resistance and powerBCurrent, voltage and resistivityCCurrent, voltage and resistanceDVoltage, resistance and current density5What is the unit of resistivity?Aohm / cmBohm / cm <sup>2</sup> Cohm - metreDohm / metreGWhat is the formula for Quantity of electricity (Q)?ACurrent x TimeBVoltage x CurrentCCurrent x ResistanceDVoltage x Resistance	•	Onm's law?	в	$P_r = gVI$
<b>b</b> Current, voltage and resistivity <b>c</b> Current, voltage and resistivity <b>c</b> Current, voltage and resistivity <b>b</b> $P_r = VI \sin\theta$ <b>13</b> What is the phase displacement in a 3- phase AC circuit? <b>A</b> $90^{\circ}$ <b>B</b> $120^{\circ}$ <b>C</b> $180^{\circ}$ <b>D</b> $270^{\circ}$ <b>C</b> $180^{\circ}$ <b>D</b> $270^{\circ}$	A	Current, resistance and power	С	$P_r = VI \cos\theta$
<ul> <li>D Voltage, resistance and current density</li> <li>5 What is the unit of resistivity?</li> <li>A ohm / cm</li> <li>B ohm / cm<sup>2</sup></li> <li>C ohm - metre</li> <li>D ohm / metre</li> <li>6 What is the formula for Quantity of electricity (Q)?</li> <li>A Current x Time</li> <li>B Voltage x Current</li> <li>C Current x Resistance</li> <li>D Voltage x Resistance</li> </ul>		Current, voltage and resistance	D	$P_r = VI \sin \theta$
<ul> <li>b Voltage, resistance and current density</li> <li>5 What is the unit of resistivity?</li> <li>A ohm / cm</li> <li>B ohm / cm<sup>2</sup></li> <li>C ohm - metre</li> <li>D ohm / metre</li> <li>6 What is the formula for Quantity of electricity (Q)?</li> <li>A Current x Time</li> <li>B Voltage x Current</li> <li>C Current x Resistance</li> <li>D Voltage x Resistance</li> </ul>		Voltage resistance and current density	13	What is the phase displacement in a 3-
<ul> <li>A ohm / cm</li> <li>B ohm / cm<sup>2</sup></li> <li>C ohm - metre</li> <li>D ohm / metre</li> <li>6 What is the formula for Quantity of electricity (Q)?</li> <li>A Current x Time</li> <li>B Voltage x Current</li> <li>C Current x Resistance</li> <li>D Voltage x Resistance</li> </ul>	5	What is the unit of registivity?		phase AC circuit?
<ul> <li>A community cm</li> <li>B ohm / cm<sup>2</sup></li> <li>C ohm - metre</li> <li>D ohm / metre</li> <li>6 What is the formula for Quantity of electricity (Q)?</li> <li>A Current x Time</li> <li>B Voltage x Current</li> <li>C Current x Resistance</li> <li>D Voltage x Resistance</li> </ul>	5	ohm / cm	Α	90°
C       ohm / metre         D       ohm / metre         6       What is the formula for Quantity of electricity (Q)?         A       Current x Time         B       Voltage x Current         C       Current x Resistance         D       Voltage x Resistance	A	$hm/cm^2$	в	120°
D       ohm / metre         6       What is the formula for Quantity of electricity (Q)?         A       Current x Time         B       Voltage x Current         C       Current x Resistance         D       Voltage x Resistance	C	ohm - metre	С	180°
<ul> <li>6 What is the formula for Quantity of electricity (Q)?</li> <li>A Current x Time</li> <li>B Voltage x Current</li> <li>C Current x Resistance</li> <li>D Voltage x Resistance</li> </ul>	п	ohm / metre	D	270°
<ul> <li>A Current x Time</li> <li>B Voltage x Current</li> <li>C Current x Resistance</li> <li>D Voltage x Resistance</li> </ul>	6	What is the formula for Quantity of electricity $(\Omega)^2$		
<ul> <li>B Voltage x Current</li> <li>C Current x Resistance</li> <li>D Voltage x Resistance</li> </ul>	Δ	Current x Time		
<ul> <li>C Current x Resistance</li> <li>D Voltage x Resistance</li> </ul>	В	Voltage x Current		
D Voltage x Resistance	C	Current x Resistance		
Ŭ	D	Voltage x Resistance		
		-		

14 What is the formula to calculate the impedence (Z) of the R.L.C series circuit, if the inductive reactance (X<sub>L</sub>) is less than capacitve recatance (X<sub>C</sub>)?

**A** 
$$Z = R^2 + \sqrt{X_L^2 + X_C^2}$$

**B** 
$$Z = \sqrt{R^2 + (X_L - X_C)^2}$$

**C** 
$$Z = \sqrt{R^2 + (X_L^2 - X_C)^2}$$

**D** 
$$Z = \sqrt{R^2 + (X_C - X_L)^2}$$

**15** What is the formula to calculate the three phase active power (P) if the line voltage (VL) and line current is IL and phase angle is 'q'?

**A**  $P = 3 V_L I_L Sin\theta$ 

- **B**  $P = 3 V_L I_L Cos\theta$
- **C**  $P = \sqrt{3} V_L I_L Sin\theta$
- **D**  $P = \sqrt{3} V_L I_L Cos\theta$
- 16 What is the form factor  $(K_f)$  for sinusoidal AC?
- **A** 1
- **B** 1.11
- **C** 2.22
- **D** 4.44
- **17** Which formula is used to calculate the impedance (z) of a RLC series circuit?

$$\mathbf{A} \qquad \mathbf{Z} = \mathbf{R}^2 + (\mathbf{x}_{\mathsf{L}} \sim \mathbf{x}_{\mathsf{c}})^2$$

$$\mathbf{B} \qquad \mathbf{Z} = \sqrt{\mathbf{R}^2 + (\mathbf{x}_L \sim \mathbf{x}_c)^2}$$

$$\mathbf{C} \qquad \mathbf{Z} = \sqrt{\mathbf{R} + (\mathbf{x}_{\mathsf{L}} \sim \mathbf{x}_{\mathsf{c}})}$$

$$\mathbf{D} \qquad \mathbf{Z} = \sqrt{\mathbf{R}^2 + (\mathbf{x}_{\mathsf{L}} \sim \mathbf{x}_{\mathsf{c}})^2}$$

- **18** How many electrons are there in the valence shell of a copper atom?
- **A** 1
- **B** 2
- **C** 8
- **D** 18
- **19** What is the unit for Quantity of electricity?
- A Mho
- B Coulomb
- C Volt /second
- D Ampere/second
- **20** What formula is used to calculate Electro Motive Force (EMF)??
- A EMF = Potential difference voltage drop
- **B** EMF = Potential difference + voltage drop
- **C** EMF = Potential difference + voltage drop/2
- **D** EMF = Potential difference + 2 x voltage drop

Questions: Level 2		8	Which type of meter is used to test the		
			polarity of battery?		
1	Calculate the electrical energy in unit	Α	Moving iron ammeter		
	consumed by 500W lamp for 5 hours.	В	Moving coil voltmeter		
Α	0.5 unit	С	Moving iron voltmeter		
В	1.0 unit	D	Dynamo meter type wattmeter		
С	1.5 unit	9	What is the voltage drop in resistor $R_2$ in		
D	2.5 unit		the series circuit?		
2	What is the value of hot resistance of a bulb		R <sub>1</sub> 1000 R <sub>2</sub> 2000		
	rated as 100W/250V?				
Α	31.25 ohm				
В	62.50 ohm				
С	312.50 ohm		R <sub>2</sub> 3000 R <sub>4</sub> 4000 5		
D	625.00 ohm	Α	5 volt		
3	Calculate the total power of the circuit of two	В	10 volt		
	lamps rated as 200W/240V are connected	С	15 volt		
	in series across 240V supply?	D	20 volt		
Α	50 W	10	Which is the application of series circuit?		
В	100 W	Α	Fuse in circuit		
C	200 W	В	Voltmeter connection		
D	400 W	С	Electrical lamp in homes		
4	What is the change of resistance value of the	D	Shunt resistor in ammeter		
^	conductor as its diameter is doubled?	11	What is the change in value of resistance of		
	Decreases to four times		the conductor, if its cross section area is		
C	Decreases to half of the value		doubled?		
П	No change in value of resistance	Α	No change		
5	What is the effect of the parallel sireuit with	В	Decreases 2 times		
5	one branch opened?	С	Increases 2 times		
Δ		<u>D</u>	Decreases 4 times		
R	Whole circuit will not function	12	What is the value of resistance in an open		
C	No current will flow in that branch	_	circuit?		
D	Voltage drop increase in the opened branch	A	Zero		
6	Which is the application of series circuit?	В	Low		
Ā	Voltmeter connection	C	High		
В	Lighting circuits in home	<u>D</u>			
С	Shunt resistor in ammeter	13	Which resistor the lowest current flows in a		
D	Multiplier resistor of a voltmeter		parallel circuit having the values of		
7	What is the effect on opened resistor in		50 $\wedge$ , 220 $\wedge$ , 450 $\wedge$ and 560 $\wedge$ corrected with		
	series circuit?		supply?		
Α	No effect in opened resistor	A	50 ^		
В	Full circuit current will flow in opened	В	220 ^		
	resistor	С	450 ^		
С	Total supply voltage will appear across the	D	560 ^		
	opened resistor	14	Which is inversely proportional to the		
D	No voltage will appear across the opened		resistance of a conductor?		
	resistor	Α	Length		
-		В	Resistivity		
		С	Temperature		
		D	Area of cross section		



- **21** At what power factor in a 3 phase power measurement the reading of two wattmeters are equal and positive?
- **A** 0
- **B** 1
- **C** 0.5
- **D** 0.8
- **22** What is the relation between the line current (I<sub>L</sub>) and phase current (I<sub>P</sub>) in delta connected system?
- **A**  $I_L = I_P$
- **B** I<sub>L</sub> = 3 I<sub>P</sub>
- **C**  $I_{L} = \sqrt{3} I_{P}$
- $\mathbf{D}$   $\mathbf{I}_{L} = \mathbf{I}_{P} / \sqrt{3}$
- 23 Which AC circuit contains the phase relation between voltage (V) and current (I)?



- A Pure resistive circuit
- B Pure capacitance
- C Pure inductance
- D Pure resistance and inductance series circuit
- **24** In a 3 phase system, if the active power is 4 kw and the apparent power is 5 KVA, calculate the reactive power?
- A 1 KVAR
- B 2 KVAR
- C 3 KVAR
- D 4 KVAR
- **25** What relationship is illustrated in between the current and voltage?



- A Current and voltage are "in phase"
- B Current and voltage are in out of phase
- **C** Current lags behind the voltage
- D Current leads ahead of the voltage

- 26 Calculate the total power by two wattmeter (W1 & W2) method, if one of the wattmeter (W2) reading is taken after reversing?
- **A** W<sub>1</sub> x 2
- **B** W<sub>1</sub> only
- **C** W<sub>1</sub> W<sub>2</sub>
- **D**  $W_1 + W_2$
- **27** In which 3 phase system, the artificial neutral is required to measure the phase voltage?
- A 3 wire star connected system
- **B** 4 wire star connected system
- **C** 3 wire delta connected system
- **D** 4 wire delta connected system

### **Questions: Level 3**

1 Calculate the value of resistance 'R<sub>2</sub>' in the parallel circuit?

R<sub>1</sub>=8Ω



- 4 Ohm Α
- В 6 Ohm
- 8 Ohm С
- D 12 Ohm
- 3 Calculate the voltage drop across the resistor 'R4' in the circuit?



- Α 48 V
- 72 V В
- С 80 V
- D 100 V
- 4 What happens to the voltmeter if it is connected as an ammeter?
- Α Low reading
- No deflection В
- C Meter burns out
- D **Overshoot deflection**
- 5 What is the effect of electric current on neon lamp?
- Α Heating effect
- В Magnetic effect
- С Chemical effect
- D Gas ionization effect

- 6 What is the resistance of the inductive coil takes 5A current across 240V, 50Hz supply at 0.8 power factor?
- Α 48 ^
- В 42.5
- 38.4
- 26.6
- Calculate the impedance of the circuit R =  $5\Omega$ , XL=  $36\Omega$  and XC =  $24 \Omega$ ?



- 69 Ω
- 65 Ω 13 Ω
- 12 Ω
- 8 Calculate the line current of the 3 phase 415V 50 HZ supply for the balanced load of 3000 watt at 0.8 power factor is connected in star.
- 8.5 A A
- В 5.2 A
- С 4.5 A
- D 3.4 A
- 9 Calculate the power factor of coil having resistance of  $24\Omega$ , draws the current of 5A, at
  - 240V/ 50HZ AC supply. 0.8
- Α В 0.6
- С 0.5
- D 0.3
- 10 Calculate the power factor of R.L.C circuit having resitance (R) = 15W, resultant reactance (X) = 20W connected across 240V /50Hz AC supply?
- Α 0.5
- В 0.6
- С 0.7 D
- 0.8 11 How the low power factor (P.F) can be improved in AC circuits?
- Α By connecting resistors in series
- By connecting capacitors in series В
- С By connecting inductors in series
- D By connecting capacitors in parallel

- **12** What is the P.F in 2 wattmeter method of 3 phase power measurement, if one of the wattmeters reading is zero and the other reads total power?
- **A** 0.5
- B Zero
- **C** Unity
- D Below 0.5
- **13** How will you obtain positive reading in the wattmeter reads negative reading during 3-phase two wattmeter method?
- A By interchanging the connections of input terminals
- **B** By disconnecting the connection of current coil in meter
- **C** By reversing the connection of pressure coil in meter
- **D** By reversing the pressure coil and current coil connection in meter
- 14 What is the power factor if one of the wattmeter gives negative reading in two wattmeter method of 3 phase power measurement?
- **A** 0.5
- B Unity
- C Between 1 to 0.5
- D Between 0.5 to zero
- **15** What is the effect of the circuit, if 'ab' points are shorted?



- A Circuit resistance will be zero
- B Same current will flow in all branches
- **C** Supply voltage will exist in each branch
- **D** Total circuit current is equal to each branch circuit current

## Module 2 : Basic Electrical - AC circuits - Key paper

### Questions: Level 1

### **Questions: Level 2**

**Question: Level 3** 

SL.No	Key
1	D
2	D
3	В
4	С
5	С
6	A
7	A
8	C
9	В
10	С
11	С
12	D
13	В
14	D
15	D
16	В
17	D
18	A
19	В
20	В

SL.No	Key		SL.No	Key
1	D	]	1	D
2	D		2	D
3	В	ļ	3	В
4	С		4	В
5	C		5	C
6	A		6	D
7	A		7	C
8	C		8	В
9	В		9	В
10	<u> </u>		10	A
11	<u> </u>		11	В
12	D		12	D
13	В		13	D
14	D		14	D
15	D	]	15	D
16	В		16	С
17	D		17	D
18	Α		18	С
19	В		19	С
20	В		20	A
			21	В
			22	С
		C	23	В
	•		24	С
		$\sim$	25	A
			26	С
			27	С
	$\mathbf{N}$			II

SL.No	Key	
1	С	
2	D	
3	D	
4	A	
5	D	
6	С	
7	С	
8	В	
9	С	
10	В	
11	D	
12	А	
13	С	
14	D	
15	А	