

IE6 Principle of Electricity

EE101	DC Circuit Problems (Electrical)	1
EE111	Electromagnetism & Basic Electrical Machines(Electrical)	2
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[CE 108 Electrical Principle](#) (Civil)

ME 105 Electrical Principle (Mechanical)

ME 106 Electrical Circuits (Mechanical)

Part 1 Lesson

Electrical Circuits I

EE101	DC Circuit Problems
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E003+E004 / E104

Page 1 to 8 of http://www.filefactory.com/file/cf9bf8f/n/Video_Lessons.pdf

E003+E004 (Stage 1)

DC Circuit Problems

<http://www.filefactory.com/file/cf8739b/n/E003+E004.zip>

The links contain the following lessons

E003+E004 Lesson 1 DC series circuit

<http://youtu.be/eUdLAhcBIYg>

E003+E004 Lesson 2 DC parallel circuit

<http://youtu.be/9E3HcLDZKrQ>

E003+E004 Lesson 3 DC Parallel circuit problems

<http://youtu.be/TQlx2Yv87gw>

E003+E004 Lesson 4 DC series parallel circuit 1

<http://youtu.be/ZW3dugR9NOU>

E003+E004 Lesson 5 DC series parallel circuit 2

<http://youtu.be/FFMUNoEYoa8>

E003+E004 Lesson 6 Lamp and resistor circuit

<http://youtu.be/7FbKyuOKYHk>

E003+E004 Lesson 7 Wheatstone bridge

<http://youtu.be/6EG3Y03Ldw8>

<http://youtu.be/xG2I2yJWXj0>

Electro-magnetics

EE111	Electromagnetism & Basic Electrical Machines
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G001+G101

Page 137 to 142 of http://www.filefactory.com/file/cf9bf8f/n/Video_Lessons.pdf

Electro-magnetism

<http://www.filefactory.com/file/cf9b277/n/G001.zip>

The links contain the following lessons

G001 Lesson 1 Magnatism+Electro magnet

<http://youtu.be/Lm166hHi3HA>

G001 Lesson 2 Electric & Magnetic Circuit

<http://youtu.be/Ny1JfhUVFAk>

G001 Lesson 3 Electro magnetic induction

<http://youtu.be/IYYQBeM8QgM>

G001 Lesson 4 Inductor+Relay

<http://youtu.be/brn-HHfKSXM>

G001 Lesson 5 Magnetic problems

<http://youtu.be/c85cSn6HTqg>

AC Circuits

EE112	Alternating Current Principle
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G002+G102

Page 143 to 148 of http://www.filefactory.com/file/cf9bf8f/n/Video_Lessons.pdf

Basic single phase and three phases circuits

G002 Lesson 1 Sine wave and it's values.zip

http://www.filefactory.com/file/c386ab9/n/G002_Lesson_1_Sine_wave_and_it_s_values.zip

http://youtu.be/cvwNfp_oO18

G002_Lesson_2_AC_RL+RC_Series_circuits.zip

http://www.filefactory.com/file/c0ad67c/n/G002_Lesson_2_AC_RL+RC_Series_circuits.zip

http://youtu.be/VZMR4_6OIF4

G002 Lesson 3 AC Series RLC circuits.zip

http://www.filefactory.com/file/c386ad8/n/G002_Lesson_3_AC_Series_RLC_circuits.zip

<http://youtu.be/sfhmoYce2ug>

G002 Lesson 4 AC Parallel circuits.zip

http://youtu.be/e-awv_8v5m8

http://www.filefactory.com/file/c0ad4f3/n/G002_Lesson_4_AC_Parallel_circuits.zip

G002 Lesson 5 Three phase circuit basics.zip

<http://youtu.be/vRsHUF4vD5s>

http://www.filefactory.com/file/c0ad468/n/G002_Lesson_5_Three_phase_circuit_basics.zip

G002 Lesson 6 Balanced three phase circuit.zip

<http://youtu.be/irwVD59QV4s>

http://www.filefactory.com/file/c0ad5d9/n/G002_Lesson_6_Balanced_three_phase_circuit.zip

The links contain the following lessons

G002 Lesson 1 Sine wave and it's values

G002 Lesson 2 AC RL+RC Series circuits

G002 Lesson 3 AC Series RLC circuits

G002 Lesson 4 AC Parallel circuits

G002 Lesson 5 Three phase circuit basics

G002 Lesson 6 Balanced three phase circuit

<http://youtu.be/m0dN0Wp6LCI>

<http://youtu.be/gTjcE8ssull>

<http://youtu.be/LqRybJxm0tE>

<http://youtu.be/brn-HHfKSXM>

<http://youtu.be/brn-HHfKSXM>

<http://youtu.be/7SPxjr1DSFE>

http://youtu.be/e-awv_8v5m8

<http://youtu.be/vRsHUF4vD5s>
<http://youtu.be/irwVD59QV4s>

Electrical Fundamental

EE113	Electrical Fundamental
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G012+ G047

Page 190 to 195 of http://www.filefactory.com/file/cf9bf8f/n/Video_Lessons.pdf

Electrical fundamental

G012 Lesson 1 Electrical components energy and power.zip

<http://youtu.be/erWoPZWwqKk>

http://www.filefactory.com/file/cf95d99/n/G012_Lesson_1_Electrical_components_energy_and_power.zip

G012 Lesson 2 Industrial electrical applications.zip

<http://youtu.be/fl77efWcWOI>

http://www.filefactory.com/file/c0b4d65/n/G012_Lesson_2_Industrial_electrical_applications.zip

G012 Lesson 3 Transformer voltage regulation inductance capacitance.zip

<http://youtu.be/Lkde-u1m-7k>

http://www.filefactory.com/file/cf95f3c/n/G012_Lesson_3_Transformer_voltage_regulation_inductance_capacitance.zip

G012 Lesson 4 Multiphase system ac dc motor.zip

<http://youtu.be/evclHIQ9nII>

http://www.filefactory.com/file/cf954d4/n/G012_Lesson_4_Multiphase_system_ac_dc_motor.zip

G012 Lesson 5 Squirrel cage induction motor starting.zip

<http://youtu.be/1AiP0qwSczo>

http://www.filefactory.com/file/cf9546c/n/G012_Lesson_5_Squirrel_cage_induction_motor_starting.zip

G012 Lesson 6 Wound rotor motor construction starter.zip

<http://youtu.be/6vTtNxToGbY>

http://www.filefactory.com/file/cf955a1/n/G012_Lesson_6_Wound_rotor_motor_construction_starter.zip

The links contain the following lessons

G012 Lesson 1 Electrical components energy and power

G012 Lesson 2 Industrial electrical applications
G012 Lesson 3 Transformer voltage regulation inductance capacitance
G012 Lesson 4 Multiphase system ac dc motor
G012 Lesson 5 Squirrel cage induction motor starting
G012 Lesson 6 Wound rotor motor construction starter

Power Circuit Analysis

EE203

Three Phase Power Circuits

G049+G149

Page 363 to 373 of http://www.filefactory.com/file/cf9bf8f/n/Video_Lessons.pdf

Three phase system

G049 Lesson 1 Basic three phase circuit.zip

<http://youtu.be/l28eE1Te55U>

http://www.filefactory.com/file/c0b01a5/n/G049_Lesson_1_Basic_three_phase_circuit.zip

G049 Lesson 2 Three phase star delta.zip

<http://youtu.be/BX3-ht6DWTI>

<http://youtu.be/wlJucGbdHII>

http://www.filefactory.com/file/c0b01e7/n/G049_Lesson_2_Three_phase_star_delta.zip

G049 Lesson 3 Three phase power measurement.zip

<http://youtu.be/Q6kbCDGTUAI>

http://www.filefactory.com/file/c0b010e/n/G049_Lesson_3_Three_phase_power_measurement.zip

G049 Lesson 4 Three phase 4 wires unbalanced load.zip

<http://youtu.be/Ptfn5RCjdog>

http://www.filefactory.com/file/c0b02a2/n/G049_Lesson_4_Three_phase_4_wires_unbalanced_load.zip

G049 Lesson 5 Three phase 3 wires unbalanced load.zip

<http://youtu.be/uDPUhOq5qb8>

http://www.filefactory.com/file/c0b02f7/n/G049_Lesson_5_Three_phase_3_wires_unbalanced_load.zip

G049 Lesson 6 Three phase power by 2 watt meters.zip

<http://youtu.be/AI6iojMH32c>

http://www.filefactory.com/file/c0b022d/n/G049_Lesson_6_Three_phase_power_by_2_watt_meters.zip

G049 Lesson 7 Three phase fault.zip

http://youtu.be/IBWI_s580yc

http://www.filefactory.com/file/c0b0254/n/G049_Lesson_7_Three_phase_fault.zip

G049 Lesson 8 Three phase fault calculation table.zip

http://youtu.be/55ps_sdYQ5k

http://www.filefactory.com/file/c0b0276/n/G049_Lesson_8_Three_phase_fault_calculation_table.zip

G049 Lesson 9 Fault calculation.zip

<http://youtu.be/cr-1MR9HHow>

http://www.filefactory.com/file/c0b03ae/n/G049_Lesson_9_Fault_calculation.zip

G049 Lesson 10 Sequence network.zip

<http://youtu.be/Z1MwCBY0SO4>

<http://youtu.be/7epZP1-0hts>

http://www.filefactory.com/file/c0b03ea/n/G049_Lesson_10_Sequence_network.zip

The links contain the following lessons

- G049 Lesson 1 Basic three phase circuit
- G049 Lesson 2 Three phase star delta
- G049 Lesson 3 Three phase power measurement
- G049 Lesson 4 Three phase 4 wires unbalanced load
- G049 Lesson 5 Three phase 3 wires unbalanced load
- G049 Lesson 6 Three phase power by 2 watt meters
- G049 Lesson 7 Three phase fault
- G049 Lesson 8 Three phase fault calculation table
- G049 Lesson 9 Fault calculation
- G049 Lesson 10 Sequence network

Elect Fundamental E029+G012+G001+G002+G060.zip

http://www.filefactory.com/file/c0b6601/n/Elect_Fundamental_E029_G012_G001_G002_G060.zip

Exercise

Do Page 110 to 117 of the following link

http://www.filefactory.com/file/c0b7da3/n/Advanced_Diploma_in_Electrical_Engineering_Exercises.zip

Part 2 References

2.Three ph power measurement.zip (22.06MB)

http://www.filefactory.com/file/4bqlibdo1ok3/n/2.Three_ph_power_measurement.zip

4.Three ph 4 wire system.zip (13.81MB)

http://www.filefactory.com/file/7716mlobitx7/n/4.Three_ph_4_wire_system.zip

ELECTRICAL PRINCIPLE.doc (1.1MB)

http://www.filefactory.com/file/2akkt5e5wot1/n/ELECTRICAL_PRINCIPLE.doc

G002.zip (5.82MB)

<http://www.filefactory.com/file/17yninjqzi9/n/G002.zip>

G001_Part_2.zip (12.33MB)

http://www.filefactory.com/file/2ebuy7ocq1nr/n/G001_Part_2.zip

EP.zip (0.52MB)

<http://www.filefactory.com/file/1u0v4uoqhsr3/n/EP.zip>

Part 3 Practical

9.Electrical Fundamental Practicals

Circuit Connection Assessment Number 9-1 PF Measurement

http://www.filefactory.com/file/16f6d5l2eb11/n/9_1_doc

http://www.filefactory.com/file/37p4ppvd57z1/n/11_Power_factor_measurement_pdf

http://www.filefactory.com/file/3n0x5uvncvxh/n/9-1_pdf

Circuit Connection Assessment Number 9-2 Three Phase Unbalanced Load

3_ph 3 wire balance unbalance load

http://www.filefactory.com/file/3uvir02xq05/n/Practical-E029-3_phase_balanced_amp_unbalance_load_pdf

http://www.filefactory.com/file/6nlrpsht5bmh/n/9_2_doc

http://www.filefactory.com/file/1120fqz7sh8l/n/9-2_pdf

Circuit Connection Assessment Number 9-3 Maximum power transfer theorem

Max Power Transfer Theorem

http://www.filefactory.com/file/4qpk8gb6goel/n/Practical-E029-Maximum_power_transfer_theorem_pdf

http://www.filefactory.com/file/6469w1062qp9/n/9-3_pdf

http://www.filefactory.com/file/73qwp6qnoo2d/n/9_3_doc

http://www.filefactory.com/file/1u2tpsifh6gd/n/9_3_xls

Circuit Connection Assessment Number 9-4 Series RLC Circuit

http://www.filefactory.com/file/3fm60y2rvbz/n/9_4_doc

http://www.filefactory.com/file/4iu77mytdyud/n/9-4_xls

http://www.filefactory.com/file/6hfnfilf019/n/9-4_pdf

http://www.filefactory.com/file/7gouwwtxcx5/n/Practical-E029-Series_RLC_Circuit_pdf

Circuit Connection Assessment Number 9-5 Super position theorem

http://www.filefactory.com/file/5pqfaxyy9sdj/n/Practical-E029-Superposition_theorem_pdf

http://www.filefactory.com/file/5dknl0zfsst/n/9_5_doc

http://www.filefactory.com/file/5f6y1scqtyzv/n/9-5_pdf

http://www.filefactory.com/file/7dho8zsj1tyl/n/9_5_xls

Circuit Connection Assessment Number 9-7 Star Delta Load

http://www.filefactory.com/file/1ez1roas6zgt/n/Practical-G002_G049-Star_amp_Delta_load_pdf

http://www.filefactory.com/file/5t57z4mwqoj3/n/9-7_pdf

http://www.filefactory.com/file/soyr2zd7uin/n/9_7_doc

MCQ Practices

E003+E004

[E003+E004 MCQ Practice 1](#)

[E003+E004 MCQ Practice 2](#)

[E003+E004 MCQ Practice 3](#)

E003+E004-----E104

http://www.filefactory.com/file/5eg0luituujj/n/E003_E004_Online_Test_1_Marking_doc

http://www.filefactory.com/file/796n6fdurdij/n/E003_E004_Online_Test_1_Answer_doc

http://www.filefactory.com/file/58r3nfe1qieh/n/E003_E004_Online_Test_1_Question_pdf

<http://www.classroomclipboard.com/503511/Home/Test/3ebb0fe603a748b6b2430e75fb07af4f#/InitializeTest.xaml>

<http://www.classroomclipboard.com/503511/Home/Test/3ebb0fe603a748b6b2430e75fb07af4f#/QuestionPresenter.xaml?id=11>

G4UYTV

EE101 DC Circuit Problems

[Lesson 1](#) [Lesson 2](#) [Lesson 3](#)

Test & Assessment

http://www.filefactory.com/file/58r3nfe1qieh/n/E003_E004_Online_Test_1_Question_pdf

http://www.filefactory.com/file/796n6fdurdij/n/E003_E004_Online_Test_1_Answer_doc

Do the tests and send the answer sheet in soft copy by e-mail to iqytechnicalcollege@gmail.com

Week 1

E003+E004 Online test

Ref 1

Four resistors 1 ohm, 2 ohm, 3 ohm and 4 ohm are connected in series to 5V. Calculate the circuit current & potential difference across each resistor.

A	1A,3V,2V,5V,7V	B	0.5A,0.5V,1V,1.5V,2V
C	3A,1V,5V,6V,7V	D	0.A,1V,2V,3V,4V
Answer			

Ref 2

A 2.2K Ω resistor is connected in series with a resistor of unknown value across 16V supply. If the current is 5 mA, calculate the value of unknown resistor.

A	2 K Ω	B	3 K Ω
C	4 K Ω	D	1 K Ω
Answer			

Ref 3

Two resistors are connected in series to a 115V supply, one is known to have 470 Ω and voltage across it is 47V. Calculate (a) the value of second resistor (b) the circuit current.

A	680 Ω , 0.1A	B	800 Ω , 0.2A
C	100 Ω , 1A	D	1200 Ω ,0.1A
Answer			

Ref 4

Resistors of 5 Ω , 10 Ω and 3 Ω are connected in parallel to 12V supply. Calculate the supply current.

A	2A	B	3A
C	1A	D	4A

Answer	
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Ref 5

Resistors of 33K Ω , and 68 K Ω are connected in parallel to 50V. Calculate (a) total circuit resistance (b) total circuit current (c) individual branch currents.

A	44.5 K Ω , 4.5mA, 3mA,1.58mA	B	30 K Ω , 3mA, 2mA,1mA
C	22.2 K Ω , 2.25mA,1.5mA,0.79mA	D	60 K Ω , 6mA,4mA,2mA
Answer			

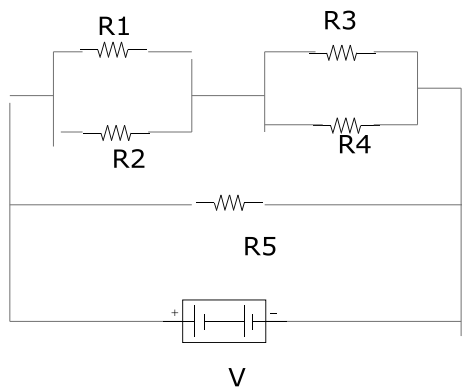
Ref 6

Resistors of values 12 Ω and 8 Ω are connected in parallel with R3 of unknown value across a 6V supply. When the current from the supply is 2.25A, calculate (a) the value of R3 (b) current flowing in R3.

A	6 Ω , 1A	B	12 Ω , 0.5A
C	24 Ω , 0.25A	D	8 Ω , 1.25A
Answer			

Ref 7

Five resistors are connected as follows. Find (a) R_t (b) I_t (c) 2 Ω resistor current.



$R_1=2 \Omega$, $R_2=8 \Omega$, $R_3=3 \Omega$, $R_4=6 \Omega$, $R_5=7.2 \Omega$. $V=6V$

A	3.6 Ω , 5A, 2.66A	B	4.8 Ω , 5A, 7A
C	2.4 Ω , 2.5A, 1.33A	D	7.2 Ω , 7.5A, 4A
Answer			

Ref 8

Resistors 1.8 K Ω and 1.2 K Ω are connected in series to 12V supply. Calculate the power dissipated in each resistor and total power.

A	0.0288W,0.0192W,0.048W	B	0.0576W,0.0384W,0.096W
C	0.0144W,0.009W,0.024W	D	1W,0.5W,0.7W
Answer			

Ref 9

A 1 Ω resistor is connected in series with parallel combination of 6 Ω and 3 Ω resistors to 6V supply. Calculate (a) R_t (b) Each resistor current.

A	6 Ω , 1A, 1.32A, 2.66A	B	4 Ω , 1A, 2A, 3A
C	10 Ω , 4A, 3A, 5A	D	3 Ω , 2A, 0.66A, 1.33A
Answer			

Ref 10

Resistors of 2.2K Ω and 7.88K Ω are connected in series and parallel across 3.3K Ω and 2.7K Ω series combination. They are connected to 9V supply .Calculate (a) Rt (b) It (c) Each resistor current.

A	3.75K Ω , 2.4mA,0.9mA,1.5mA	B	7.5K Ω , 4.8mA,1.8mA,3mA
C	2K Ω , 1.2mA,0.5mA,1mA	D	10K Ω , 8mA,2mA,3mA
Answer			

Ref 11

3 filament lamp indicators are each rated 12V and 0.36 w. If they are connected in series, what supply voltage should be used? Find supply voltage, the current and total power dissipated.

A	72V,0.06A,2.16W	B	108V,0.09A,3.24W
C	36V,0.03A,108W	D	18V,0.015A,0.54W
Answer			

Ref 12

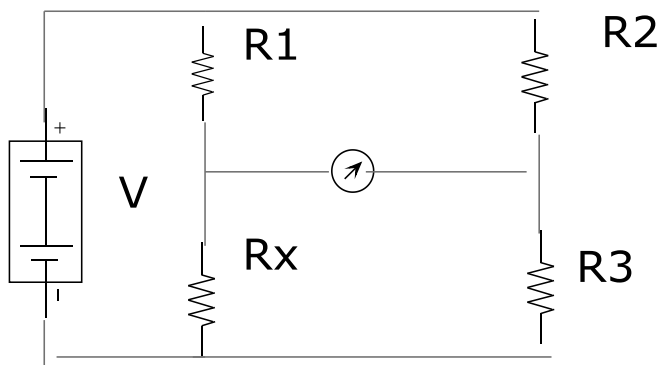
A circuit is fed with a 9V supply but a 4V ground potential is required at the base of a transistor. If this voltage is to be derived from 12 K Ω resistor connected to ground. Calculate the value of second resistor forming potential divider.

A	30K Ω	B	20K Ω
C	15K Ω	D	5K Ω
Answer			

Ref 13

Find RX

If R1=1000 Ω , R2=1000 Ω ,R3=2715 Ω , V= 1.5V at bridge balanced condition.



A	2715 Ω	B	3000 Ω
C	1000 Ω	D	2000 Ω
Answer		A	

Ref 15

A cell has emf 1.5V and internal resistance 0.5 ohm. Calculate its terminal voltage at (a) No load (b) providing 200mA current (c) when connected to a load of 8 ohm.

A	3V, 2.8V, 2.8V	B	1.5V, 1.4V, 1.41V
C	6V, 1.4V, 1.4V	D	3V, 1.4V, 1.41V
Answer			

Ref 16

A battery is made by connection 8 cells in series. Each has 1.5V and internal resistance 0.35 ohm. Calculate (a) EMF & internal resistance of battery. (b) The terminal voltage when supplying 400mA. (c) The current & terminal voltage when a load of resistance 20 ohm is connected to battery.

A	12V, 2.8 Ω, 10.11V	B	15V, 1.4 Ω, 5.1V
C	12V, 2.8 Ω, 5.1V	D	6V, 2.8 Ω, 10.11V
Answer			

EE102 Basic Electrical Fitting & Wiring

Tutoring Lessons

[Lesson 1](#) [Lesson 2](#) [Lesson 3](#)

Test & Assessment

<http://www.classroomclipboard.com/503511/Home/Test/e3b8ef2c72e94d209034f9633e22c26a#/InitializeTest.xaml>

Type your name Put the following access code

CEAHU

EE111 Electromagnetism & Basic Electrical Machines

Tutoring Lessons

[Lesson 1](#)

Test & Assessment

http://www.filefactory.com/file/7c658zyrj9gx/n/G001_Online_Test_1_Question_pdf

http://www.filefactory.com/file/1h8minstf7ux/n/G001_Online_Test_1_Answer_doc

Do the tests and send the answer sheet in soft copy by e-mail to **iqytechnicalcollege@gmail.com**

Password- **iqytechnicalcollege**

Study the notes

Lesson 1

And do the following exercises.

G001 Online Test

Ref137

The flux is equal to

A	$\phi = F_m / R_m$	B	$\phi = F_m \times R_m$
C	$\phi = R_m / F_m$	D	$\phi = F_m + R_m$
Answer			

Ref 138

R_m is equal to

A	$l\mu / A$	B	$L/\mu A$
C	$L\mu A$	D	$\mu A/l$
Answer			

Ref139

Flux density is equal to

A	ϕA	B	A/ϕ
C	ϕ/A	D	$\phi+A$
Answer			

Ref140

The torque produced in electric motor is equal to

A	$T = BL r$	B	$T = Br/ L$
C	$T = BL/ r$	D	$T + Br + L$
Answer			

Ref141

A plunger brake electro-magnetic operates at a flux density of 12 tesla. If the CSA of the magnetic circuit is 0.04 sq-m and reluctance is 12000 amp-turn / wb, what current is required to operate the magnet if the coil has 1000 turns.

A	0.288A	B	0.576A
C	1.3A	D	2.8A
Answer			

Ref142

The induced voltage in conductor moving in magnetic field is

A	$E = BLV \sin\theta$	B	$E = BLV \cos\theta$
C	$E = BLV$	D	$E = Bl \sin\theta$
Answer			

Ref143

The voltage induced in coil of N turns is

A	$V = N \phi$	B	$V = NI$
C	$V = N \times d\phi / dt$	D	$V = N^2 \phi$
Answer			

Ref144

What is the velocity of a conductor 150 mm long and moving at right angle to magnetic field having a flux density of 0.4 tesla? The induced voltage is 4V.

A	6 m/s	B	1.5 m/s
C	12 m/s	D	3.3 m/s
Answer			

Ref145

The force between two current carrying conductors is

A	$F = 10^{-7} I / d$	B	$F = NI / d$
C	$F = 2 \times 10^{-7} I / d$	D	$F = 4 \pi 10^{-7} I / d$
Answer			

Ref146

A transformer has 50 turns on the primary and 600 turns on secondary . If a flux of 0.25 wb is induced to zero in 10 ms, calculate the induced emf in each coil.

A	$E_1 = 250V, E_2 = 3000V$	B	$E_1 = 2500V, E_2 = 30000V$
C	$E_1 = 300V, E_2 = 25000V$	D	$E_1 = E_2 = 3000V$
Answer			

Ref147

If a conductor is being rotated at 2000 RPM in magnetic field and induces 400V . If it is rotated at 1000 RPM.. Find the induced emf.

A	100V	B	200V
C	400V	D	50V
Answer			

Ref148

A 240 V coil 5000T produces magnetizing force 4000AT/ m . The magnetic circuit is 200 mm long. CSA 500 sq-mm. Find the resistance of the coil.

A	1500Ω	B	3000Ω
C	750Ω	D	150Ω
Answer			

EE112 Alternating Current Principle

Tutoring Lessons

[Lesson 1](#) [Lesson 2](#)

Test & Assessment

http://www.filefactory.com/file/7ebmnciqxmf3/n/G002_Online_Test_1_Question_pdf

http://www.filefactory.com/file/6d3yokhjziur/n/G002_Online_Test_1_Answer_doc

Do the tests and send the answer sheet in soft copy by e-mail to **iqytechnicalcollege@gmail.com**

Password- **[iqytechnicalcollege](#)**

And do the following exercises.

G002 Online Test

Ref149

A sine wave voltage of 240V RMS is applied to a resistive circuit of 60Ω. Calculate(a) RMS value of current (b) Maximum value of current.

A	2A, 4A	B	4A, 5.65A
C	2A, 2.8A	D	1A, 2A
Answer			

Ref150

A coil of negligible resistance draws a current of 0.2A (RMS) when connected to 240V, 50HZ.

(a) Determine inductive reactance (b) Coil inductance.

A	600Ω , 3.8 H	B	1200Ω , 1.9 H
C	1200Ω , 3.8 H	D	1800Ω , 7.6 H
Answer			

Ref151

A 64 mH inductor is connected in series with a 300Ω resistor to a 1000HZ AC supply voltage of 10V rms. Find (a) the impedance (b) The phase angle (c) The current (d) the potential drop across resistor.

A	500Ω ,(53.2 Deg), 0.002A (-53.2Deg), 6V,8V	B	500Ω ,(36.8 Deg), 0.001A (+53.2Deg), 8V,6V
C	500Ω ,(0 Deg), 0.002A (-0 Deg), 6V,8V	D	500Ω ,(90 Deg), 0.002A (-90 Deg), 6V,8V
Answer			

Ref152

Find the current in the circuit when an AC voltage 10V rms at 1000HZ is applied to 2 μF capacitor.

A	0.375A	B	0.25A
C	0.125A	D	0.5A
Answer			

Ref153

A 1 μF capacitor is connected in series with 200 Ω resistor to 10V rms. 1600HZ supply. Find (a) the impedance (b) The phase angle (c) The current (d) Potential drop across resistor (e) Potential drop across capacitor.

A	111.3Ω ,(-26.5 Deg), 0.0224A (-26.5Deg), 4.5V,2.24V	B	222.6Ω ,(+26.5 Deg), 0.0224A (-26.5Deg), 9V ,4.48V
C	222.6Ω ,(0 Deg), 0.0224A (0 Deg), 9V ,4.48V	D	222.6Ω ,(-26.5 Deg), 0.0448A (+26.5Deg), 9V ,4.48V
Answer			

Ref154

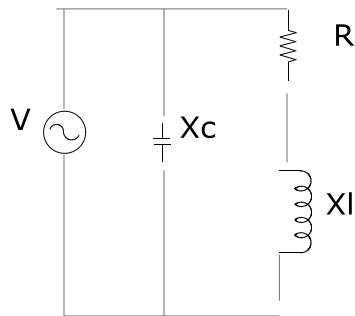
A series circuit is connected to a 10V rms AC supply. The circuit has resistance 100 Ω, inductive reactance 300 Ω, capacitive reactance 400 Ω. Find (a) Impedance (b) Current (c) Phase angle (d) Voltage drop across resistor (e) Voltage drop across inductor (f) Voltage drop across capacitor.

A	141 Ω (Angle -45 Deg), 0.071A, 45 Deg, 7.1V, 21.3V,28.4V	B	70.7 Ω (Angle +45 Deg), 0.035A, 45 Deg, 3.35V, 10.65V,14.2V
C	141 Ω (Angle 45 Deg), 0.071A,-45 Deg 7.1V, 28.4V, 21.3V	D	141 Ω (Angle 0 Deg),0.071A, 0 Deg, 7.1V, 21.3V, 28.4V
Answer			

Ref155

The following is a diagram of a parallel circuit with a supply voltage 100V rms at 50Hz. Determine the followings.

(a) Total circuit current (b) Total circuit impedance (c) Phase angle between circuit current and applied voltage (d) Power factor of circuit.



$X_c = 318.5 \Omega$, $R = 100 \Omega$, $X_l = 94.2 \Omega$, $V = 100 \text{ V}$, 50 Hz

A	1.8A (Angle -36.8 Deg), 206 Ω , 56.86 Deg, 0.8	B	0.97A (Angle +36.8 Deg), 103 Ω , 36.8 Deg 0.59
C	0.97A (Angle -36.8 Deg), 103 Ω , 36.8 Deg 0.59	D	0.97A (Angle +53.2 Deg), 206 Ω , 53.2 Deg 0.59
Answer			

Ref156

A capacitor draws 0.971 Amp at PF 0.34 from 100V supply. Total power is

A	36.8W	B	100W
C	52.43W	D	70.7 W
Answer			

Ref157

The phase voltage and current in 3 phase star connected current are 240V and 50A. Find the line voltage and line current.

A	415V rms, 50A	B	240V rms, 50A
C	415V rms, 86.5A	D	240V rms, 86.5A
Answer			

Ref158

A delta connected load takes a line current 40A and line voltage 415V. Find (a) Phase current (b) Phase voltage

A	40A, 415V	B	23.1A, 415V
C	40A, 240V	D	23.1A. 240V
Answer			

Ref159

Three phase 415V, 37.3 KW, Delta connected alternator has efficiency 90% and PF 0.88 Lagging. Find (a) Line current (b) Phase current.

A	130A, 75.6A	B	65.5 A, 75.6A
C	65.5A, 37.8A	D	130A, 37.8A
Answer			

EE113 Electrical Fundamental

Tutoring Lessons

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Test & Assessment

http://www.filefactory.com/file/r372kwb529d/n/E029_G012_Online_Test_1_Question_pdf

http://www.filefactory.com/file/73yyxs4hpdmv/n/E029_G012_Online_Test_1_Answer_doc

Do the tests and send the answer sheet in soft copy by e-mail to **iqytechnicalcollege@gmail.com**

Password- **iqytechnicalcollege**

Study the EE113 file notes and then do the following exercises.

E029+G012 Online Test

Ref40

3 voltages , phase to neutral are measured to be 220V, 215V and 210V on nominal 415V , 50Hz. The percentage voltage imbalance is

A	2.3%	B	6%
C	4.6%	D	10%
Answer			

Ref41

The synchronous speed is

A	$N_s = 120f / p$	B	$N_s = P / 120f$
C	$N_s = Pf / 120$	D	$N_s = 120f$
Answer			

Ref42

Torque is

A	Torque \propto Voltage	B	Torque \propto 1/ voltage
C	Torque \propto Voltage ²	D	Torque \propto Voltage x Current
Answer			

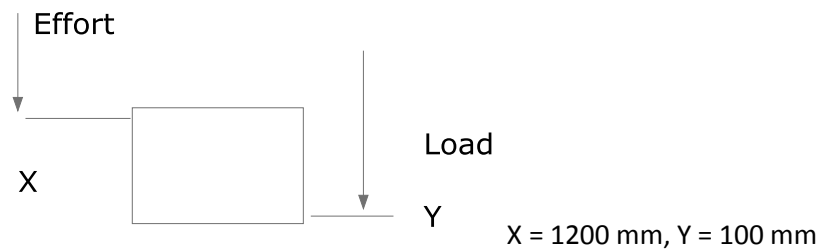
Ref43

Permissible starting current for two motors (a) 15KW , 415V & (b) 15KW , 415V are

A	102.5A & 82.3A	B	200A & 60A
C	300A & 100A	D	50A & 40A
Answer			

Ref44

A simple machine in figure, the load is 450N, effort is 60N. the load and effort movement is 100mm and 1200 mm respectively. The mechanical advantage and velocity ratio are



A	18, 6	B	20,10
C	10,12	D	9,12
Answer			

Ref45

The weight of a tabular steel column 120 mm outside diameter and 100 mm inside diameter and 3 m height is

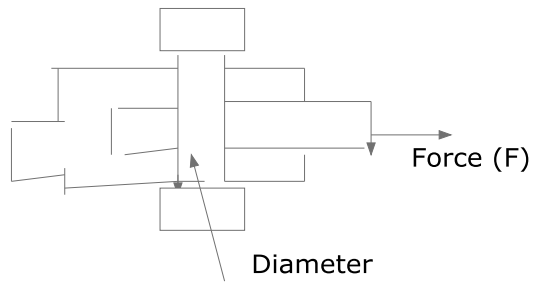
A	1000N	B	500N
C	400N	D	793.3N
Answer			

Ref46

A steel specimen 10 mm diameter rupture under 37KN , the ultimate strength is

A	800N/mm ²	B	1200N/mm ²
C	471N/mm ²	D	1024N/mm ²
Answer			

Ref47



Diameter = 10 mm² Force (F) = 37 KN

The stress is

A	1200N/mm ²	B	471N/mm ²
C	1000N/mm ²	D	200N/mm ²
Answer			

Ref48

22 Kw , 4 poles , 415 V, full load current 38 amp, three phase induction motor

Locked rotor current = 600% of I fl. Locked rotor torque = 155% Tfl Starting current and starting torque for (i) Star / delta (ii) Primary resistance starting (iii) Auto transformer starting with 55% tapping are

A	200%, 51.7%, 600%, 46.9%	B	100%, 20%, 300%, 23%
C	50%,50%,600%,46.9%	D	100%,51.7%,300%,46.9%
Answer			