Diploma + Advanced Diploma Level

EE101 DC Circuit Problems

Lesson 1 Lesson 2 Lesson 3

Test & Assessment

Do the tests and send the answer sheet in soft copy by e-mail to

Week 1

UEECD0044+UEECD0046

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 KΩ	B	3 KΩ
C	4 KΩ	D	1 KΩ
	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	680Ω, 0.1A	B	800Ω, 0.2A
C	100Ω, 1A	D	1200Ω,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		

Ref 5

Resistors of 33K Ω, and 68 KΩ are connected in parallel to 50V. Calculate (a) total circuit resistance (b) total circuit current (c0 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		

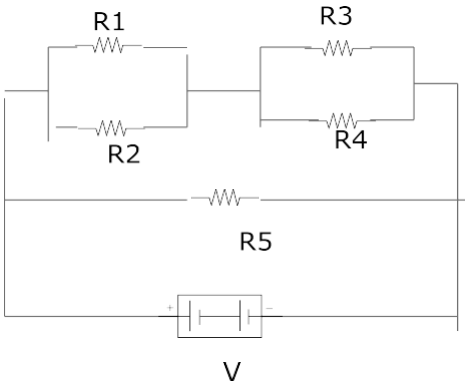
Ref 6

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)Rt (b) It (c) 2 Ω resistor current.



R1=2 Ω, R2=8Ω , R3=3 Ω, R4= 6 Ω, R5=7.2 Ω. 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 KΩ and 1.2 KΩ 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) Rt (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

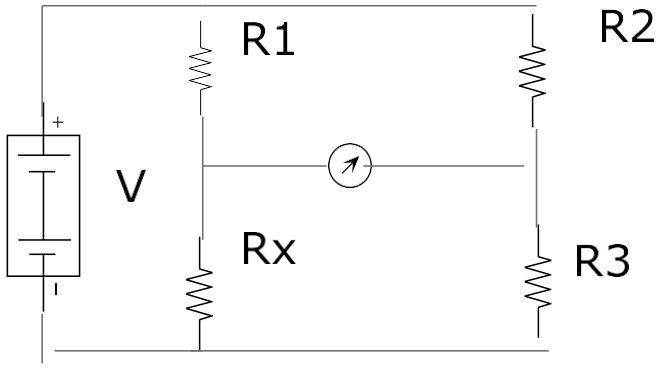
A circuit is fed with a 9V supply but a 4V ground potential is required at the base of a transistor. If this voltage is to be derived from12 KΩ resistor connected to ground. Calculate the value of second resistor forming potential divider.

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	1000Ω	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		

UEECD0019+UEECD0020

EE102 Basic Electrical Fitting & Wiring

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

Study EE102 & then do the following Exercises

EE102 Exercises

Q1

Ref 575

The tests to be conducted for electrical installation safety are

- Earthing system test
- Insulation resistance test
- Polarity test
- All above

Q2

Ref 574

The insulation resistance must be

- very high
- very low

Q3

Ref 573

The resistance of earth must be less than

- 2 ohm
- 10 ohm
- 20 ohm

Q4

Ref 572

The switch should be connected on

Q5

Ref 571

The colour of earth wire is

- Red
- Black
- Green and yellow

Q6

Ref 570

The colour of neutral wire is

- Black
- White
- Green

Q7

Ref 569

The colours of active wire are

- Red
- Blue
- Black
- Brown
- First and last one

Q8

Rer 568

Two types of failure of fixing are

Q9

Ref 567

How many nails should be driven into each brick

- One
- Two
- Three

Q10

Ref 566

Nail should not be driven into mortar joint

- True
- False

Q11

Ref 565

To drill the hole, a pilot hole must have

- The same diameter as to the hole that you want to drill
- Smaller diameter as to the hole that you want to drill
- Bigger diameter as to the hole that you want to drill

Q12

Ref 564

It is safe to remove the person who is electrocuted at 1000V

- True

- False

Q13

Ref 563

To use the hand held electrical equipments in the workplace, the insulation must be

- Double insulation
- Single insulation

Q14

Ref 562

It is safe to walk in forklift way in the factory and stand under the scaffolding

- True
- False

Q15

Ref 561

To lift a heavy equipments

- Bend the kneel and lift with kneel force
- Bend the back and simply lift it

Q16

Ref 560

Safety glass and safety hat are included in

Q19

Ref 559

Employer will not need to take any responsinility to provide the safe operational equipments in the workplace

- True
- False

UEECD0051

EE103 Basic Electrical Drafting

ElectricalDrawing1.zip

ElectricalDrawing2.zip

ElectricalDrawing3.pdf

GeneralDrawing1.zip

GeneralDrawing2.zip

Test & Assessment

Stage_1_Electrical_workshop_practicals.pdf

Draw the diagrams from page 37 to 52 and give it to Highlight Computer Group Manager/ Teacher/ Principal, they will forward your work to the assessor

EE103 Basic Electrical Drafting

Copy & sketch the diagrams given in Page 37 to 52 of the attached PDF file Stage 1 Electrical workshop practicals for advanced diploma students Version 1.pdf.

Stage 1 Electrical workshop practicals for advanced diploma students Version 1

UEEEL0003
EE104 Electrical Equipments Safety Protection

Lesson 1

Test & Assessment

Study all lessons in EE104+EE105+EE106+EE107 and EE108 and sit the test for EE106+EE108

Study the notes in EE104 Power Points & do the following exercises.
Q1.Sketch RCD Connection
Q2.Sketch earthing system and earthing arrangement.
Q3.What is the supplementary system for earthing?
Q4. What are the types of earthing systems?
Q5.Sketch the connection diagram for smoke alarm.
Q6.Why earthing system is provided?
Q7.Sketch the arrangement of an earthing system.
Q8.Write the formula to calculate the voltage drop.
Q9.How will you isolate the live parts?
Q10.What is the meaning of ELCBN

UEEEL0025
EE105 Electrical Installation Design

EE107 Electrical Equipments

Lesson 1 Lesson 2 Lesson 3 Lesson 4

Test & Assessment

Study all lessons in EE104+EE105+EE106+EE107 and EE108 and sit the test for EE106+EE108 to get the points for all those units.

EE105 Electrical Installation Design
EE107 Electrical Equipments

Study the powerpoints in
EE105+107 Power Point Part 1
EE105+107 Power Point Part 2
EE105+107 Power Point Part 3
EE105+107 Power Point Part 4
and do the following exercises.

EE105+107 Power Point Part 1
Q1.Describe the structure of wiring rules

Q2.Take the practice on problem in presentation 48.

EE105+107 Power Point Part 2

Q3.Determine the maximum route length of 6 mm^2 bare copper single phase consumer main with maximum demand of 80A and permissible voltage drop of 4.3 V.

EE105+107 Power Point Part 3

Q4.

Calculate the voltage drop in each segment of a 3 phase 400 volt non-domestic installation consisting of the followings.

Consumer main

Phase = 3 Maximum demand 45 Amp Route length = 25 m
Cable size 16 mm^2
Cable configuration V90 Single core thermo plastic and sheathed copper conductor

Cable installation

The circuit is enclosed in heavy duty rigid thermoplastic conduit with no other circuits. Conduit is buried in the ground having an ambient soil temperature of 25 ˚C and has a top cover of 0.65 m.

Sub main

Phase = 3 Maximum demand = 35 A, Route length = 35 m
Cable size = 10 mm^2

Cable configuration

V90 Single core thermoplastic and sheathed copper conductors structure in trefoil formation and installed in single circuit configuration unenclosed in air

Final sub circuit

Phase = 1 Maximum demand = 20 Amp Route length = 35 m
Cable size = 4 mm^2
Cable configuration - V90 two cores and earthed thermoplastic and sheathed copper conductors
Cable installation - The cables are clipped to the building structure and installed in single circuit configuration , unenclosed in air.
Does this portion of the installation comply with the voltage drop requirement of AS/NZS 3000 ?

EE105+107 Power Point Part 4

Q5.

A final sub-circuit supplies a load consisting of a range in a domestic installation and is protected by 32A Type C circuit breaker. Determine the maximum internal fault loop impedance of final sub circuit based on 230V when supply is unavailable.

EE106 Advanced Electrical Wiring

EE108 Electrical Fault Finding

Lesson 1 Lesson 2 Lesson 3 Lesson 4

Test & Assessment

http://www.classroomclipboard.com/503511/Home/Test/334df2651a9440aa8fe25532f0e3d7c5#/InitializeTest.xaml

Type your name Put the following access code

NY78T

Then do the following exercises.

1) Ref 604

A final subcircuit supplies a load consisting of 25A outlet and protected by 25A HRC fuse. Determine the maximum fault loop impedance of final subcircuit & based on 230V.

2) Ref 603

Final subcircuit supplies a load consisting of a range in domestic installation & is protected by 32A CB . Determine maximum internal fault loop impedance of final subcircuit based on 230V.

3) Ref 602

Write the formula to calculate the voltage drop in electrical cable

4) Ref 601

Describe the overview of AS 3000 Electrical wiring rule.

5) Ref 600

What are the requirements to install the switch board?

6) Ref 599

Explain the installation of switch board

7) Ref 598

Explain the operation principle of RCD with sketch

8) Ref 597

Explain the requirements of switch board in domestic electrical installation

9) Ref 596

Sketch the connection of a typical switch board

10) Ref 595

Describe the followings
(a) Basic protection principle (b) Overload and short circuit protection

11) Ref 594

Explain the explosion protection techniques.

12) Ref 593

Sketch TPS wiring system

13) Ref 592

Explain underground wiring system with sketch

14) Ref 591

Explain the following equipments

(a) Water heater (b) Cooking appliances (c) Motor

15) Ref 590

Sketch earthing system and earthing arrangement

16) Ref 589

Explain electrical installation safety testing procedures

17) Ref 588

Sketch the polarity testing circuits

18) Ref 587

What are the types of RCD?

19) Ref 586

Outline the overload protection devices

20) Ref 585

(a) Explain earthing protection

UEEEL0005

EE109 Electrical Control Circuits

Lesson 1 Lesson 2

Test & Assessment

http://www.classroomclipboard.com/503511/Home/Test/618fafbe4aae4b6ab065df53cf9aebbb#/InitializeTest.xaml

Type your name Put the following access code

U8FS3Y

And do the following exercises.

1) Ref 610

Sketch the equivalent circuit and vector diagram of

(a) Synchronous generator (b) Synchronous motor

2) Ref 609

Sketch the equivalent circuit of transformer

3) Ref 608

Describe the losses in transformer

4) Ref 607

What is transformer rating?

5) Ref 606

Write the procedure to detect the fault.

6) Ref 605

Explain the operation principle of three phase induction motor

UEECS0033

EE110 Computer Applications

The students can attend any computer course and take the training in Microsoft Word, Excel, Access, Internet E-mail application. On submission of the completed certificate, the credit for EE110 Computer Applications will be given.

Download the following e-books

WORD

http://www.filefactory.com/file/2s874qnp7jfr/n/word-2007-introduction-part-i_pdf

http://www.filefactory.com/file/7824v6tjha2v/n/word-2010-introduction_pdf

Take the practice on application of software.

Do the following assignments & submit them by e-mail.

ASSIGNMENT (1)

Follow the instruction given in e-Books, you prepare & present three evidences of documents such as Typed Letters, Table, Diagram etc.

http://www.filefactory.com/file/4lvl2i748egz/n/microsoft-office-excel_pdf

Take the practice on application of software.

Do the following assignments & submit them by e-mail.

ASSIGNMENT (2)

Follow the instruction given in e-Books, you prepare & present three evidences of documents such as Table, Diagram , inserting the formula, graphics etc.

POWERPOINT

http://www.filefactory.com/file/4vuoppxsfki3/n/powerpoint-2007-part-i_pdf

Take the practice on application of software.

Do the following assignments & submit them by e-mail.

ASSIGNMENT (3)

Follow the instruction given in e-Books, you prepare & present three evidences of documents of power point presentation. You can insert the typing, diagram, picture, sound, video etc.

UEEEL0019+UEEEL0021

EE111 Electromagnetism & Basic Electrical Machines

Lesson 1

Test & Assessment

Study the notes

Lesson 1

And do the following exercises.

G001 Online Test

Ref137

The flux is equal to

A	ϕ = Fm / Rm	B	ϕ = Fm x Rm
C	ϕ = Rm / Fm	D	ϕ = Fm + Rm
	Answer		

Ref 138

Rm is equal to

A	$l\mu$ / A	B	L/μ A
C	Lμ A	D	μ 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	$E = BI \sin\Theta$
	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	E1 = 250V, E2 = 3000V	B	E1 = 2500V, E2 = 30000V
C	E1 = 300V, E2 = 25000V	D	E1 = E2 = 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		

UEEEL0020

EE112 Alternating Current Principle

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

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 (a0 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

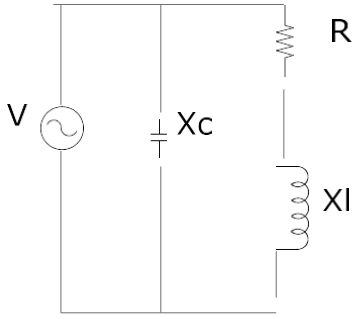
A series circuit is connected to a 10V rms AC supply. The circuit has resistance 100 Ω, inductive reactance 300 Ω , capacitive reactance 400 Ω. Find (a) Impedance (b) Current (c) Phase angle (d) Voltage drop across resistor (e) Voltage drop across inductor (f) Voltage drop across capacitor.

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.



Xc= 318.5 Ω, R=100 Ω,Xl = 94.2 Ω, V = 100 V, 50Hz

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		

UEEEL0020+UEECD0005

EE113 Electrical Fundamental

Lesson 1 Lesson 2 Lesson 3

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	Ns = 120f / p	B	Ns = P / 120f
C	Ns=Pf / 120	D	Ns= 120f
	Answer		

Ref42

Torque is

A	Torque α Voltage	B	Torque α 1/ voltage
C	Torque α Voltage^2	D	Torque α Voltage x Current
	Answer		

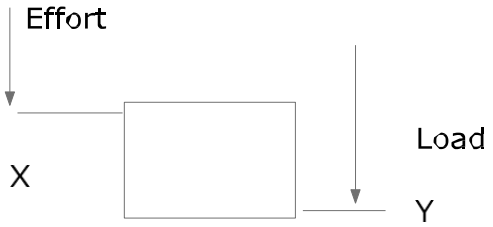
Ref43

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



X = 1200 mm, Y = 100 mm

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

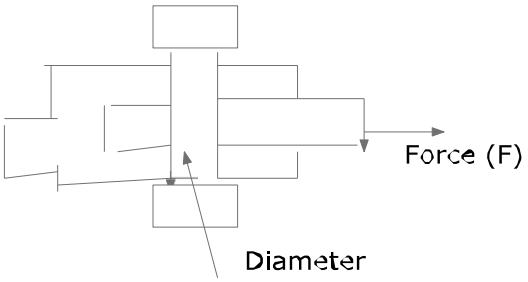
A	1000N	B	500N
C	400N	D	793.3N
	Answer		

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 mm^2 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

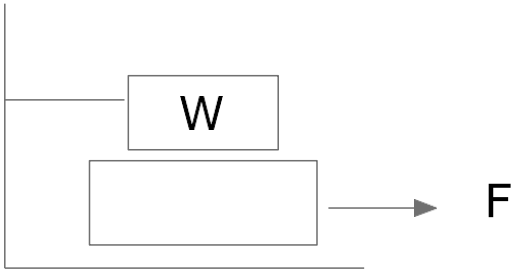
A	200%, 51.7%, 600%, 46.9%	B	100%, 20%, 300%, 23%
C	50%,50%,600%,46.9%	D	100%,51.7%,300%,46.9%
	Answer		

Ref49

600 mL sulphuric acid has a mass of 1.11 Kg, The density and relative density are

A	3000 kg/ m^3 , 3	B	4000 kg/ m^3 , 4
C	5000 kg/ m^3 , 1	D	1850 kg/ m^3 , 1.85
	Answer		

Ref50



W = 100 kg

A 100 kg block rests on a plate. The coefficient of friction between all surface is 0.2. The force required to pull the plate is

A	100 N	B	392.4 N
C	800 N	D	700 N
	Answer		

Ref51

The total stopping distance of a car for total time taken from the point where the driver sights the danger if the driver's reaction time before applying the brake is 0.9 sec with initial velocity 60 km/ hr and retardation due to brake is 7.5 m/ s^2

A	60m	B	33.5m
C	100m	D	150m
	Answer		

Ref52

A car starts from the rest at the rate of 1.2 m /s^2 for 15 sec. The velocity reached after 15 second is

A	36 m/ s	B	54 m/ s
C	9 m/s	D	18 m/s
	Answer		

Ref53

A flywheel makes 200 revolutions. Torque is 35 N-m. The work is

A	44000J	B	22000J
C	11000J	D	66000J
	Answer		

Ref54

The work done for force 50N that moves a block to distance 3 m is

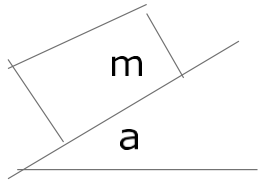
A	300J	B	450J
C	750J	D	150J
	Answer		

Ref55

The acceleration of a body of 25 kg mass due entirely to it's own weight is

A	9.81 m /s^2	B	16 m /s^2
C	29 m /s^2	D	4 m /s^2
	Answer		

Ref56



a = 35 degree

The acceleration of a given mass sliding down the plane is

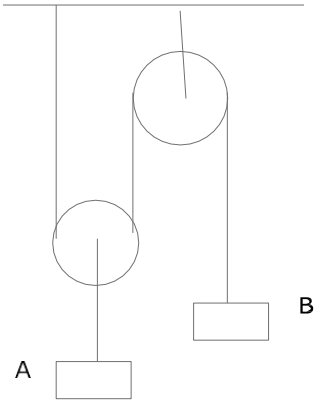
A	20 m /s^2	B	2 m /s^2
C	5.63m /s^2	D	3 m /s^2
	Answer		

Ref57

A train of total mass 120 ton is travelling at 60 km/hr on level track. The tractive resistance is 80N/ton. Calculate the tractive effort required to accelerate the train to 100 km/hr in 35 second.

A	108 KN	B	37 KN
C	72 KN	D	54 KN
	Answer		

Ref 58



A = 5 kg B = 2 kg

The acceleration of bodies A and B and the force tension in the cord are

A	1.51m /s^2, 22.6N	B	0.75 m /s^2, 11.6N
C	3m /s^2, 30N	D	4m /s^2, 40N
	Answer		

Ref59

Determine the net torque required to give a flywheel with a mass moment of inertia 0.8kg-m^2, angular acceleration is 18 rad/s^2 .

A	24 N-m	B	12 N-m
C	36 N-m	D	54 N-m
	Answer		

Ref60

Determine the torque required to accelerate a turbine rotor under going a dynamic balancing test from rest to a speed of 56000 rpm in 80sec. If the mass moment of inertia of rotor is 11.5 kg-m^2.

A	225.8 N-m	B	112.5 N-m
C	300 N-m	D	400 N-m
	Answer		

Ref61

Determine the centrifugal force acting on a passenger of mass 75 kg in a car travelling at 90 km/hr around a curve of 100 m radius.

A	900 N	B	600 N
C	468.75 N	D	234 N
	Answer		

Ref62

A train moving at 63 km/hr requires 40 KN of tractive effort at this speed . Determine the driving power.

A	700 KW	B	350 KW
C	900 KW	D	1000 KW
	Answer		

Ref63

Calculate the kinetic energy of mass moment of inertia of 61 kg-m^2rotating at 250 rpm.

A	10452 J	C	20904 J
C	30000 J	D	40000 J
	Answer		

Ref64

A block of mass 2 kg is freely suspended on a string. A bullet of mass 75 g is fired horizontally into the block. If the velocity of the bullet before the impact is 415 m/s, calculate the velocity of block with the bullet embedded in it immediately after the impact.

A	30 m/s	C	45 m/s
C	60 m/s	D	15 m/s
	Answer		

Ref65

When a golf ball having a mass 50 g is struck by club. The ball and club are in intact for 0.001 sec immediately after the impact. The ball travels at 45 m/s. Determine the average force of collision.

A	6000 N	C	3000 N
C	1500 N	D	7500 N
	Answer		

UEEEL0062

EE114 Electrical Power Principle

Lesson 1 Lesson 2 Lesson 3

Test & Assessment

Password- **iqytechnicalcollege**

Study the files EE114
Do the exercises

2

Ref163

The measured speed of three phase , 4215V, 50HZ, 2 poles motor is 2700 rpm. . Slip and % slip are

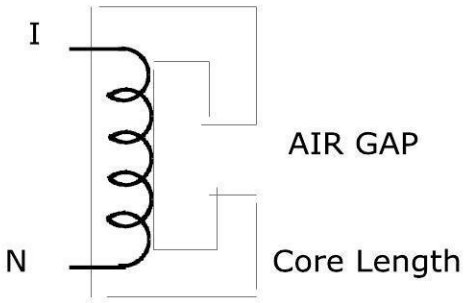
A	0.2, 20%	B	0.15, 15%
C	0.3, 30%	D	0.1, 10%
	Answer		

Ref164

The relationship between voltage, current and number of turns of a transformer is

A	V1/ V2 = N1/N2 = I2/I1 = a	B	V1/ V2 = N2/N1 = I2/I1 = a
C	V1/ V2 = N1/N2 = I1/I2 = a	D	
	Answer		

Ref165



N = 350 Turns, Air Gap = 0.15mm, Core length = 1250mm, Flux density = 1.105 T , μ = 1800

The current I is

A	6.2 A	B	9.3A
C	1.26A	D	3.16A
	Answer		

G012 Online Test

Ref160

The force produced in three phase winding of AC machine is

A	$\frac{3\ Im\ N\ e^{jwt}}{2}$	B	$\frac{Im\ N\ e^{jwt}}{2}$
C	$\frac{\sqrt{3}\ Im\ N\ e^{jwt}}{2}$	D	$\sqrt{3}\ Im\ N\ e^{jwt}$
	Answer		

Ref161

Three phase , 4 poles , 36 slots, 50HZ winding . The coil span is

A	7	B	8
C	9	D	10
	Answer		

Ref162

The speed of 2 poles, 25 HZ motor is

A	3000 rpm	B	1500 rpm
C	750 rpm	D	1000 rpm
	Answer		

Ref166

The voltage regulation of a synchronous generator is

A	$\frac{Ef - V}{V} \times 100\,\%$	B	$\frac{Ef}{V} \times 100\,\%$
C	$\frac{V - Ef}{V} \times 100\,\%$	D	
	Answer		

Ref167

Synchronous impedance is

A	Z s = Voc / Isc	B	Z s = Vsc / Isc
C	Z s = Voc / Ioc	D	
	Answer		

Ref168

The voltage equation for synchronous generator is

A	Ef = V + I Zs	B	Ef = V – I Zs
C	Ef = V x I Zs	D	Ef = V / I Zs
	Answer	A	

Ref169

The voltage equation for synchronous motor is

A	Ef = V + I Zs	B	Ef = V – I Zs
C	Ef = V x I Zs	D	Ef = V / I Zs
	Answer		

Ref45

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

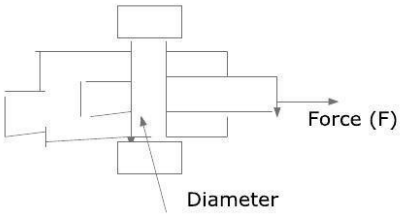
A	1000N	B	500N
C	400N	D	793.3N
	Answer		

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 mm^2 Force (F) = 37 KN

The stress is

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

UEEIC0040+UEEIC0042

E115 Basic Analogue & Digital Electronics

EE116 Process Control System

Lesson 7

Lesson 8 Lesson 9 Lesson 10

Test & Assessment

http://www.filefactory.com/file/46zzpcym7uqz/n/I006_H012_Online_Test_1_Question_pdf

http://www.filefactory.com/file/4e2chw2sf343/n/I006_H012_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 followings

EE115+EE116 Files

And do the following exercises.

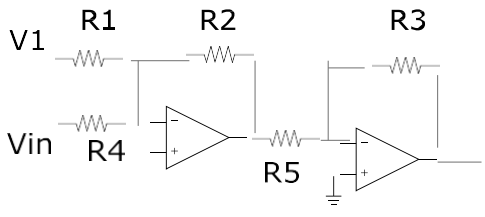
I006+ H012 Online Test

Ref501

_____provides the operation necessary to transform the sensor output into a form necessary to interface with other elements of process control lop.

A	Analogue signal conditioning	B	Digital signal conditioning
C		D	
	Answer		

Ref504



V1=5V, R1=R2=34KΩ, ,R3=R4=R5=10 KΩ,

Vout for above circuit is

A	Vout= 1.7 Vin + 5	B	Vout = 3.4 Vin
C	Vout = 1.7 Vin	D	Vout= 3.4 Vin +5
	Answer		

Ref507

TTL 74LS 193 A CMOS 4035 ICs are used for

A	Parallel in / Parallel out function	B	Serial in / Parallel out function
C	Parallel in / Serial out function	D	Serial in / Serial out function
	Answer		

Ref510

The number of data signal lines required for 7 segments display is

A	7	B	8
C	9	D	10
	Answer		

Ref513

Events occur after the previous event is completed. The device is_____.

A	Combinational logic	B	Sequential logic
C	Synchronous logic	D	Asynchronous logic
	Answer		

Ref516

45_{10} =

A	101101_2	B	100101_2
C	111001_2	D	101010_2
	Answer		

Ref519

The device in which only one input at a time is activated to produce specific code at output is

A	Decoder	B	Encoder
C	Multiplexer	D	Demultiplexer
	Answer		

Ref522

Latch can store

A	Only one bit of information	B	A number of bits at one time
C		D	
	Answer		

Ref525

Decimal equivalence of 47H is

A	71	B	781
C	29	D	112
	Answer		

Ref528

Temperature is measured by a sensor with output 0.02 V/ ° C . Determine ADC Reference & word size to measure 0 to 100°C resolution.

A	0.039V/ step	B	0.078V/ step
C	0.156V/ step	D	0.312V/ step
	Answer		

Ref531

What is the HEX output of a bipolar 12 bit ADC with a 5 V reference for input -0.85V

A	54H	B	108H
C	27H	D	39H
	Answer		

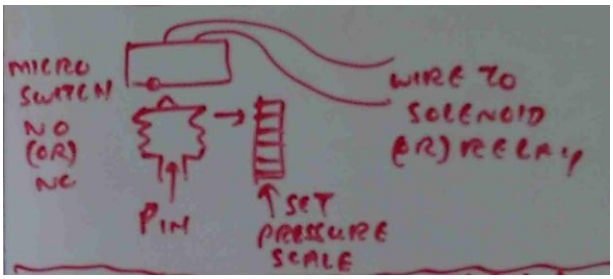
Ref534

ADC has been developed to interface with microprocessor. Data from ADC is placed on _____. When appropriate command is issued.

A	Address bus	B	Data bus
C	Control bus	D	
	Answer		

Ref537

The following is called_____.



A	Bellow operated on-off controller	B	On-off pressure control loop
C	Pnuematic force balance proportional controller	D	
	Answer		

Ref540

Derivative mode

A	Stabilizes the process	B	Resets the process
C	Compensates time lag in control loop	D	
	Answer		

UEERE0060+UEERE0061
EE117 Solar Electrical System

Lesson 1 Lesson 2 Lesson 3 Lesson 4 Lesson 5 Lesson 6

Password- **iqytechnicalcollege**

Test & Assessment

Read the following notes

K025_Note_1

K025_Note_2

And then

K025_Tutorials.zip

Do the exercises and give them to Highlight Computer Group Manager/ Teacher/

Study the followings EE117 Lessons
Then do the following exercises
Q1.Explain the operation principle of PV cell
Q2.Sketch the interconnection of PV modules
Q3.Write the equation for PV power conversion.
Q4.Find the output of a module operating at maximum power point giving the followings
Typical maximum power at STC = 77w, NOCT = 49 deg C Power output coefficient ϒ= -0.38 % Ambient temperature = 35 Deg C
Irradiance = 865 w/ m^2
Q5. Describe the production procedure of standard silicon solar cell.
Q6. Calculate daily energy output of 77W. Lead acid battery charging ambient temperature f derate = 1, V module = 14V , Irradiation = 4 wh / m^2, maximum module power rating = 72 W, NOCT = 49 deg C.
Q7. Calculate the daily energy output of a 100W poly crystalline module operating under the following conditions.
Maximum power point tracking regulator MPPT, Ambient day time temperature 25 Deg C , Irradiation 5.5 KWH / m^2. Environment with annual maintenance only. The manufacturer who tests the modules to international

standard guarantees the maximum modules power rating to be 95W and NOCT = 49 Deg C. ϒ = 0.5%

Q8.Describe solar radiation and shading assessment.

Q9.Write the equation for manual calculation of irridation data.

Q10.Sketch the followings (a) Series PV system (b) Parallel PV system (c) PV lighting system

Q11.Sketch PV water pumping system.

UETDRIS 033
EE118 Electrical Energy Supply System

Lesson 1 Lesson 2 Lesson 3

Test & Assessment

http://www.filefactory.com/file/50ox6xeklufp/n/G015_G046_Online_Test_1_Question_pdf

http://www.filefactory.com/file/4jzmn6sa4rkd/n/G015_G046_Online_Test_1_Answer_doc

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

Then do the following exercises

G015+G046 Online Test

Ref186

The transformer supplies a group of 4 feeders which have individual maximum demands of 2.5, 2.4, 4.3 and 1.6 MVA. If the diversity factor is 1.82, determine the maximum demand on transformer

A	5.93MVA	B	4.3MVA
C	10.8MVA	D	2.4MVA
	Answer		

Ref191

Find the insulation resistance per km of conductor diameter 1.6 cm and internal sheath diameter 5.08 cm. $\wp = 6 \times 10^{-14}$ Ω/ cm.

A	500 M Ω	B	100 M Ω
C	1103 M Ω	D	2000 M Ω
	Answer		

Ref196

The formula to calculate voltage regulation is

A	$\%Reg = \frac{IR\cos\phi r + IX\sin\phi r}{Er}$	B	$\%Reg = \frac{R\cos\phi r + IX\sin\phi r}{Er}$
C	$\%Reg = IR\cos\phi r + IX\sin\phi r$	D	$\%Reg = \frac{R\cos\phi r - IX\sin\phi r}{Er}$
	Answer		

Ref201

Which equipments is not included in trip circuit?

A	Sensor, potential transformer, current transformer	B	Battery
C	Relay contact	D	Circuit breaker
	Answer		

Ref206

Differential relay senses

A	Only one input	B	Three inputs
C	Two inputs	D	Four inputs
	Answer		

Ref 211.

Maximum reach and maximum reach angle are found in

A	Over current relay	B	Differential relay
C	Directional relay	D	Distance relay
	Answer		

Ref212

The operation of distance relay is based on

A	Based on impedance	B	Based on current
C	Based on frequency	D	Based on power
	Answer		

Ref213

The characteristics curve of distance relay is

A	Concentric circles	B	Parabola
C	Straight line	D	Hyperbola
	Answer		

Ref214.

Zone protection of distance relay is based on

A	Zoning in accordance with voltage	B	Zoning in accordance with current
C	Zoning in accordance with power	D	Zoning in accordance with impedance
	Answer		

Ref215.

Operating & restraining voltage and current are utilized in

A	Over current relay	B	Differential relay
C	Directional relay	D	Thermal over load relay
	Answer		

Ref216

Power line can be effectively protected by

A	Over current relay	B	Differential relay
C	Directional relay	D	Distance relay
	Answer		

Ref217

Explain the operation of distance relay is based on .

A	Based on impedance	B	Based on current
C	Based on frequency	D	Based on power
	Answer		

Ref218.

The shape of characteristics of over current relay is

A	Straight line	B	Circle
C	Curve	D	Pulse
	Answer		

Ref219.

Directional relay is also called

A	Distance relay	B	Reverse power relay
C	Differential relay	D	Over current relay
	Answer		

Ref220

Earthing transformer is utilized at

A	Star connected winding side	B	Delta connected winding side
C	Zigzag connected winding side	D	None of above
	Answer		

Ref225

In CT, primary and secondary windings

A	Closely linked	B	Loosely linked
C		D	
	Answer		

Ref230

The following equation

Mc $d^2\delta/dt^2 = P_o - P_m \sin \delta$ is utilized to determine

A	Stability of generation	B	Power flow
C	Phase sequence	D	
	Answer		

Ref231

The suitable winding method for earthing transformer is

A	Star/ Delta	B	Delta/Star
C	Delta/Delta	D	Zig Zag
	Answer		

Ref232

Reactors are utilized at busbar to

A	Provide inductance	B	Limit short circuit current
C	Increase disruptive critical voltage	D	Earth leakage current flow path
	Answer		

Ref233

The best way to increase the level of disruptive critical voltage to reduce the possibility of corona is

A	To increase conductor diameter	B	To use longer cross arm
C	To use hollow conductor that increase the conductor diameter	D	To increase insulation resistance
	Answer		

Ref234

Switching voltage velocity is

A	$V = 1/\sqrt{LC}$	B	$V = \sqrt{LC}$
C	$V = L/C$	D	$V = 1/LC$
	Answer		

Ref235

Which equipment is used in static VAR compensation system?

A	Magnetic contactor	B	Thermal switch
C	Hall effect switch	D	Silicon Controlled Rectifier
	Answer		

Ref236

Poor power will cause

A	Unnecessary over current flow in line	B	Smoother voltage
C	Ripple reduction	D	Wrong phase sequence
	Answer		

Ref237

Lighting strike near power transformer is protected by

A	Arcing horn	B	Lightning arrester
C	Surge absorber	D	Arcing ring
	Answer		

Ref238

Lightning protection for power line is provided by

A	Arcing horn	B	Lightning arrester
C	Surge absorber	D	Arcing ring
	Answer		

Ref239

Power surge protection is provided by

A	Arcing horn	B	Lightning arrester
C	Surge absorber	D	Arcing ring
	Answer		

Ref244

In large power distribution system, reactive power control is provided by

A	Synchronous motor	B	Capacitor bank
C	Static VAR Compensation System	D	Induction motor
	Answer		

Ref249

To withstand the voltage surge due to lightning strike, the power system equipments must have

A	High VA value	B	High voltage rating
C	High current rating	D	Appropriate base impulse insulation level
	Answer		

Ref254

The following formula $Eg = m\delta g_b r \, Ln \, D/r$ is utilized to calculate

A	Sending end voltage	B	Breakdown voltage to neutral
C	Visual critical voltage	D	Disruptive critical voltage.
	Answer		

Ref208

Can over current & earth fault protections be combined?

A	Not sure	B	No
C	Yes	D	Not applicable
	Answer		

Ref222

Buchholz relay should be utilized for

A	Transformer protection	B	Motor protection
C	Generator protection	D	Power line protection
	Answer		

Ref224

For given CT , % composite error, secondary voltage and rated accuracy are 10P 150 F15

A	10%, 150V, 15	B	150%, 10V, 15
C	15%, 15V, 10	D	
	Answer		

Ref226

For 2000/1000/500/1 current transformer 10 Ps 250 is classified as

A	2.5 Ps 1000	B	5 Ps 500
C	2.5Ps 500	D	10 Ps 250
	Answer		

UEECD0024+UEECD0016

EE119 Electrical Risk Assessment

Lesson 1

Test & Assessment

http://www.classroomclipboard.com/503511/Home/Test/eafdcf3b16cf46908aad44c6d604b550#/InitializeTest.xaml

Type your name Put the following access code

P2PLK

Study WOC Mgt 104-E071 Lessons & then do the following exercises

2) Ref 584

Explain the features of maintenance and specialist work

3) Ref 583

Explain purchasing procedures in electrical contracting

4) Ref 582

Explain pre-job planning in electrical contracting.

5) Ref 581

Brifely explain the specification for installing the high voltage cable.

6) Ref 580

What are the factors to be considered by electrical contractor before establishing the business?

7) Ref 579

Describe the job accounting system in electrical contracting

8) Ref 578

Explain the required paper works in electrical contracting

9) Ref 577

Explain insurance in electrical contracting

10) Ref 576

Explain contract bid work

UEECD0059
EE120 Electrical Contracting & Specifications

Lesson 1 Lesson 2 Lesson 3

Test & Assessment

http://www.classroomclipboard.com/503511/Home/Test/75fe3cafbd1347eeb991b4629ad23a92#/InitializeTest.xaml

Type your name Put the following access code

5V4YBGS

UEEIC0040+UEEIC0042

EE121 Electronics Power Control Devices

Lesson 1 Lesson 2

Test & Assessment

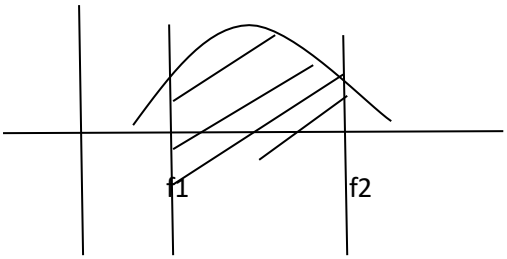
Study EE121 Lessons

Then do the following exercises.

H026 Online Test

Ref473

Gain



The given characteristics curve is

A	High pass filter	B	Low pass filter
C	Band pass filter	D	Band stop filter
	Answer		

Ref478

This equation is used for

$$f_c = \frac{1}{6.28\sqrt{R1\ R2\ C1\ C2}}$$

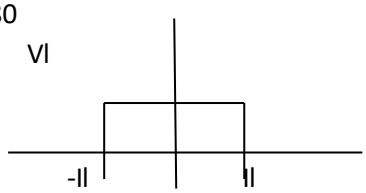
A	First order high pass Butterworth filter	B	First order low pass Butterworth filter
C	Second order low pass Butterworth filter	D	Second order high pass Butterworth filter
	Answer		

Ref479

In 4 quadrant drive system, quadrant 4 is a function of

A	Reversed braking	B	Forward driving
C	Reversed driving	D	Forward braking
	Answer		

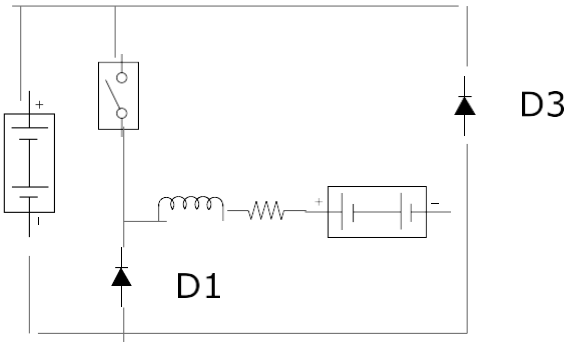
Ref480



This characteristics stands for

A	Class A chopper	B	Class B chopper
C	Class C chopper	D	Class D chopper
	Answer		

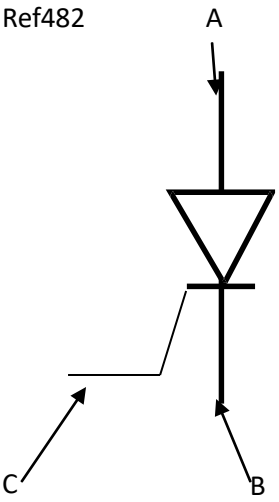
Ref481



This is an equivalent circuit for

A	Class A chopper	B	Class B chopper
C	Class C chopper	D	Class D chopper
	Answer		

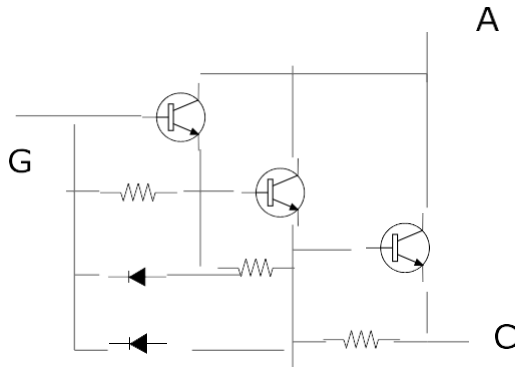
Ref482



in this diagram

A	A-Anode, B= Cathode, C- Gate	B	A-Gate, B= Cathode, C- Anode
C	A-Cathode, B= Anode, C- Gate	D	
	Answer		

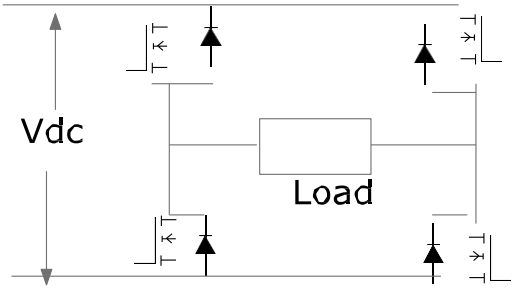
Ref483



This circuit is

A	Single stage Darlington pair transistor	B	Two stage Darlington pair transistor
C	Three stage Darlington pair transistor	D	
	Answer		

Ref484



This circuit makes

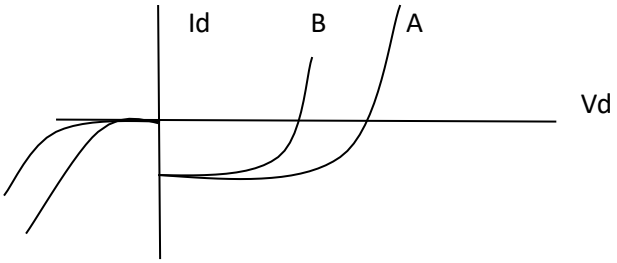
A	DC-DC converter	B	AC-DC converter
C	DC-AC Inverter	D	
	Answer		

Ref485

These converters are used to obtain a variable AC output voltage from a_____and a single phase converter with a triac .

A	Variable dc source	B	Fixed dc source
C	Variable ac source	D	Fixed ac source
	Answer		

Ref486



Curve A represents _____& curve B represents _____.

A	Hot carrier diode, PN Junction diode	B	PN Junction diode, Hot carrier diode
C			
	Answer		

Ref487

6 steps inverter can be used for

A	Single phase AC motor	B	DC motor
C	Three phase AC motor		
	Answer		

Ref488

RMS current produced by current source inverter is

A	$I_{1\,rms} = 0.5\ Id$	B	$I_{1\,rms} = 0.78\ Id$
C	$I_{1\,rms} = 0.707\ Id$	D	$I_{1\,rms} = 1.4142\ Id$
	Answer		

UEECD0039+UEECD0049

ADVANCED DIPLOMA IN ELECTRICAL ENGINEERING (LEVEL 2) LEARNING SYSTEM

All units in Diploma in Engineering program must be completed.

Then continue the study in the following units

EE201 Engineering Mathematics

EE201 Part 1 EE201 Part 2 EE201 Part 3 EE201 Part 4

Test & Assessment

UEECD0036

EE202 Electrical Circuits

EE202 Part 1 EE202 Part 2 EE202 Part 3

Test & Assessment

UEECD0062

EE203 Three Phase Power Circuits

EE203 Part 1 EE203 Part 2 EE203 Part 3

Test & Assessment

UEECD0005

EE204 Engineering Physics

EE204 Part 1 EE204 Part 2 EE204 Part 3 EE204 Part 4 EE204 Part 5

EE204 Part 6

Test & Assessment

UETDRIS027

EE205 Electrical Power System

EE205 Part 1 EE205 Part 2 EE205 Part 3 EE205 Part 4 EE205 Part 5

EE205 Part 6 EE205 Part 7 EE205 Part 8 EE205 Part 9 EE205 Part 10

EE205 Part 11 EE205 Part12 EE205 Part 13

Test & Assessment

http://www.filefactory.com/file/22ti8gb92ekf/n/G037_G038_G039_Online_Test_1_Answer_doc

http//www.G037+G038+G039 Test 1 Question.pdf

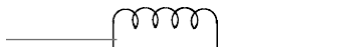
Do the tests and send the answer sheet in soft copy by e-mail to
iqytechnicalcollege@gmail.com

Password- **iqytechnicalcollege**

Study the notes in the EE205 files & do the exercise

G037+G038+G039 Online Test

Ref257



Er= 200V, X = 5 Ω P = 1000 watt Q = 500 VAR

The value of Es is

A	400V	B	200V
C	213.9V	D	120V
	Answer		

Ref262

To provide physical damage to building & equipments due to direct and indirect lightning strike.

A	Circuit protection device to be provided	B	Equalizer to be provided
C	Site earthing to be provided	D	PF must be improved.
	Answer		

Ref267

Which equipment is not included in power system equipment?

A	Main feeder	B	Consumer main
C	Sectionalising busbar	D	Recloser
	Answer		

Ref292

The current in a system is 62.5A in which 59 amp is fundamental. Calculate total harmonic distortion . If the harmonic is combination of 3^{rd} , 5^{th} and 7^{th} and third harmonic is 15.6A, 5^{th} harmonic is 10.3A, find 7^{th} harmonic.

A	60% 10A	B	34.9% 8.66A
C	70% 3A	D	15% 2A
	Answer		

Ref297

Earthing cable is to be connected to

A	Star point of star connected winding	B	Neutral conductor
C	Circuit breaker	D	
	Answer		

Ref302

Arc lengthening , arc splitting and arc cooling functions are provided in

A	Relay	B	Circuit breaker
C	Busbar	D	Recloser
	Answer		

Ref307

Switching transient causes

A	Disruption of normal operation	B	Degrading of components
C	Damage to equipments	D	All above
	Answer		

Ref312

The lightning strike can directly at

A	SPZOA	B	SPZ1
C	SPZ2	D	SPZ3
	Answer		

Ref317

The short duration reduction in the rms voltage between 0.1 and 0.9 pu caused by energizing the heavy load, single line to ground fault and load transfer from one source to remote source is

A	Sag	B	Swell
C	Surge	D	
	Answer		

Ref322

Sinusoidal wave becomes other forms of wave is

A	Voltage imbalance	B	Transient
C	Waveform distortion	D	Voltage reduction
	Answer		

Ref327

If the voltage is increased , the solution is to provide

A	Use properly tuned filter	B	Use surge detector
C	Use equalizer busbar	D	Use equipotential bonding
	Answer		

Ref332

The circuit consists of 100 V 60HZ and 5^{th} harmonic 51V 300HZ in series with 24 ohm resistor & 18.6 mH inductor. Calculate total dissipated power.

A	209 W	B	104.5W
C	418.6W	D	836W
	Answer		

Ref337

Two units of generator maintain 66KV and 60KV line at the end of an interconnector of inductive reactance per phase of 40 ohm with negligible resistance and shunt capacitance . A load of 10 MW is to be transferred from 66KV unit to the other end. Calculate the PF of the current transmitted.

A	0.1	B	0.2
C	0.3	D	0.4
	Answer		

UEEEL0041+UEEEL0043
EE206 AC Machines

EE206 Part 1 EE206 Part 2 EE206 Part 3

Test & Assessment

http://www.filefactory.com/file/5stgiskbar09/n/G043_G045_Online_Test_1_Answer_doc

http://www.filefactory.com/file/7h9o99zngfq1/n/G043_G045_Online_Test_1_Question_pdf

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

Study the fEE206 file notes and do the exercises

G043+G045 Online Test

Ref374

Which is correct formula

A	T= F x r P = 9.55 / NT	B	T= F x r P = NT/ 9.55
C	T= F + r P = NT/ 9.55	D	T= F x r P = 9.55 / N+T
	Answer		

Ref376

The heat taken away by blower is

A	P = 640V (t2 – t1)	B	P = 320V (t2 – t1)
C	P = 1280V (t2 – t1)	D	P = 160V (t2 – t1)
	Answer		

Ref378

The 6 poles wound rotor induction motor is excited by three phase 60 HZ source. Calculate the rotor frequency for (a) Standstill (b) 500 rpm same direction (c) 500 rpm opposite direction.

A	50HZ, 70 HZ, 170HZ	B	60HZ, 35 HZ, 85 HZ
C	25 HZ, 35 HZ, 40 HZ	D	15 HZ, 35 HZ, 125 HZ
	Answer		

Ref380

A three phase induction motor having synchronous speed of 1200 rpm draws 80kw from three phase feeder. Copper loss & iron loss in stator amount to 5kw. If the motor runs at 11452 rpm, calculate the efficiency of motor.

A	45%	B	87.5%
C	75%	D	35%
	Answer		

Ref382

Locked rotor test is performed to determine.

A	Core parameter	B	Winding parameter
C	Load parameter	D	35%
	Answer		

Ref384

A three phase 208 V induction motor having synchronous speed 1200 rpm runs at 1140 rpm. When connected to 215V , driving at constant load, calculate the speed if voltage is 240V

A	1152 rpm	B	800 rpm
C	700 rpm	D	500 rpm
	Answer		

Ref386

The system that reverses the supply connection to the motor terminals when the stop switch is pressed is

A	Dynamic braking	B	Plugging
C	Forward reverse	D	Time delay starter
	Answer		

Ref388

A 500HP 720 rpm synchronous motor connected to 3980V three phase line generates an excitation voltage Ef=1790V (L-N) when the dc excitation current is 25 amp. The synchronous reactance is 22Ω, torque angle between Ef & V is 30°.Calculate shaft torque.

A	2000 N-m	B	3715 N-m
C	1500 N-m	D	750 N-m
	Answer		

Ref390

In a synchronous motor, when power factor is unity, the line current is

A	Maximum	B	Minimum
C	Unchanged	D	
	Answer		

Ref392

Under excitation makes the power factor of a synchronous machine to become

A	Unity	B	Leading
C	Lagging	D	
	Answer		

UEEEL0042
EE207 DC Machines

EE207 Part 1 EE207 Part 2 EE207 Part 3

Test & Assessment

http://www.filefactory.com/file/2ejf6p7o0j0f/n/G044_Online_Test_1_Answer_doc

http://www.filefactory.com/file/5iyno92bji67/n/G044_Online_Test_1_Question_pdf

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

Study the EE207 File notes and do the exercises

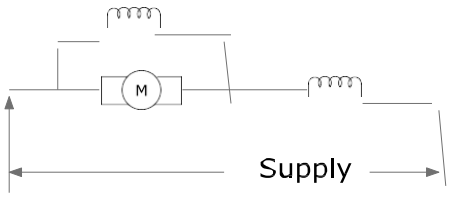
G044 Online Test

Ref394

Power provided by dc generator is

A	P = B I V	B	P = B L V I
C	P = B I L	D	P = B L V
	Answer		

Ref395



This connection is

A	Series	B	Shunt
C	Short shunt compound	D	Long shunt compound
	Answer		

Ref396

Calculate the coil span for

(a) 36 slots, 4 poles simplex lap (b) 36 slots, 2 poles, Duplex wave

A	1 to 10, 1 to 39 & 1 to 35	B	1 to 9, 1 to 38 & 1 to 34
C	1 to 8, 1 to 37 & 1 to 33	D	1 to 7, 1 to 36 & 1 to 32
	Answer		

Ref397

The brushes on a 0.4 m diameter commutator are rocked 0.03m circumferentially. The machine has 6 poles, simplex lap wound, 378 conductors 800 Armature current. Calculate cross magnetizing and de-magnetizing ampere turn / pole.

A	600 AT/pole, 1500 AT /pole	B	1250 AT/pole, 3000 AT /pole
C	300 AT/pole, 750 AT /pole	D	150 AT/pole, 375 AT /pole
	Answer		

Ref398

Motor particulars 3.75 KW, 230V, 18A, 1750 rpm Ra=0.3Ω , brush drop 2V on load.
Calculate final torque if field flux is reduced to 96%

A	50.56 N-m	B	100 N-m
C	150 N-m	D	40 N-m
	Answer		

Ref399

7.5KW 230V 1750 rpm shunt motor, armature resistance 0.35Ω, shunt field resistance 62.2Ω
If no load current is 7.7 amp, full load efficiency 86% , brush drop 3V at full load & 1 V at no load.
Calculate % regulation.

A	5.7%	B	10%
C	12%	D	15%
	Answer		

Ref400

The winding resistance of a 500V, 60KW dc shunt motor are Ra=0.2Ω Rf=200Ω, mechanical losses are 1.4KW.Determine the efficiency of the machine.
(a) When the line current is 102.5A (b) At full load.

A	70%, 75%	B	90.93%, 90.9%
C	95%, 93%	D	78%, 87%
	Answer		

Ref401

The resistance of an armature winding at 25°C was found to be 0.26Ω. After a heat run , it becomes 0.296Ω. Calculate the temperature rise of the winding.

A	Δt = 70 °C	B	Δt = 36 °C
C	Δt = 15 °C	D	Δt = 12 °C
	Answer		

Ref402

A 75KW 500V generator has a voltage regulation 4% , calculate

(a) The open circuit voltage

(b) Assuming the voltage varies uniformly between no load and full load current. Calculate the KW output of a terminal voltage 510V.

A	500V, 20 KW	B	250V, 10 KW
C	520V, 38.25 KW	D	500V, 10 KW
	Answer		

Ref403

A 4 poles wound armature operating in a field of flux 0.01wb in wound with360 armature conductors. Determine the expression of torque as a function of speed. If Vt=250V and Ra=0.1Ω.

A	1000 – 1.3 N	B	2000- 2N
C	3000 – 4N	D	2860 – 1.38N
	Answer		

Ref404

The resistance of the armature of a 240V dc shunt motor is 0.5Ω . It is required that the current at starting be limited to 200% of full load current & full load current is 15A.

Determine

(a) Total resistance of armature current at starting

(b) The number of studs on the starter

(c) r3.

A	8Ω, 4, 1Ω	B	10Ω, 3, 0.5Ω
C	8Ω, 2, 1Ω	D	4Ω, 2, 1Ω
	Answer		

Ref405

Which is not a dc motor braking method?

A	Plugging	B	Dynamic braking
C	Mechanical braking	D	Ward Leonard
	Answer		

Ref 406

Which equipment does not produce ripple?

A	PWM Switching	B	Rectifier circuit
C	DC Generator	D	PV Inverter
	Answer		

UEEIC0040+UEEIC0042

EE208 Operational Amplifiers

EE208 Part 1 EE208 Part 2 EE208 Part 3

Study the EE207 File notes & do the exercises

H025+H026+I006 Online Test

Ref451

Differential amplifier can _____noise signals that are common to both inputs.

A	accept	B	reject
C	rectify	D	reduce
	Answer		

Ref453

A transducer consists of _____& it's associated circuitry to produce an output signal

A	Rectifier	B	Sensor
C	Regulator	D	Divider
	Answer		

Ref455

The strain gauge is used for

A	Speed measurement	B	Temperature measurement
C	Force measurement	D	Position measurement
	Answer		

Ref457

The water supply to water tank is an example of

A	Open loop control	B	Closed loop control
		D	
	Answer		

Ref459

Reset function is

A	Proportional control	B	Integral control
C	Derivative control	D	PID control
	Answer		

Ref461

In one shot or monostable circuit, delay time equation is

A	T = 1.1 Ra C	B	T = 2 Ra C
C	T = 3 Ra C	D	
	Answer		

Ref463

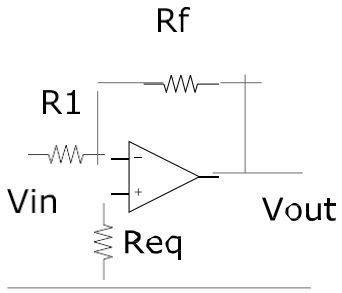
The following equation is used for

Vo = - (Rf/ R1) V1 +(Rf/R2) V2 + (Rf/R3) V3

A	Summing amplifier	B	Differential amplifier
C	Cascade amplifier	D	
	Answer		

Ref465

In the following circuit , Req is



A	Bias voltage offset resistor	B	Bias current offset resistor
C	Feedback resistor	D	
	Answer		

Ref467

Noise gain is

A	(Rf/R1) + 1	B	(R1/Rf)+1
C	R1/Rf	D	Rf/R1
	Answer		

Ref469

The slew rate of 741 Op is 0.5V/ µs. Find maximum frequency for 20V p-p sine wave

A	3KHZ	B	10KHZ
C	7.96 KHZ	D	20 KHZ
	Answer		

Ref471

Phase shift oscillator frequency is

A	f_o = 1/ 15.4 RC	B	f_o = 1/ 30 RC
C	f_o = 1/ 60 RC	D	f_o = 1/ 100 RC
	Answer		

Ref472

The Wien bridge amplifier frequency is

A	f_o = 1/ 3.14 RC	B	f_o = 1/ 6.28RC
C	f_o = 6.28 RC	D	f_o = 1/ RC
	Answer		

UEEIC0040+UEEIC0042

EE209 Analogue Electronics

EE209 Part 1 EE209 Part 2 EE209 Part 3 EE209 Part 4 EE209 Part 5

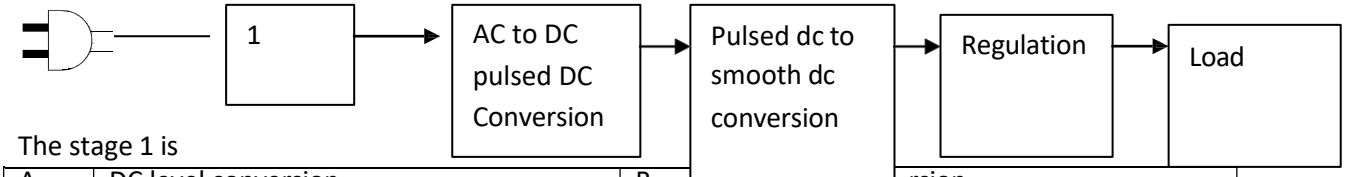
EE209 Part 6 EE209 Part 7

Test & Assessment

Study the EE209 file notes & do the exercises

H011 Online Test

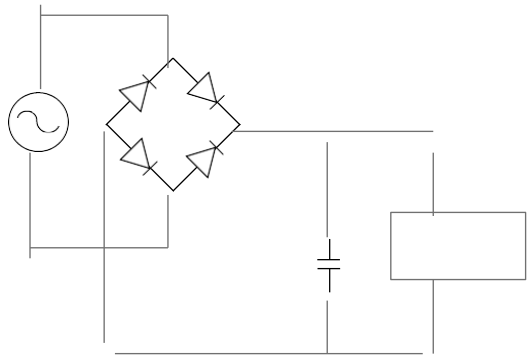
Ref435



The stage 1 is

A	DC level conversion	B	rsion
C	Input sensor	D	Providing protection
	Answer		

Ref436



The name of given circuit is

A	Single phase full wave rectifier	B	Single phase half wave rectifier
C	Three phase full wave rectifier	D	Three phase half wave rectifier
	Answer		

Ref437

The dc output voltage produced by centre tapped transformer rectifier is

A	Vdc= 0.5 Vmax	B	Vdc= 0.73 Vmax
C	Vdc= 0.636 Vmax	D	Vdc= 0.707 Vmax
	Answer		

Ref438

For bridge rectifier , ripple frequency is equal to

A	Supply frequency	B	Three times supply frequency
C	Half of supply frequency	D	Two times supply frequency
	Answer		

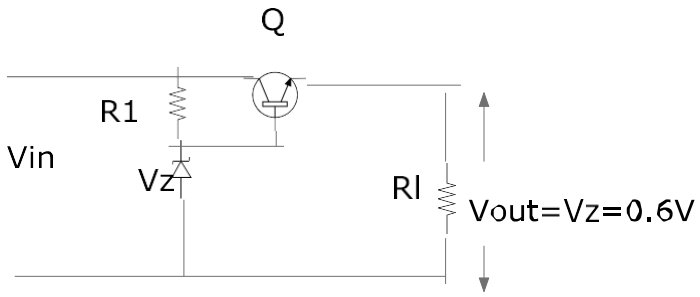
Ref439

Calculate the load resistance & capacitance size of a full wave rectifier that supplies 40V dc with 3% ripple voltage at 250mA to a resistance load. The rectifier circuit is supplied with 60HZ AC. Ripple frequency 50HZ.

A	160Ω, 31.25µF	B	320Ω, 62.5µF
C	100Ω, 10µF	D	60Ω, 15µF
	Answer		

Ref440

The following circuit is



A	Shunt transistor regulator	B	Regulator with feedback
C	Operational amplifier	D	Series transistor regulator
	Answer		

Ref441

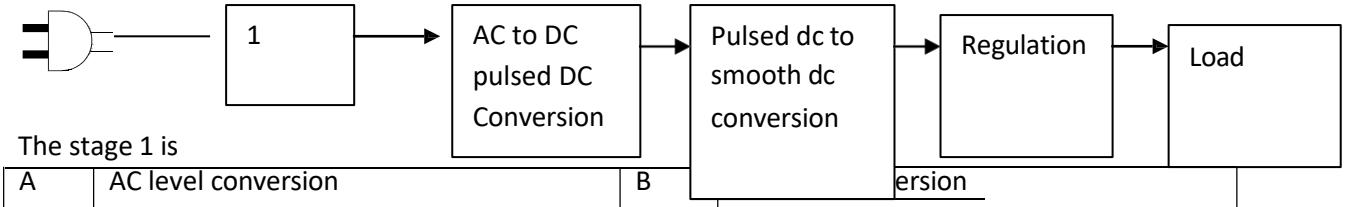
The regulator with feedback is constructed with the following values. R2= 1 KΩ, R3= 2 KΩ, Rsc=0.6Ω

Calculate power output Pd

A	30W	B	60W
C	90W	D	15W
	Answer		

H011 Online Test

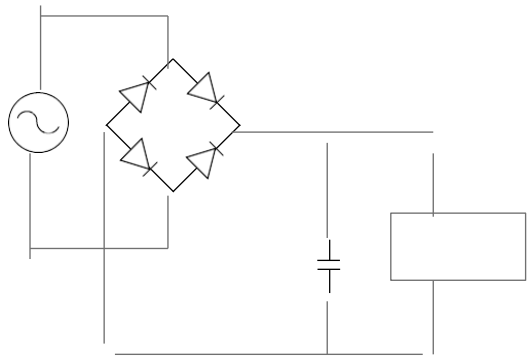
Ref435



The stage 1 is

A	AC level conversion	B	ersion
C	Input sensor	D	Providing protection
	Answer		

Ref436



The name of given circuit is

A	Single phase half wave rectifier	B	Single phase full wave rectifier
C	Three phase full wave rectifier	D	Three phase half wave rectifier
	Answer		

Ref437

The dc output voltage produced by centre tapped transformer rectifier is

A	Vdc= 0.5 Vmax	B	Vdc= 0.73 Vmax
C	Vdc= 0.707 Vmax	D	Vdc= 0.636 Vmax
	Answer		

Ref438

For bridge rectifier , ripple frequency is equal to

A	Two times supply frequency	B	Three times supply frequency
C	Half of supply frequency	D	Supply frequency
	Answer		

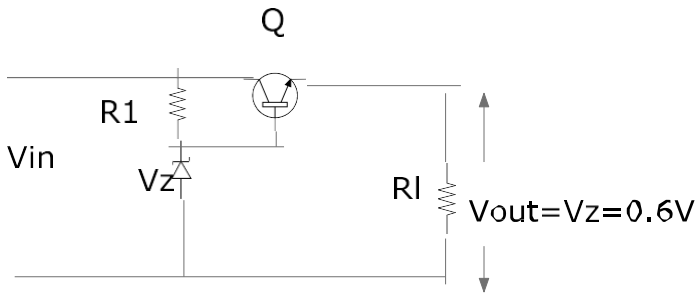
Ref439

Calculate the load resistance & capacitance size of a full wave rectifier that supplies 40V dc with 3% ripple voltage at 250mA to a resistance load. The rectifier circuit is supplied with 60HZ AC. Ripple frequency 50HZ.

A	60Ω, 15µF	B	320Ω, 62.5µF
C	100Ω, 10µF	D	160Ω, 31.25µF
	Answer		

Ref440

The following circuit is



A	Shunt transistor regulator	B	Regulator with feedback
C	Series transistor regulator	D	Operational amplifier
	Answer		

Ref441

The regulator with feedback is constructed with the following values. R2= 1 KΩ, R3= 2 KΩ, Rsc=0.6Ω Calculate power output Pd

A	90W	B	60W
C	30W	D	15W
	Answer		

EE210 Electrical Engineering Business Studies

Business Units Online Lesson Study Link

Test & Assessment

Business units assignments

DIPLOMA IN ELECTRICAL ENGINEERING (LEVEL 3) LEARNING SYSTEM

EE301 Advanced Electrical Drafting

stage 1 Part 3.zip

UEECD0064

1WiringInstallationDrawing

7MachineDriveSystems

8PowerElectronicsDevices

Stage 4 Part 11.zip

http://www.filefactory.com/file/c0cc540/n/Stage_4_Part_11.zip

Password--- joe2013

AutoCAD_2D_3D_Lessons

Symbol A

Symbol B

Symbol C

Symbol D

Symbol E

Symbol F

Symbol G

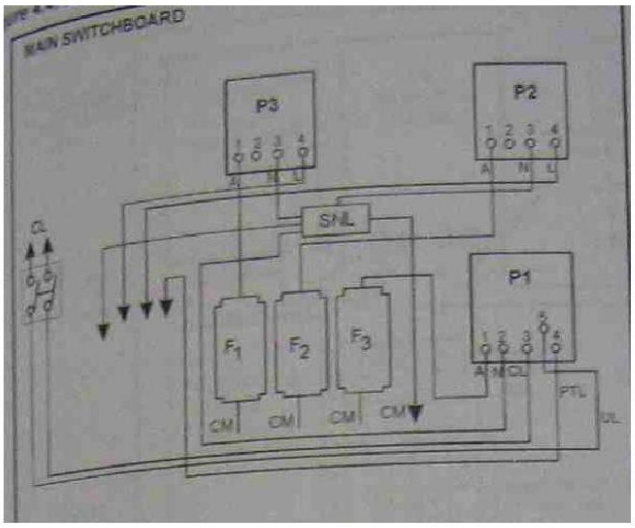
Assessment-In class assessment

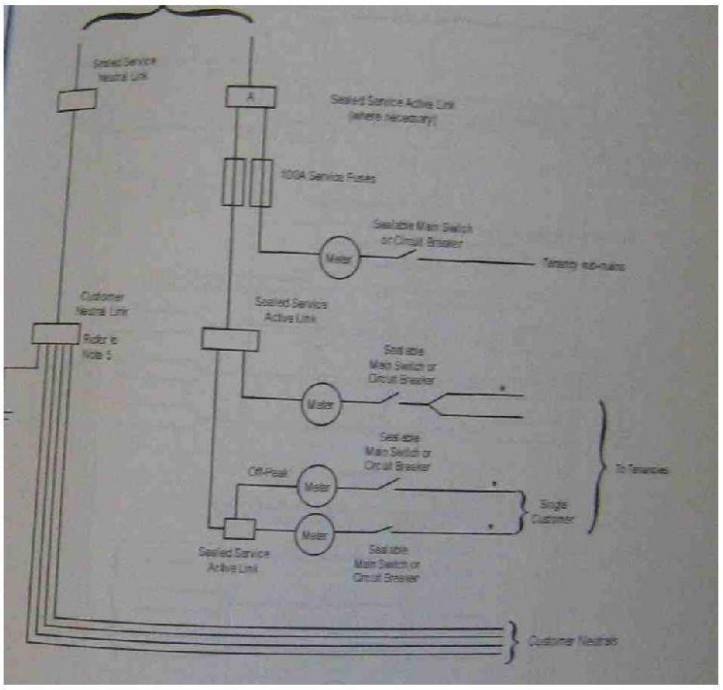
E071_MEM09004_Tutorial

E071_MEM09004_Tutorial_Mod.zip

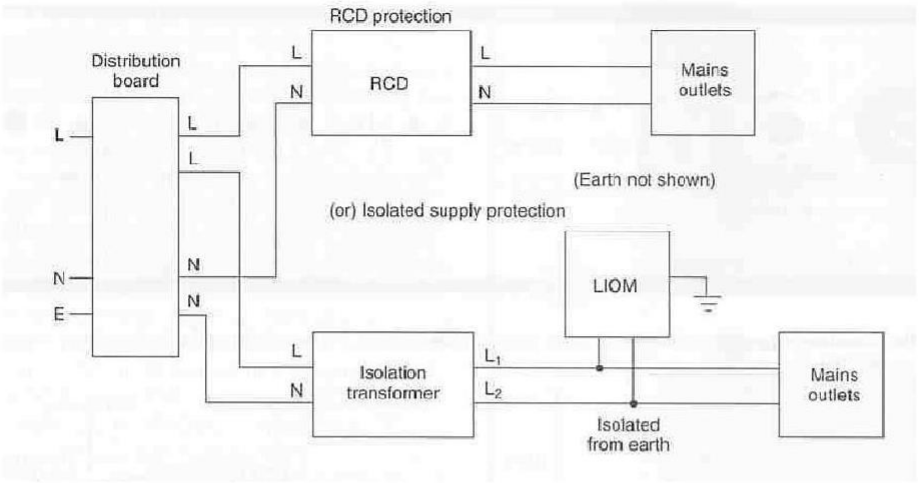
Submit the drawing tutorial assignment

(Do not copy the given diagram, it is just a reference, you need to draw your own sketch by computer)





(3) Sketch the given circuit



(4)

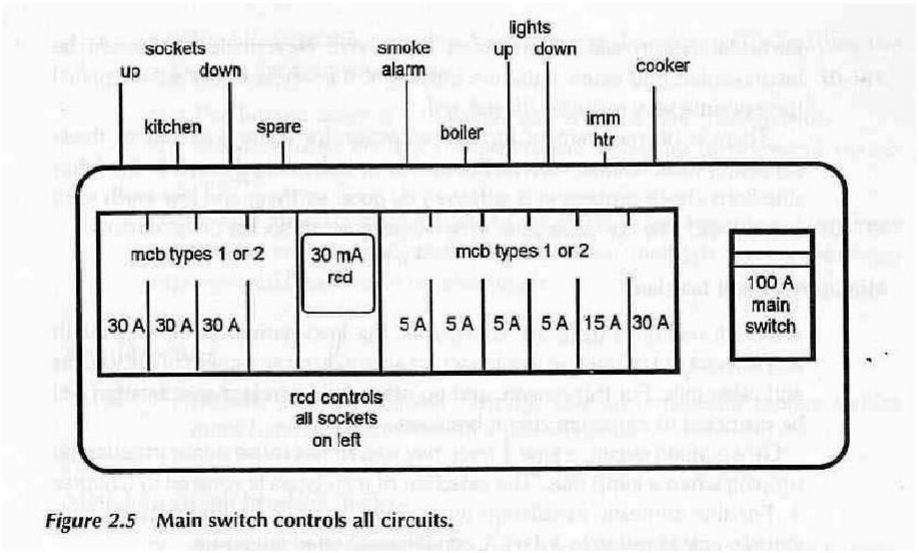
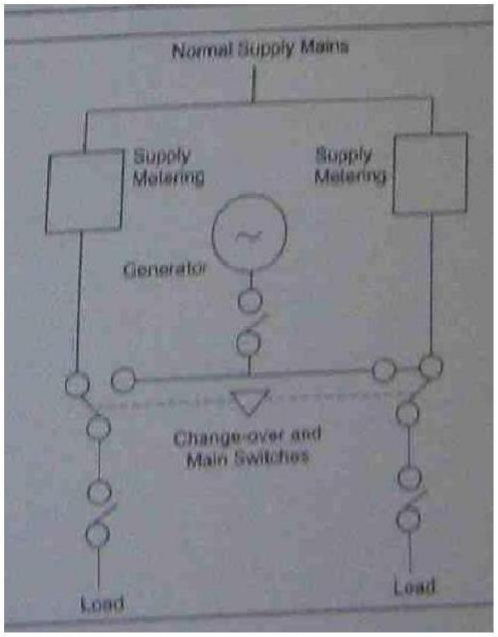


Figure 2.5 **Main switch controls all circuits.**

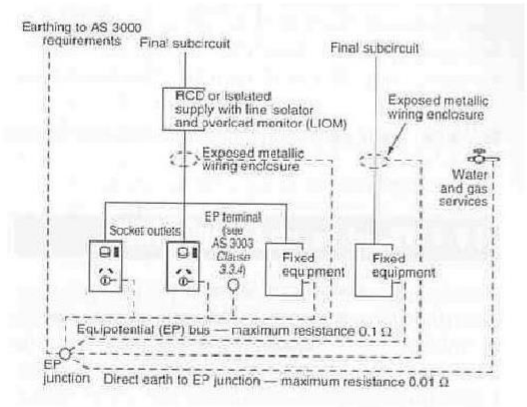
(5)



Reference: Specification (1)

(1)Write the important aspects of the specifications for electro medical equipments

(2)Draw the following circuits by computer



(2)Reference: Service Rule 3

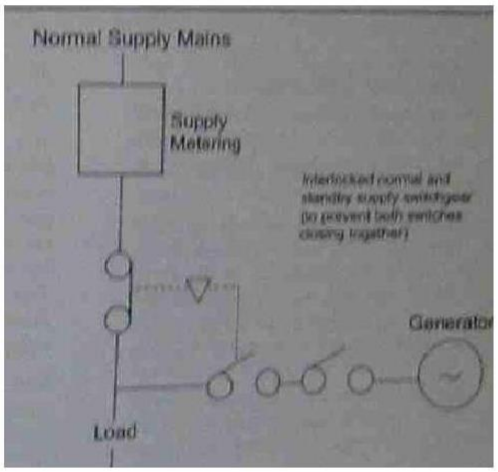
Job (3)

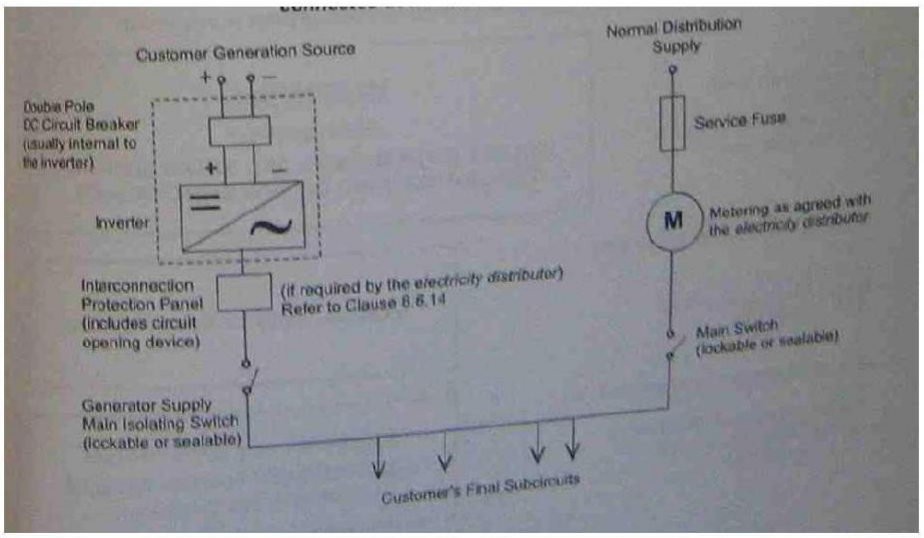
You need to install a stand by generating plan for a small factory.

Prepare the specifications and design diagram for the following aspects

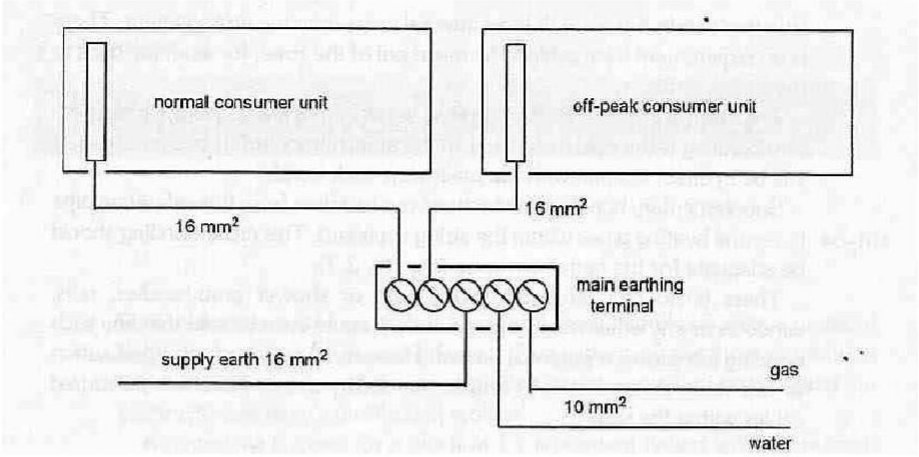
(1)Condition of use, (2)spacing for conductors, (3)change over equipments, 94)Operating procedure, (5)protection

Reference Diagram (Do not copy the given diagram, it is just a reference, you need to draw your own sketch by computer)

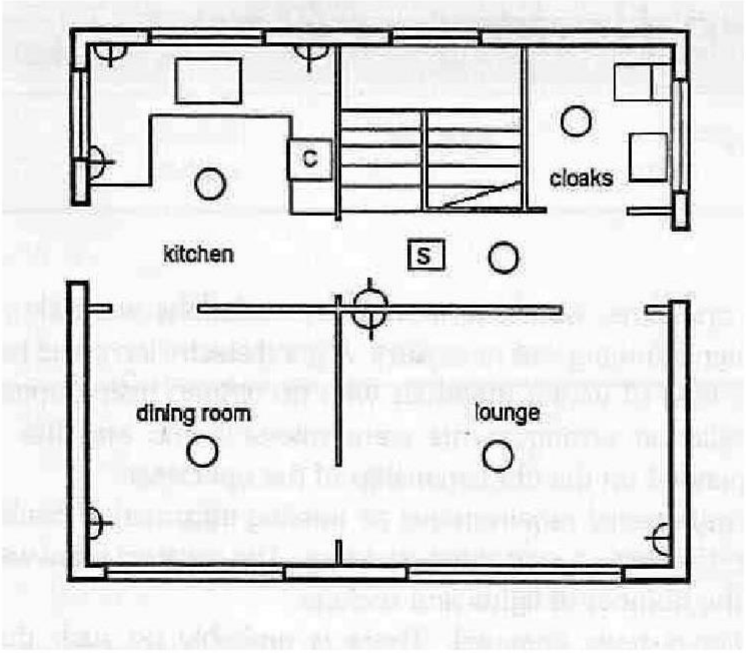




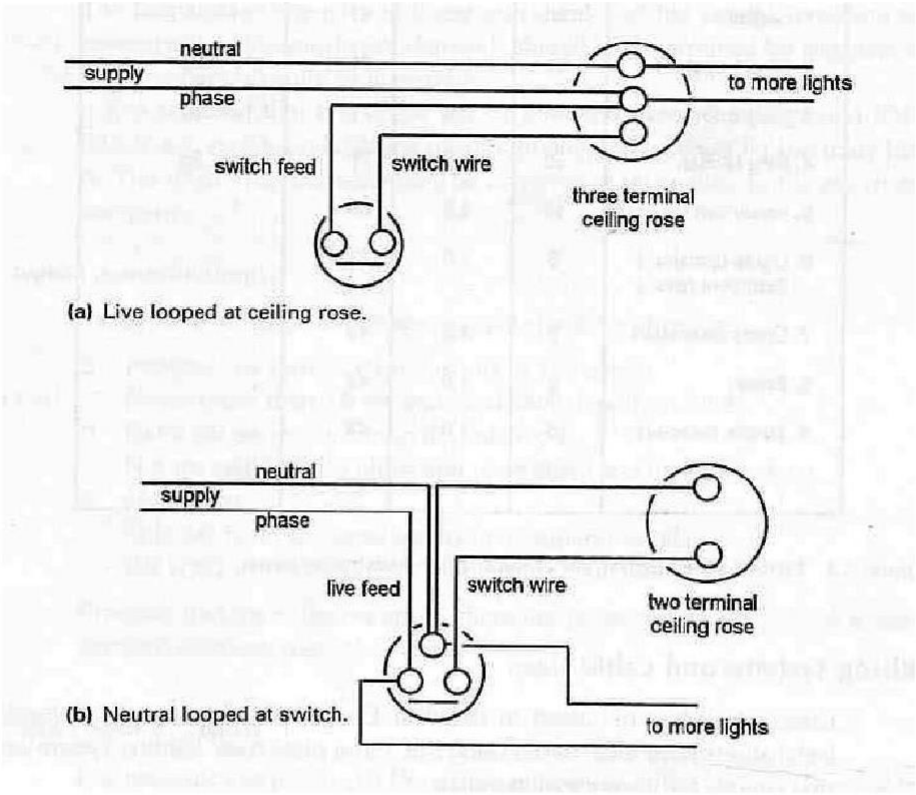
7


normal consumer unit
off-peak consumer unit
16 mm²
16 mm²
main earthing terminal
supply earth 16 mm²
gas
10 mm²
water

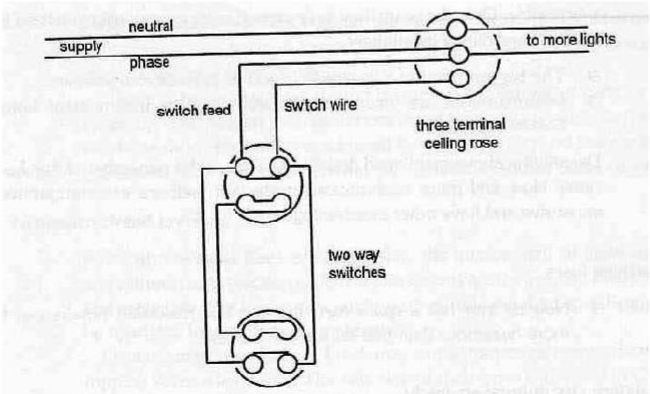
(6)


C
cloaks
kitchen
S
dining room
lounge

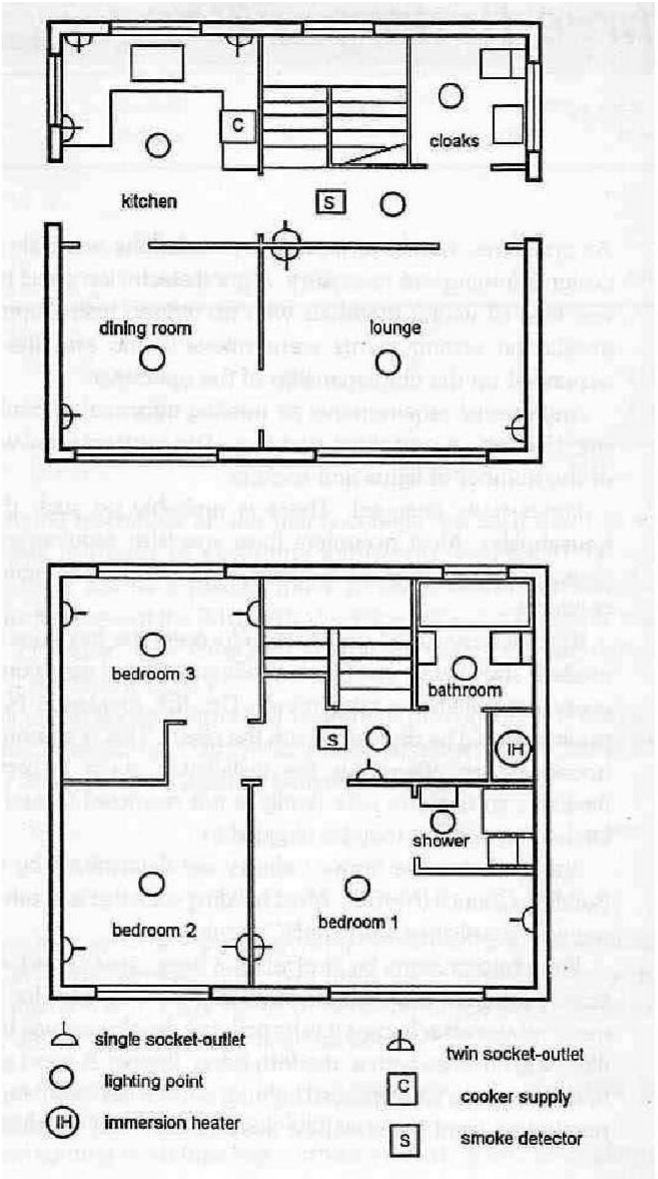
(7)


neutral
supply
phase
to more lights
switch feed
switch wire
three terminal
ceiling rose
(a) Live looped at ceiling rose.
neutral
supply
phase
live feed
switch wire
two terminal
ceiling rose
(b) Neutral looped at switch.
to more lights

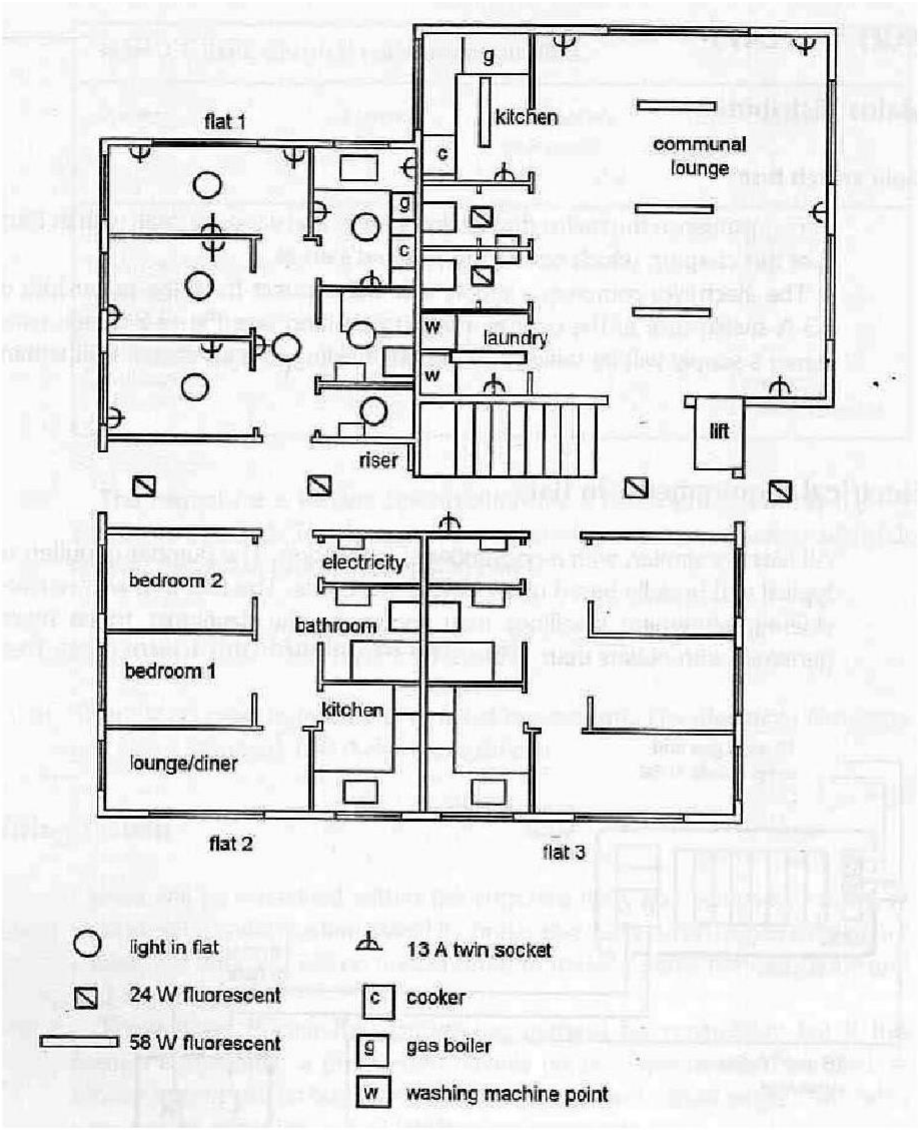
(8)


neutral
supply
phase
to more lights
switch feed
swtch wire
three terminal
ceiling rose
two way
switches

(9)


C
cloaks
kitchen
S
dining room
lounge
bedroom 3
bathroom
S
IH
shower
bedroom 2
bedroom 1
single socket-outlet
lighting point
IH immersion heater
twin socket-outlet
C cooker supply
S smoke detector

(10)


flat 1
g
kitchen
communal lounge
c
g
c
w
laundry
w
lift
riser
bedroom 2
electricity
bathroom
bedroom 1
kitchen
lounge/diner
flat 2
flat 3
light in flat
24 W fluorescent
58 W fluorescent
13 A twin socket
c cooker
g gas boiler
w washing machine point

(11)

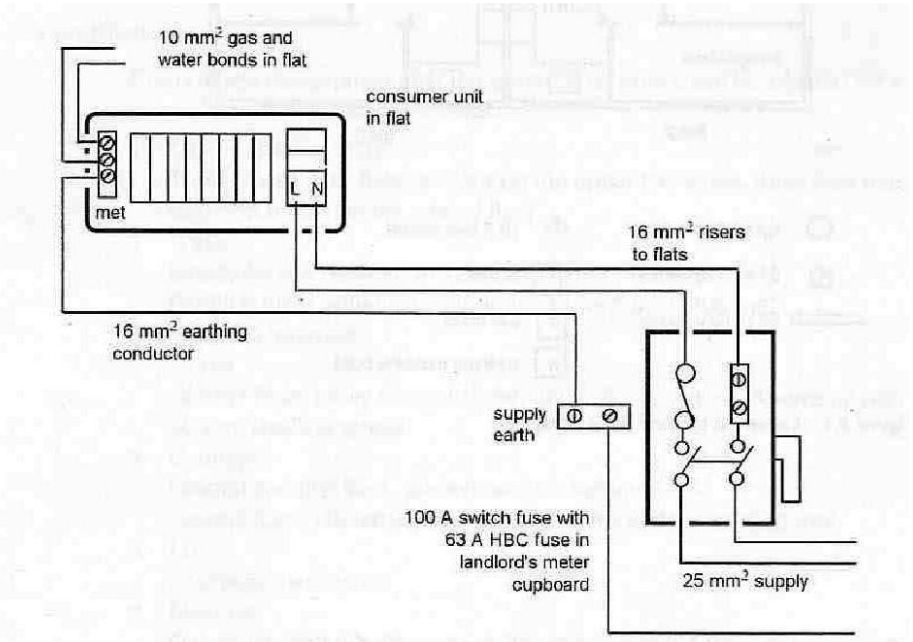


Figure 3.2 **Distribution to flats.**

(13)

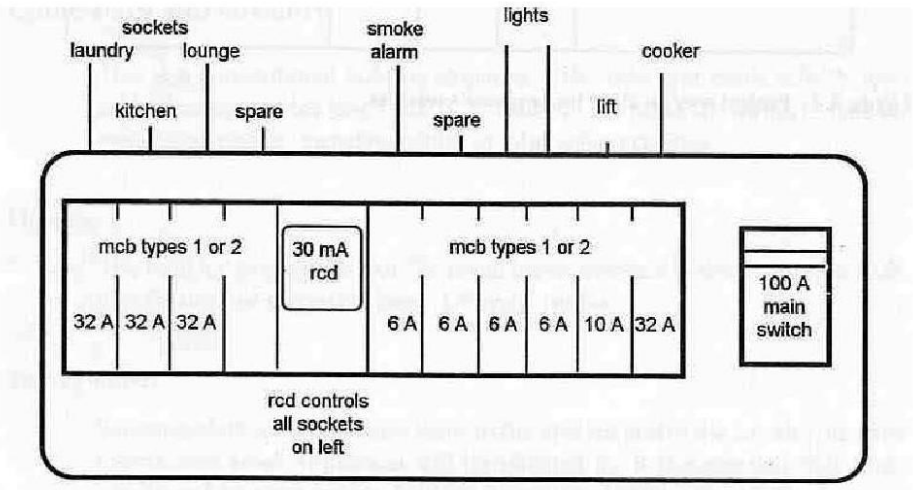


Figure 3.5 **Landlord's distribution board.**

UEECD0049

EE302 Advanced Engineering Mathematics

E026 Online test

Ref 27

$\frac{dy}{dx} = 3x^2$ Find Y

A	X^3+C	B	$3X^4+C$
C	$1/X^3+C$	D	Ln X +C
	Answer		

Ref 28

Solve $y'' = 3x - 2$, $y(0)= 2$ $y'(1) = -3$, the generalized answer is

A	$X^4 - X^3 - X^2 - 5/2\,X + 2$	B	$X^3 - X^2 - X^2 - 5/2\,X + 2$
C	$X^2 - 3X + 2$	D	$X^3 - 3X + 2$
	Answer		

Ref 29

Find general equation of

$(4X+XY^2)dX+(Y+X^2y)dY=0$

A	$\text{Ln}(1+X^2) + 1/2\ \text{Ln}(4+Y^2)$	B	$\text{Ln}(1+X^2) + 1/3\ \text{Ln}(4+Y^2)$
C	$1/(1+X^2) + 1/(1+Y^2)$	D	$(1+X^2) + (4+Y^2)$
	Answer		

Ref 30

Evaluate the following

$\Gamma(6)$

$2\ \Gamma(3)$

A	10	B	30
C	15	D	25
	Answer		

Ref 31

Evaluate the following

$\Gamma(5/2)$

$\Gamma(1/2)$

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

Ref 32

Find the volume of region R bounded by parabolic cylinder $Z = 4 - X^2$ & planes $X = 0$, $Y=0$, $Y=6$,$Z=0$

A	16	B	32
C	42	D	64
	Answer		

Ref33

Laplace transform of $5 \sin 2t - 3 \cos 2t$ is

A	$\frac{10 - 3S}{S^2+4}$	B	$\frac{3S - 10}{S^2+4}$
C	$\frac{10}{S^2+4}$	D	$\frac{3S}{S^2+4}$
	Answer		

Ref34

. Find

$$Ł^{-1}\left\{\frac{4S-3}{S^2+4}\right\}$$

A	3/2 sin 2t – 4 cos 2t	B	4 cos 2t – 3/2 sin 2t
C	4 sin2t – 3/ 2 cos 2t	D	Sin3t – cos 4t
	Answer		

Ref 35

Find

$$Ł^{-1}\left\{\frac{4S-3}{S^{3/2}}\right\}$$

A	$\frac{8\,t^{-1/2}-5t}{\sqrt{\Pi}}$	B	$\frac{5\,t^{2}}{\sqrt{\Pi}}$
C	$\frac{8\,t^{-1/2}-5t^{-1/2}}{\sqrt{\Pi}}$	D	$\frac{8\,t^{2}-5}{\sqrt{\Pi}}$
	Answer		

Ref 36

. Find

$$Ł^{-1}\left\{\frac{1}{S^2+2S}\right\}$$

A	½ t - ½ e^{-2t}	B	t - e^{-t}
C	½ t - ½ e^{t}	D	2 t - e^{2t}
	Answer		

Ref37

The solution of the given differential equation $y' - 3y'+2y = 2e^{-t}$ where y(0) = 2 , y' (00 = -1 by Laplace transform is

A	$7e^{2t}+4e^{t}+e^{-t}$	B	$3e^{2t}+e^{t}+3e^{-t}$
C	$-7/3\ e^{-2t}+4e^{t}+1/3\ e^{-t}$	D	$-7\ e^{-2t}+e^{t}+3\ e^{-3t}$
	Answer		

Ref38

A resistor R = 10 Ω Inductor 2H and a voltage E volt are connected in series with switch S .

At t = 0, the switch is closed and I = 0.

Find I for t >0 if E = 40V

A	$4t-4\ e^{-5t}$	B	$4-e^{-t}$
C	4t	D	4
	Answer		

Ref39

Inverse matrix of the matrix for given equations

$3X_1 - 2X_2 + 2X_3 = 10$

$X_1 + 2X_2 - 2X_3 = -1$

$4X_1 + X_2 + 2X_3 = 3$ is

A	$\begin{pmatrix} \frac{7}{35} & \frac{6}{15} & \frac{2}{35} \\ \frac{-14}{35} & \frac{-2}{35} & \frac{11}{35} \\ \frac{-7}{35} & \frac{-11}{35} & \frac{8}{35} \end{pmatrix}$	B	$\begin{pmatrix} 7 & 6 & 2 \\ 14 & -2 & 11 \\ -7 & -11 & 8 \end{pmatrix}$
C	$\begin{pmatrix} \frac{1}{35} & \frac{6}{35} & \frac{1}{35} \\ -14 & -2 & 11 \\ -7 & -11 & -8 \end{pmatrix}$	D	$\begin{pmatrix} 1 & 6 & 1 \\ 2 & 3 & 4 \\ 7 & 11 & 8 \end{pmatrix}$
	Answer		

E026 Online test

Ref 27

$\frac{dy}{dx} = 3x^2$ Find Y

A	$3X^4+C$	B	X^3+C
C	$1/X^3+C$	D	Ln X +C
	Answer		

Ref 28

Solve $y'' = 3x - 2$, $y(0)= 2$ $y'(1) = -3$, the generalized answer is

A	$X^4 - X^3 - X^2 - 5/2\,X + 2$	B	$X^3 - 3X + 2$
C	$X^2 - 3X + 2$	D	$X^3 - X^2 - X^2 - 5/2\,X + 2$
	Answer		

Ref 29

Find general equation of

$(4X+XY^2)dX+(Y+X^2y)dY=0$

A	$(1+X^2)+(4+Y^2)$	B	$Ln(1+X^2)+1/3\ Ln(4+Y^2)$
C	$1/(1+X^2)+1/(1+Y^2)$	D	$Ln(1+X^2)+1/2\ Ln(4+Y^2)$
	Answer		

Ref 30

Evaluate the following

$\Gamma(6)$

$2\ \Gamma(3)$

A	10	B	15
C	30	D	25
	Answer		

Ref 31

Evaluate the following

Γ(5/2)

Γ(1/2)

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

Ref 32

Find the volume of region R bounded by parabolic cylinder $Z = 4 - X^2$ & planes X = 0, Y=0, Y=6 ,Z=0

A	16	B	42
C	32	D	64
	Answer		

Ref33

Laplace transform of 5 sin 2t – 3 cos 2t is

A	$\frac{3S - 10}{S^2+4}$	B	$\frac{10 - 3S}{S^2+4}$
C	$\frac{10}{S^2+4}$	D	$\frac{3S}{S^2+4}$
	Answer		

Ref34

. Find

$$Ł^{-1}\left\{\frac{4S - 3}{S^2 + 4}\right\}$$

A	3/2 sin 2t – 4 cos 2t	B	4 cos 2t – 3/2 sin 2t
C	4 sin2t – 3/ 2 cos 2t	D	Sin3t – cos 4t
	Answer		

Ref 35

Find

$$Ł^{-1}\left\{\frac{4S - 3}{S^{3/2}}\right\}$$

A	$\frac{8\,t^{-1/2} - 5t}{\sqrt{\Pi}}$	B	$\frac{5\,t^{2}}{\sqrt{\Pi}}$
C	$\frac{8\,t^{2} - 5}{\sqrt{\Pi}}$	D	$\frac{8\,t^{-1/2} - 5t^{-1/2}}{\sqrt{\Pi}}$
	Answer		

Ref 36

. Find

$$Ł^{-1}\left\{\frac{1}{S^{2}+2S}\right\}$$

A	½ t - ½ e^{-2t}	B	½ t - ½ e^{t}
C	t - e^{-t}	D	2 t - e^{2t}
	Answer		

Ref37

The solution of the given differential equation $y' - 3y' + 2y = 2e^{-t}$ where $y(0) = 2$, $y'(00 = -1$ by Laplace transform is

A	$-7/3\ e^{-2t} + 4e^{t} + 1/3\ e^{-t}$	B	$3e^{2t} + e^{t} + 3e^{-t}$
C	$7e^{2t} + 4e^{t} + e^{-t}$	D	$-7e^{-2t} + e^{t} + 3\ e^{-3t}$
	Answer		

Ref38

A resistor $R = 10\ \Omega$ Inductor 2H and a voltage E volt are connected in series with switch S .

At $t = 0$, the switch is closed and $I = 0$.

Find I for $t > 0$ if $E = 40V$

A	$4 - e^{-t}$	B	$4t - 4e^{-5t}$
C	$4t$	D	4
	Answer		

Ref39

Inverse matrix of the matrix for given equations

$3X_1 - 2X_2 + 2X_3 = 10 \quad X_1 + 2X_2 - 2X_3 = -1 \quad 4X_1 + X_2 + 2X_3 = 3$ is

A	$\begin{pmatrix} \frac{1}{35} & \frac{6}{35} & \frac{1}{35} \\ -14 & -2 & 11 \\ -7 & -11 & -8 \end{pmatrix}$	B	$\begin{pmatrix} 7 & 6 & 2 \\ 14 & -2 & 11 \\ -7 & -11 & 8 \end{pmatrix}$
C	$\begin{pmatrix} \frac{7}{35} & \frac{6}{15} & \frac{2}{35} \\ \frac{-14}{35} & \frac{-2}{35} & \frac{11}{35} \\ \frac{-7}{35} & \frac{-11}{35} & \frac{8}{35} \end{pmatrix}$	D	$\begin{pmatrix} 1 & 6 & 1 \\ 2 & 3 & 4 \\ 7 & 11 & 8 \end{pmatrix}$
	Answer		

UETDRIS027

EE303 Transmission Lines

G042 Online Test

Ref352

Circuit breaker is

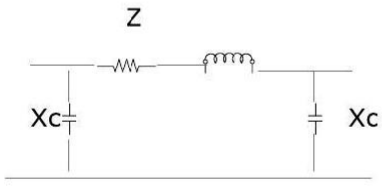
A	To cut off the circuit when fault occurs	B	To cool the arc after disconnecting the circuit
C	To reclose the switch	D	All above
	Answer		

Ref354

Find the input impedance and VSWR of a transmission line 4.3λ long when Zo=100Ω & Z2=200-j150Ω

A	1+j2 Ω, 0.592 λ	B	2-j1.5 Ω, 0.592 λ
C	3+j4 Ω, 1.6 λ	D	3-j4 Ω, 3.6 λ
	Answer		

Ref356



Z = 13+ j 92.6 Ω, Xc= -j2700 Ω

Find A, B, C, D constants

A	A=1.8, B= 180, C =0.0007, D= 1.8	B	A=2, B= 360, C =0.0012, D= 2
C	A=3, B= 400, C =0.015, D= 5	D	A=0.967, B= 93.5, C =0.0007, D=0.967
	Answer		

Ref358

A 50Ω transmission line is connected to a load impedance 75+j60Ω. The forward wave voltage RMS value on line is 25V. Calculate

(a) Power delivered to resistive part of load impedance

(b) RMS current in impedance reflected wave voltage RMS size

(c) Peak voltage , forward and backward waves

(d) Voltage standing wave ratio (VSWR)

(e) Return loss in decibel

A	12.5W, 0.101A, 35.6V, 16.57V, 2.764,4.4dB	B	25W, 0.38A, 70V, 32V, 5.3,8.8dB
C	5W, 0.39A, 70V, 16V, 3, 4dB	D	25W, 0.38A, 40V, 32V, 2.764,4.4dB
	Answer		

Ref360

The sum of $1000 is invested at 6% for 10 years at compound interest.

(a0 Calculate the sum at the end of 10 years (b) If instead of lump sum at the end of 10 years, te loan of $1000 is to be paid by fixed amount each year, calculate the annual amount.

A	$1791, $ 135.90	B	$3400, $270
C	$1000,$70	D	$500,$35
	Answer		

Ref362

Attenuation is related to

A	Radiation loss	B	Dielectric loss
C	23V, 24.8V, -0.96V, -0.76V, 2V	D	All
	Answer		

Ref364

Which is correct?

A	$\lambda = v/f$	B	$\lambda = f/v$
C	$\lambda = fv$	D	$\lambda = f+v$
	Answer		

Ref366

In short transmission line,

A	Load impedance dominates the circuit	B	Line impedance dominates the circuit
C	Load & line impedance equally influence the circuit	D	Load & line impedance do not influence the circuit
	Answer		

Ref368

Reflection coefficient is

A	(Zl – Zo) / (Zl +Zo)	B	(Zl + Zo) / (Zl -Zo)
C	Zl Zo / (Zl +Zo)	D	Zl Zo / (Zl -Zo)
	Answer		

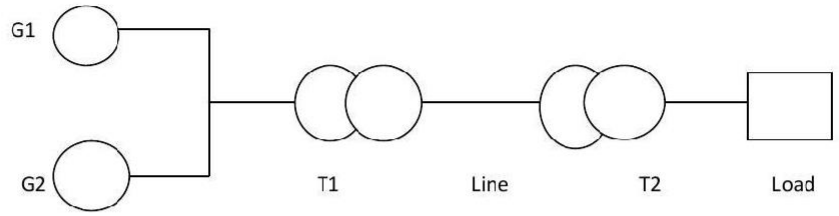
Ref 370

No magnetic field in direction of propagation is

A	TM mode	B	TE mode
C	TEM mode	D	Hybrid mode
	Answer		

4

Ref372



G1-1000VA 250V Z = j0.2 pu

G2-2000VA 250V Z = j0.8 pu

T1=4000VA 250/800V z= j0.1 pu

Line Z=50+j200 ohm

T2= 8000VA 800/400 V Z=j0.08 pu

Load---2500VA 400V

Calculate PU impedance referred to base 5000VA 250V Base

.

A	Generator= j 0.75 pu TrA = j0.125 pu, Tr B = j0.125 pu Line = 0.39 + j1.56 pu Load 0.5 pu	B	Generator= j 1.5 pu TrA = j0.25 pu, Tr B = j0.25 pu Line = 0.78 + j3 pu Load 1 pu
C	Generator= j 3 pu TrA = j0.5 pu, Tr B = j0.5 pu Line = 1.56 + j6pu Load 2 pu	D	Generator= j 3 pu TrA = j0.5 pu, Tr B = j1pu Line = 3 + j4pu Load 3pu
	Answer		

G042 Online Test

Ref353

300 km line, the conductor diameter is 1 cm, the conductor diameter is 1 cm, the distance between conductor is 1 m. Line inductance and line capacitance.

A	0.276H, 0.012x 10^{-9}F/m	B	0.54H, 0.024x 10^{-9}F/m
C	0.81H, 0.072x 10^{-9}F/m	D	01.8H, 0.014x 10^{-9}F/m
	Answer		

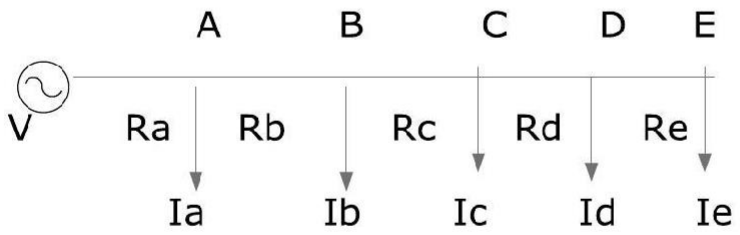
Ref355

A load of 75+j50 Ω is to be matched to a 50Ω transmission line using a λ / 4 matching section. Determine the proper location and characteristics impedance of the matching section.

A	120Ω, 50Ω	B	240Ω, 10Ω
C	360Ω, 15Ω	D	480Ω, 20Ω
	Answer		

Ref357

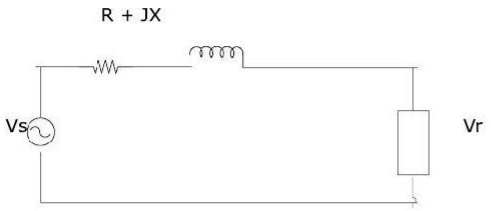
The following is the arrangement of 240V dc supply , calculate the efficiency.



Ra=0.2 Ω, Rb= 0.6 Ω, Rc= 0.4 Ω, Rd= 0.6 Ω, Re= 0.4 Ω Ia = 30A, Ib= 20A, Ic = 30A, Id= 40A, Ie=50A

A	50%	B	15%
C	25%	D	75%
	Answer		

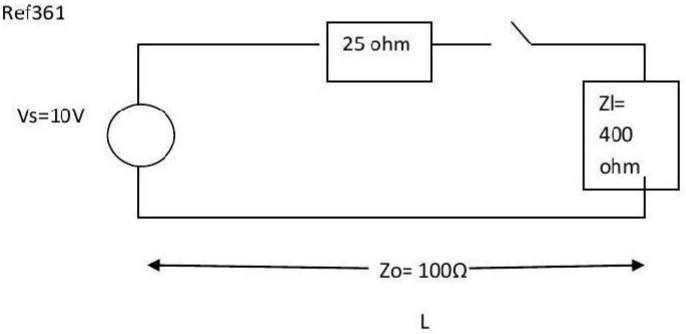
Ref359



In above circuit, the load consumes 1500 watt at PF 0.8 & voltage of 460V . Line impedance Z in 2+j5 ohm. Find (a) Vs for lagging PF (b) Leading PF.

A	300V, 200V	B	150V , 100V
C	490V, 445 V	D	700V, 600V
	Answer		

Ref361



A 10V dc source with internal resistance 25 ohm is connected to a transmission line of length (L) having an impedance of 100 ohm by the switch. The transmission line is terminated with 900 ohm resistor. T = amount of time required for a signal to travel the length of transmission line. Calculate V1+, V 1-, V2+, V2-, Vt

A	8V, 6.4V, -3.84V, -3.072V, 7.488V	B	12V, 12.8V, -1.92V, -1.536V, 3.744V
C	23V, 24.8V, -0.96V, -0.76V, 2V	D	12V, 12.8V, --0.96V, -0.76V, 2V
	Answer		

Ref363

Below surge impedance loading, power factor is

A	Lagging	B	Leading
C	Unity	D	
	Answer		

Ref365

Which is correct?

A	$V2/V1 = I1/I2 = e^{r}$	B	$V2/V1 = I1/I2 = r$
C	$V1/V2 = I1/I2 = e^{r}$	D	$V2/V1 = I1/I2 = e^{-r}$
	Answer		

Ref367

In long transmission line,

A	Load impedance dominates the circuit	B	Line impedance dominates the circuit
C	Load & line impedance equally influence the circuit	D	Load & line impedance do not influence the circuit
	Answer		

Ref369

No electric field in direction of propagation is

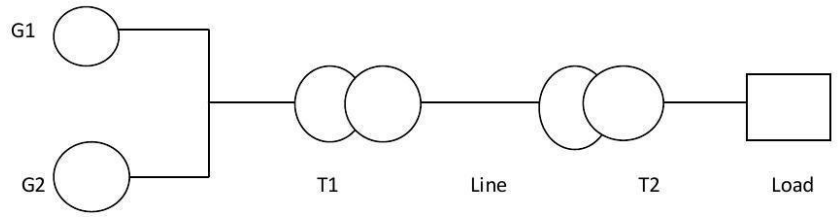
A	TM mode	B	TE mode
C	TEM mode	D	Hybrid mode
	Answer		

Ref371

No electric field and magnetic field in direction of propagation is

A	TM mode	B	TE mode
C	TEM mode	D	Hybrid mode
	Answer		

Ref372



G1-1000VA 250V Z = j0.2 pu

G2-2000VA 250V Z = j0.8 pu

T1=4000VA 250/800V z= j0.1 pu

Line Z=50+j200 ohm

T2= 8000VA 800/400 V Z=j0.08 pu

Load---2500VA 400V

Calculate PU impedance referred to base 5000VA 250V Base

A	Generator= j 0.75 pu TrA = j0.125 pu, Tr B = j0.125 pu Line = 0.39 + j1.56 pu Load 0.5 pu	B	Generator= j 1.5 pu TrA = j0.25 pu, Tr B = j0.25 pu Line = 0.78 + j3 pu Load 1 pu
C	Generator= j 3 pu TrA = j0.5 pu, Tr B = j0.5 pu Line = 1.56 + j6pu Load 2 pu	D	Generator= j 3 pu TrA = j0.5 pu, Tr B = j1pu Line = 3 + j4pu Load 3pu
	Answer		

UETDRIS033

EE304 Power System Protection

The students who complete EE 205 also complete EE304

G015+G046 Online Test

Ref186

The transformer supplies a group of 4 feeders which have individual maximum demands of 2.5, 2.4, 4.3 and 1.6 MVA. If the diversity factor is 1.82, determine the maximum demand on transformer

A	5.93MVA	B	4.3MVA
C	10.8MVA	D	2.4MVA
	Answer		

Ref191

Find the insulation resistance per km of conductor diameter 1.6 cm and internal sheath diameter 5.08 cm. $\rho = 6 \times 10^{-14}$ Ω/ cm.

A	500 M Ω	B	100 M Ω
C	1103 M Ω	D	2000 M Ω
	Answer		

Ref196

The formula to calculate voltage regulation is

A	$\%Reg = \frac{IR\cos\phi r + IX\sin\phi r}{Er}$	B	$\%Reg = \frac{R\cos\phi r + IX\sin\phi r}{Er}$
C	$\%Reg = IR\cos\phi r + IX\sin\phi r$	D	$\%Reg = \frac{R\cos\phi r - IX\sin\phi r}{Er}$
	Answer		

Ref201

Which equipments is not included in trip circuit?

A	Sensor, potential transformer, current transformer	B	Battery
C	Relay contact	D	Circuit breaker
	Answer		

Ref206

Differential relay senses

A	Only one input	B	Three inputs
C	Two inputs	D	Four inputs
	Answer		

Ref 211.

Maximum reach and maximum reach angle are found in

A	Over current relay	B	Differential relay
C	Directional relay	D	Distance relay
	Answer		

Ref212

The operation of distance relay is based on

A	Based on impedance	B	Based on current
C	Based on frequency	D	Based on power
	Answer		

Ref213

The characteristics curve of distance relay is

A	Concentric circles	B	Parabola
C	Straight line	D	Hyperbola
	Answer		

Ref214.

Zone protection of distance relay is based on

A	Zoning in accordance with voltage	B	Zoning in accordance with current
C	Zoning in accordance with power	D	Zoning in accordance with impedance
	Answer		

Ref215.

Operating & restraining voltage and current are utilized in

A	Over current relay	B	Differential relay
C	Directional relay	D	Thermal over load relay
	Answer		

Ref216

Power line can be effectively protected by

A	Over current relay	B	Differential relay
C	Directional relay	D	Distance relay
	Answer		

Ref217

Explain the operation of distance relay is based on .

A	Based on impedance	B	Based on current
C	Based on frequency	D	Based on power
	Answer		

Ref218.

The shape of characteristics of over current relay is

A	Straight line	B	Cirde
C	Curve	D	Pulse
	Answer		

Ref219.

Directional relay is also called

A	Distance relay	B	Reverse power relay
C	Differential relay	D	Over current relay
	Answer		

Ref220

Earthing transformer is utilized at

A	Star connected winding side	B	Delta connected winding side
C	Zigzag connected winding side	D	None of above
	Answer		

Ref225

In CT, primary and secondary windings

A	Closely linked	B	Loosely linked
C		D	
	Answer		

Ref230

The following equation

Mc $d^2\delta/ dt^2 = P_o - P_m \sin \delta$ is utilized to determine

A	Stability of generation	B	Power flow
C	Phase sequence	D	
	Answer		

Ref231

The suitable winding method for earthing transformer is

A	Star/ Delta	B	Delta/Star
C	Delta/Delta	D	Zig Zag
	Answer		

Ref232

Reactors are utilized at busbar to

A	Provide inductance	B	Limit short circuit current
C	Increase disruptive critical voltage	D	Earth leakage current flow path
	Answer		

Ref233

The best way to increase the level of disruptive critical voltage to reduce the possibility of corona is

A	To increase conductor diameter	B	To use longer cross arm
C	To use hollow conductor that increase the conductor diameter	D	To increase insulation resistance
	Answer		

Ref234

Switching voltage velocity is

A	V = 1/ √LC	B	V = √LC
C	V = L/C	D	V = 1/LC
	Answer		

Ref235

Which equipment is used in static VAR compensation system?

A	Magnetic contactor	B	Thermal switch
C	Hall effect switch	D	Silicon Controlled Rectifier
	Answer		

Ref236

Poor power will cause

A	Unnecessary over current flow in line	B	Smoother voltage
C	Ripple reduction	D	Wrong phase sequence
	Answer		

Ref237

Lighting strike near power transformer is protected by

A	Arcing horn	B	Lightning arrester
C	Surge absorber	D	Arcing ring
	Answer		

Ref238

Lightning protection for power line is provided by

A	Arcing horn	B	Lightning arrester
C	Surge absorber	D	Arcing ring
	Answer		

Ref239

Power surge protection is provided by

A	Arcing horn	B	Lightning arrester
C	Surge absorber	D	Arcing ring
	Answer		

Ref244

In large power distribution system, reactive power control is provided by

A	Synchronous motor	B	Capacitor bank
C	Static VAR Compensation System	D	Induction motor
	Answer		

Ref249

To withstand the voltage surge due to lightning strike, the power system equipments must have

A	High VA value	B	High voltage rating
C	High current rating	D	Appropriate base impulse insulation level
	Answer		

Ref254

The following formula $Eg = m\delta g_b r \, Ln \, D/r$ is utilized to calculate

A	Sending end voltage	B	Breakdown voltage to neutral
C	Visual critical voltage	D	Disruptive critical voltage.
	Answer		

Ref208

Can over current & earth fault protections be combined?

A	Not sure	B	No
C	Yes	D	Not applicable
	Answer		

Ref222

Buchholz relay should be utilized for

A	Transformer protection	B	Motor protection
C	Generator protection	D	Power line protection
	Answer		

Ref224

For given CT , % composite error, secondary voltage and rated accuracy are 10P 150 F15

A	10%, 150V, 15	B	150%, 10V, 15
C	15%, 15V, 10	D	
	Answer		

9

Ref226

For 2000/1000/500/1 current transformer 10 Ps 250 is classified as

A	2.5 Ps 1000	B	5 Ps 500
C	2.5Ps 500	D	10 Ps 250
	Answer		

G015+G046 Online Test

Ref187

Calculate allowable sag of 7/3.50 hard drawn copper overhead line conductor span of 150m. The wind loading is 500 pa. Maximum tension is 60% of ultimate strength.

Ultimate strength= 26600N

Gravitational force= 5.94 N/ m

Diameter of conductor = 10.5 mm

A	3.2 m	B	5 m
C	1.678 m	D	0.8m
	Answer		

Ref192

In above problem, if the cable is subject to 66 KV, three phase line, find the dielectric loss.

A	3 watt	B	1.316 watt
C	7 watt	D	10 watt
	Answer		

Ref197

Which one is not a voltage control equipment?

A	Off load tap changer	B	On load tap changer
C	Booster transformer	D	Lightning arrester
	Answer		

Ref202

Which is not included in basic qualities of power system?

A	Speed	B	Future forecast of load
C	Discrimination	D	Reliability
	Answer		

Ref207

The grading of time is

A	Directly proportional to the grading of current	B	Inversely proportional to the grading of current
C			
	Answer		

Ref221

In given specification, 10 amp / 150/40/200 the relay contacts close in

A	150 cycle	B	40 cycle
C	200 cycle	D	10 cycle
	Answer		

Ref226

For 2000/1000/500/1 current transformer 10 Ps 250 is classified as

A	2.5 Ps 1000	B	5 Ps 500
C	2.5Ps 500	D	10 Ps 250
	Answer		

Ref240

Equal areas criterion is utilized for

A	Calculating phase sequence	B	Calculating power flow
C	Calculating stability	D	Calculating power factor
	Answer		

Ref245

Fuel cell is a

A	Electromechanical conversion device	B	Electromagnetic device
C	Electrohydraulic device	D	Electrochemical conversion device
	Answer		

Ref250

In parallel operation of two generators which equipment is utilized to determine to connect them?

A	Synchroscope	B	Power meter
C	Voltmeter	D	Frequency meter
	Answer		

Ref255

A transmission line has 0.0125 µF capacitance 1.5 mH inductance . It is joined with a cable of 0.3µF capacitance & 0.25 mH inductance. Calculate Maximum voltage at junction.
Line to line voltage = 50KV

A	50 KV	B	30 KV
C	25 KV	D	92.5 KV
	Answer		

Ref 211.

Maximum reach and maximum reach angle are found in

A	Over current relay	B	Differential relay
C	Directional relay	D	Distance relay
	Answer		

Ref212

The operation of distance relay is based on

A	Based on impedance	B	Based on current
C	Based on frequency	D	Based on power
	Answer		

Ref213

The characteristics curve of distance relay is

A	Concentric circles	B	Parabola
C	Straight line	D	Hyperbola
	Answer		

Ref214.

Zone protection of distance relay is based on

A	Zoning in accordance with voltage	B	Zoning in accordance with current
C	Zoning in accordance with power	D	Zoning in accordance with impedance
	Answer		

Ref215.

Operating & restraining voltage and current are utilized in

A	Over current relay	B	Differential relay
C	Directional relay	D	Thermal over load relay
	Answer		

Ref216

Power line can be effectively protected by

A	Over current relay	B	Differential relay
C	Directional relay	D	Distance relay
	Answer		

Ref217

Explain the operation of distance relay is based on .

A	Based on impedance	B	Based on current
C	Based on frequency	D	Based on power
	Answer		

Ref218.

The shape of characteristics of over current relay is

A	Straight line	B	Circle
C	Curve	D	Pulse
	Answer		

Ref219.

Directional relay is also called

A	Distance relay	B	Reverse power relay
C	Differential relay	D	Over current relay
	Answer		

Ref220

Earthing transformer is utilized at

A	Star connected winding side	B	Delta connected winding side
C	Zigzag connected winding side	D	None of above
	Answer		

Ref231

The suitable winding method for earthing transformer is

A	Star/ Delta	B	Delta/Star
C	Delta/Delta	D	Zig Zag
	Answer		

Ref232

Reactors are utilized at busbar to

A	Provide inductance	B	Limit short circuit current
C	Increase disruptive critical voltage	D	Earth leakage current flow path
	Answer		

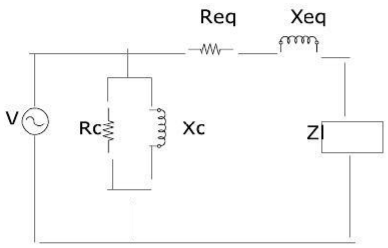
UEEEL0025

EE305 Power Transformers

EE305 Part 1 EE305 Part 2 EE305 Part 3

G040 Online Test

Ref339



Req= 0.3Ω, Xeq= 0.4 Ω, Rc= 200 Ω, Xc= 400 Ω, V = 200 V, Zl= 2.7 + j 3.6 Ω

Find efficiency

A	47%	B	86.4%
C	99%	D	35%
	Answer		

Ref340

200/400V Transformer

Open circuit test—Io= 0.7A, Po= 60W

Short circuit test--- Vsc= 9V, Isc= 6A, Psc = 26 w. Find Re', Xe', Rc and Xc

A	0.12 Ω 0.4 Ω, 666.7 Ω, 317.8 Ω	B	0.06 Ω 0.2 Ω, 333.35 Ω, 156 Ω
C	1 Ω ,4 Ω, 666.7 Ω, 317.8 Ω	D	2 Ω ,8 Ω, 500 Ω, 400 Ω
	Answer		

Ref341

KVA = 500, Copper loss = 4 KW, Iron loss = 2.4 KW. Find ½ load efficiency at 0.8 PF lagging.

A	66%	B	98.1%
C	75%	D	40%
	Answer		

Ref342

%Reg = % Req cosϴ+/- %Xeq sinϴ

+ for

A	Leading	B	Lagging
C	Unity	D	
	Answer		

Ref343

Dy, Yd connection is suitable for

A	Small HV transformer	B	Large LV transformer
C	Power supply transformer	D	Earthing transformer
	Answer		

Ref344

10MVA Star/ Star connected transformer. 33KV/ 11KV

No load test Line voltage = 11KV, Line current = 15A, Power = 75KW

Short circuit test Line voltage= 1650V L-L, Line current = rated current, Power=90KW

Find Req, Xeq, Ro', Xo'

A	0.98Ω, 5.3 Ω, 14.5KΩ,2.93 KΩ	B	2Ω, 10 Ω, 20KΩ,5KΩ
C	4Ω, 20 Ω, 40KΩ,15 KΩ	D	1Ω, 5 Ω, 30KΩ,15 KΩ
	Answer		

Ref345

Find the load at maximum efficiency of the following single phase transformer. KVA = 5000, Voltage ratio = 6600/440, Iron loss = 2.9 KW, Full load copper loss = 4KW, Maximum efficiency is achieved at 0.8 PF lagging. Find maximum efficiency.

A	0.7 , 90%	B	0.851, 98.38%
C	0.35, 75%	D	0.45, 85%
	Answer		

Ref346

Find all day efficiency of the following transformer 100 KVA, single phase, Iron loss=750W Full load copper loss = 750W 24 hr load cycle.

Time	Power factor	Output
8 hr	0.8 Lag	80KW
6hr	0.9 lag	50 KVA
4hr	25KVA & 20 KW	
3hr	Energized with no load	
The rest of time	De-energized	

Calculate all day efficiency.

A	98.1%	B	75%
C	60%	D	50%
	Answer		

Ref347

To operate two transformers in parallel , it needs

A	Same voltage ratio	B	Same % impedance
C	Like polarity	D	All above
	Answer		

Ref348

2700KVA load PF 0.9 lagging is supplied by two transformers connected in parallel.

Tr A = 2000KVA Z = 3+J2 ohm

TrB =1000KVA X=3+j5 ohm

Find load A transformer load share, B load share.

A	1350, 1350 KVA	B	900, 1800 KVA
C	1000KVA, 1700KVA	D	721KVA, 2332KVA
	Answer		

Ref349

Which winding can not take away harmonic ?

A	Star/Star without neutral	B	Star/Star with neutral
C	Delta/Delta	D	Star/Delta
	Answer		

Ref350

400/200 V , 50VA transformer needs to supply 600/200V. Find the rating.

A	The same rating	B	100VA
C	33.3VA	D	11VA
	Answer		

Ref351

ONAF is

A	Oil is naturally cooled by force air	B	Forced oil is cooled by forced air
C	Oil is naturally cooled by force oil	D	Oil is naturally cooled by natural air
	Answer		

EE306 Electro-mechanical Control

The students can study Programming language

UEERE0066

EE307 Energy Efficient Building Design

EE307 Part 1 EE307 Part 2 EE307 Part 3 EE307 Part 4

EE307 Part 5 EE307 Part 6

Test & Assessment

http://www.filefactory.com/file/5laxij9trib1/n/K041_Test_pdf

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

K041 Test

Ref 616

What are two types of solar design?

Ref 617

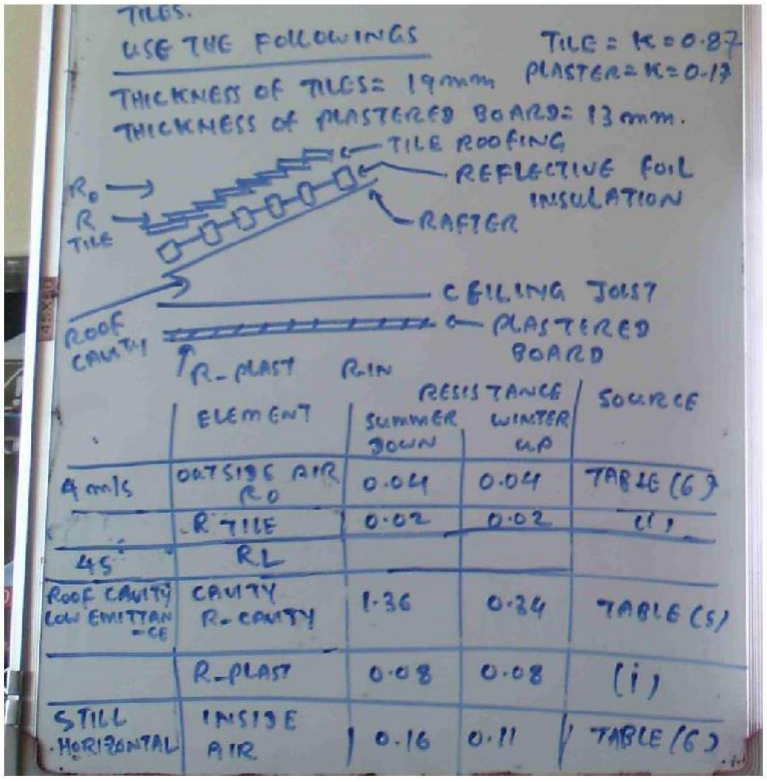
Explain passive solar design

Ref 618

What is comfort?

Ref 619

Calculate U value for a pitched and vented tile roof with reflective foil laminate under the tiles.



Ref 620

Calculate net gain or loss of heat through a month for north facing single glass window for January & July in Sydney. The window is 0.9 m height and 0.2 m from the bottom of the eaves which are 0.6m wide. Assume for window that 90% of it is glass. Transmittance is 0.76 and U value is 6.14.

Ref 621

Define the insulation

Ref 622

Explain how the heat is transferred in brick veneer dwelling

Ref 623

Explain thermal mass and storage

Ref 624

Calculate heat gain per day from the customers in a 150 m^2 gym, If the gym capacity is 50 customers and the gym is full between 6 am to 8 am and 5 pm to 8:30 pm. At all other times, it is 30% full on average.

Ref 625

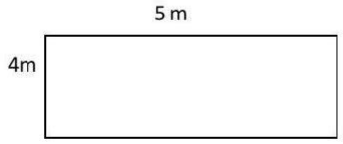
A 4000 sq ft retail store near Tuson, Arizona has been calculated to have sensible heat gain of 100,000 Btuh at summer design condition. (105 DB, 66 WB for this location). Calculate heat removed and air flow rate indoor.

Ref 626

Based on above, 4000 sq ft needs 13227 cfm air .Calculate air requirement for the 44 sqft bed room. 66% of air is applied

Ref 627

Calculate total heat loss by conduction for a simple one room house in Melbourne during the months of January & July.



Roof: 15 Degree. Thickness of tile 19 mm. K= 0.81. Plaster board 13 mm, K = 0.17.

Wall Aerated concrete 200 mm thick.

Outside air (R out) 0.12 m^2 K/W Inside air (R in) 0.04 m^2 K/W

The house has $1\,m^2$ window on each wall, average ceiling, no open fire space and weather stripping at the bottom of external doors. The house is 4m x 5m with 2.4 m ceiling height. The windows are single glazed. U_1 and U_2 are U_{summer} and U_{winter} respectively.

The roof is a double pitched and vented tile roof with reflective foil laminate under the tile. Floor is carpet on a concrete slab on ground.

(30) In the above problem, calculate infiltration heat loss/ gain in this building. (Timber window, average ceiling, no open fire place).

$Q_v = A_c\ V\ (\ T_i - T_a\ )\ N\ x\ 0.0286$

Ref 628

Explain the design and assessment tools

Ref 629

Explain the design for climate

Ref 630

What are the factors contributing thermal comfort inside building

Ref 631

Describe the domestic solar hot water system

Ref 632

Explain the building energy efficiency

Ref 633

What kinds of materials are used for water piping system of the building?

Ref 634

Explain the followings

(a) Automatic control for electrical heating (b) Thermostatic control (c) Water heater (d) Space heating

Ref 635

Explain the basic psychrometric chart

Ref 636

Explain the step by step approach for building electrical design system

Ref 637

Describe the types of building construction materials

Ref 638

Write the steps of building construction sequence

Ref 639

How do you understand thermal neutrality?

Ref 640

Write the formula for (a) Thermodynamic second law (b) Heat conduction (c) Heat convection (d) Heat radiation

UEERE0001+UEERE0060+UEERE0061+UEERE0013

EE308 Sustainability (Grid Connected PV Inverter)

EE308 Part 1 EE308 Part 2 EE308 Part 3

K035 Tests

Ref 605

Inverter is

(a) Electrical device that converts direct current to alternating current
(b) Electrical device that converts alternating current to direct current
(c) Electrical device that converts alternating current to another level of alternating current
(d) Electrical device that converts direct current to another level of direct current

A		B	
C		D	
	Answer		

Ref 606

By switching the DC current rapidly, it can form

(a) Wave with higher value
(b) Alternating wave
(c) Nothing coming out
(d) Constant wave

A		B	
C		D	
	Answer		

Ref 607

PWM-Pulse width modulating is to provide

(a) The regulated out put voltage
(b) To fix the output value at constant
(c) To regulate the width of a square wave pulse to regulate or adjust the inverter's output voltage
(d) To amplify the voltage

A		B	
C		D	
	Answer		

Ref 608

Which type of oscillator is utilized in sine wave inverter

(a) Budbba oscillator
(b) Wien bridge oscillator
(c) Butterworth oscillator
(d) Carrier wave oscillator

A		B	
C		D	
	Answer		

Ref 609

Which type of switch is mostly utilized in PWM inverter driver circuit?

(a) H Bridge MOSFET switch

(b) Change over switch

(c) Cascaded transistor switches

(d) By pass switch

A		B	
C		D	
	Answer		

Ref 610

Which order is correct to arrange the solar inverter system?

(a) Solar array, ac filter, inverter, line

(b) Solar array, inverter, ac filter, line

(c) Solar array, inverter, dc regulator, line

(d) Solar array, dc regulator, line

A		B	
C		D	
	Answer		

Ref 611

What is the correct operating of islanding protection?

(a) Detect the position of sun and rotate the solar arrays to face the direction of sun

(b) Detect the shadow and regulate the current flow into solar array

(c) Detect the grid voltage when the grid voltage is zero, it switches off the inverter circuit

(d) Detect the grid voltage, when the grid voltage is zero, it switches on the inverter circuit

A		B	
C		D	
	Answer		

Ref 612

MOST FET driver circuit is connected to operate

(a) MOSFET Switches

(b) Filter

(c) Oscillator

(d) Voltage regulator

A		B	
C		D	
	Answer		

Ref 613

Which operation is the one that best describes the operation of filter

(a) In order to optimize the frequency, a switching frequency must be chosen which is low enough to keep the switches in line but high enough to make sure the filter inductor is not unnecessarily large

(b) In order to optimize the voltage, a switching voltage must be chosen which is low enough to keep the switches in line but high enough to make sure the filter inductor is not unnecessarily large

(c) In order to optimize the frequency, a switching frequency must be chosen which is high enough to keep the switches in line but high enough to make sure the filter inductor is not unnecessarily low

(d) In order to optimize the current, a switching current must be chosen which is low enough to keep the switches in line but high enough to make sure the filter inductor is not unnecessarily large

A		B	
C		D	
	Answer		

Ref 614

Which type of filter is suitable for inverter filter design

(a) High pass filter

(b) Band pass filter

(c) Band stop filter

(d) Square wave low pass two pole filter

A		B	
C		D	
	Answer		

Ref 615

Which is the correct arrangement of Grid connected PV inverter system?

(a) PV Modules, Inverter, AC isolator, DC isolator, meter/outlet, power grid

(b) PV Modules, DC isolator, inverter, ac isolator, meter/ outlet, power grid

(c) PV Modules, DC isolator, power grid

(d) PV modules, DC Isolator, Battery charger, Inverter, AC isolator, power grid

Project Management

UEECD0014	Develop design briefs for electrotechnology projects	40
UEEEL0015	Manage large electrical projects*	40
UEEEL0058	Plan large electrical projects*	60
UEECD0026	Manage risk in electrotechnology activities	60
UEECD0059	Write specifications for electrical engineering projects	40

Test & Assessment

Submit the project work advised by the teacher

Week 8+9-EE309 Project Management

Study the notes & submit the project. The topic will be given by the teacher.

UEECD0003+UEECD0056

Week 10+11+12-EE310 Engineering Officer Competency Report

The topic will be given by the teacher.