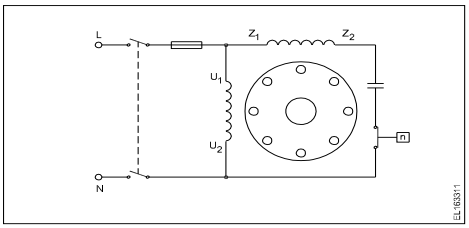
Electrician - Block 2 - Module 1 : AC Machines

Questions: Level 1

1 What is the working principle of single phase induction motor?

A Lenz's law
B Fleming's left hand rule
C Faraday's laws of electrolysis
D Faraday's laws of electromagnetic induction

2 What is the name of single phase motor?

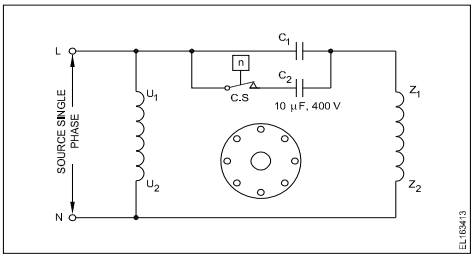


A Permanent capacitor motor
B Induction start capacitor run motor
C Capacitor start capacitor run motor
D Capacitor start induction run motor

3 What is the working principle of universal induction motor?

A Lenz's law
B Same as D.C Motor
C Faraday's laws of electrolysis
D Faraday's laws of electromagnetic induction

4 What is the name of the single phase motor ?



A Universal motor
B Permanent capacitor motor
C Capacitor start induction run motor
D Capacitor start capacitor run motor

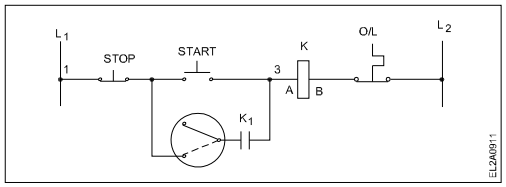
5 How much difference in electrical degree between main and starting winding?

A 0°
B 60°
C 90°
D 120°

6 What is the formula to calculate the slip speed (Nslip) of 3 phase squirrel cage induction motor?

A $N_{slip} = N_s - N_r$
B $N_{slip} = N_r - N_s$
C $N_{slip} = \frac{N_S - N_r}{N_r}$
D $N_{slip} = \frac{N_S - N_r}{N_S}$

7 What is the type of control circuit?

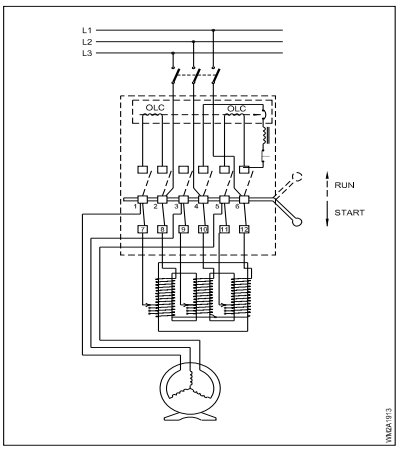


A Inching control
B ON remote control
C OFF remote control
D Forward & reverse control

8 Which formula is used to calculate the total electrical degree in stator of an A.C motor?

A Total electrical degree = 180° / no. of slots
B Total electrical degree = 180° x no. of slots
C Total electrical degree = 180° / no. of poles
D Total electrical degree = 180° x no. of poles

9 What is the name of the A.C motor starter?



A DOL starter
B Auto transformer starter
C Semi automatic star delta starter
D Fully automatic star delta starter

10 What is the formula to calculate synchronous speed of a A.C 3 phase induction motor?

A Synchronous speed = $\frac{120F}{P}$

B Synchronous speed = $\frac{120P}{F}$

C Synchronous speed = $\frac{120}{PF}$

D Synchronous speed = $\frac{PF}{120}$

11 Which formula is used to calculate percentage slip of an AC 3 phase induction motor?

A % = $\frac{N_S - N_r}{N_S} \times 100$

B % = $\frac{N_r - N_S}{N_S} \times 100$

C % = $\frac{N_S - N_r}{N_r} \times 100$

D % = $\frac{N_r - N_S}{N_r} \times 100$

12 What is the phase displacement between windings in 3 phase motor?

A 90°

B 120°

C 180°

D 360°

13 Which speed is called as synchronous speed in 3 phase induction motor?

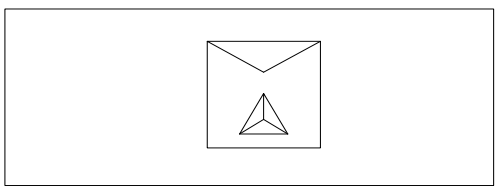
A No load speed

B Full load speed

C Rotating magnetic field speed

D Relative speed between stator and rotor

14 What is the name of the starter symbol?



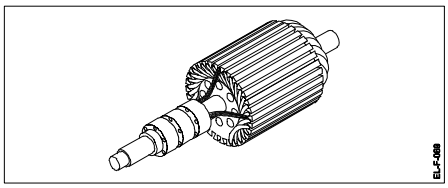
A Star delta starter

B Rheostatic starter

C Direct on-line starter

D Autotransformer starter

15 What is the name of part in A.C motor ?



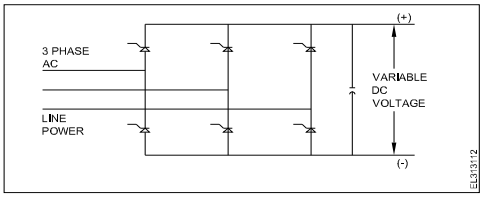
A Armature

B Single cage rotor

C Double cage rotor

D Wound rotor

16 What is the name of the converter?



A Metal rectifier

B Rotary convertor

C Mercury arc rectifier

D Silicon controlled rectifier

17 Which motor will operate with lagging unity and leading power factor?

A Capacitor start - capacitor run motor

B Permanent capacitor motor

C Slip ring induction motor

D Synchronous motor

18 Which motor will run in constant speed from no-load to full load?

A Slip ring induction motor

B Squirrel cage induction motor

C Synchronous motor

D Double cage induction motor

Questions: Level 2

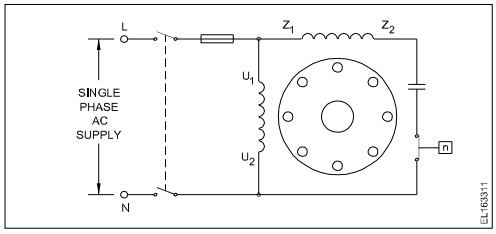
1 Which type of A.C single phase motor is classified under commutator motor type?

A Stepper motor
B Repulsion motor
C Shaded pole motor
D Permanent capacitor motor

2 Which method is adopted to start the single phase induction motor?

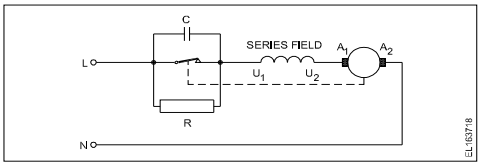
A Split phase method
B Varying supply voltage method
C Reversal of input supply terminals
D Reversal of running coil connection

3 What is the type of A.C single phase motor?



A Permanent capacitor motor
B Capacitor start capacitor run motor
C Induction start induction run motor
D Capacitor start induction run motor

4 What is the purpose of the capacitor (C) in centrifugal switch speed control method of universal motor?



A Maintain constant speed
B Improve the power factor
C Protect from the over loading
D Reduce the sparks on the contacts

5 Which type of AC single phase motor having low starting torque?

A Induction start induction run motor
B Capacitor start induction run motor
C Capacitor start capacitor run motor
D Resistance start induction run motor

6 What is the function of centrifugal switch in single phase motors?

A Maintain constant speed
B Disconnect the starting winding
C Disconnect the running winding
D Protect the motor from over loading

7 Which is the application of universal motor?

A Jet pump
B Food mixer
C Tele printer
D Compressor

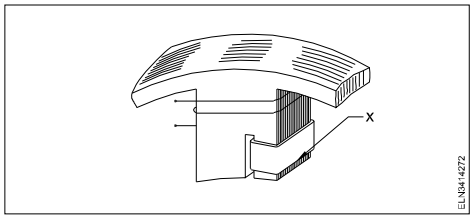
8 Which single phase motor is fitted with wound rotor?

A Repulsion motors
B Shaded pole motors
C Permanent capacitor motors
D Capacitor start capacitor run motors

9 What is the relation between running winding and starting winding of a single phase induction motor with respect to resistance?

A Both resistances will be equal
B Running winding is less, starting winding more
C Running winding is more, starting winding less
D Running winding is less, starting winding infinity

10 What is the function of the part marked ‘x’ in shaded pole motor?



A Increase the efficiency
B Maintain constant speed
C Initiate the rotor movement
D Strengthen the magnetic field

11 How the direction of rotation of a capacitor start induction run motor is reversed?

A By changing the supply terminals
B By changing the capacitor connections
C By interchanging main winding terminals
D By interchanging both main and auxiliary winding terminals

12 Which motor is preferred for domestic water pumps?

A Universal Motor
B Repulsion motor
C Shaded pole motor
D Capacitor start motor

13 What is the purpose of compensating winding used in compensated repulsion motor ?

A To limit the current
B To reduce the de-magnetizing methiod
C To minimize the cross distraction of magnetic field effect
D To improve the power factor

14 How to produce starting torque in a shaded pole fan motor?

A Using shaded rings on poles
B Using capacitor on winding circuits
C Interchanging cage rotor windings by switch
D Interchanging the field coil windings by switch

15 What is the reason to use a permanent capacitor in fan motor circuit?

A Speed regulation
B Lower power consumption
C Splitting of phase for torque
D Controlling electrical interference

16 What is the application of shaded pole motor?

A Hair dryer
B Ceiling fan
C Wet grinder
D Washing machine

17 What is the function of centrifugal switch used in capacitor start, capacitor run induction motor?

A Disconnect the running winding after reached 75% to 80% speed
B Disconnect the starting winding after reached 75% to 80% speed
C Disconnect the starting capacitor after reached 75% to 80% speed
D Disconnect the starting and running winding after reached 75% to 80% speed

18 Where the capacitor is connected in a single phase permanent capacitor motor?

A In series with starting winding
B In series with running winding
C In parallel with starting winding
D In parallel with running winding

19 Which motor is used in table fan?

A Universal motor
B Shaded pole motor
C Eddy current motor
D Permanent capacitor motor

20 What is the rotor frequency of a 3 phase squirrel cage induction motor at the time of starting?

A Equal to supply frequency
B 3 times less than supply frequency
C 3 times more than supply frequency
D 2 times less than supply frequency

21 How the voltage is received in the rotor of induction motor?

A Direct connection from stator
B Due to back emf produced in stator
C Direct connection to rotor from supply
D By the transformer action of stator and rotor

22 Which method is applied to control the speed of 3 phase squirrel cage induction motor from its rotor side?

A Cascade operation
B Changing applied voltage
C Changing applied frequency
D Changing the number of poles

23 What is the purpose of using thermal cutout in addition to fuse in AC motor circuit?

A Protect from heavy load
B Protect against high voltage
C Allow for continuous over loading
D Protect against dead short circuit

24 What is the relation between torque and slip in an AC induction motor?

A Slip increases torque decreases
B Slip increases torque increases
C Slip decreases torque increases
D Slip decreases torque decreases

25 What is effect of AC induction motor if rotor bar is in open circuit?

A Vibration of shaft
B Motor will not start
C Runs in slow speed
D Over heating of motor

26 Which material is used as wedges in winding process?

A Empire
B Cotton
C Bamboo
D Terylene

27 Which test in winding is essential before giving supply?

A Ground test
B Polarity test
C Open circuit test
D Short circuit test

28 Why the rotor bars are mounted in a slightly skewed position in 3 phase motor?

A Generate maximum flux
B Reduce the stray losses
C Maintain the rotor speed constant
D Produce more uniform rotor field and torque

29 Which loss is determined by no load test of 3 phase induction motor?

A Iron loss
B Copper loss
C Friction loss
D Windage loss

30 Why slip ring induction motor is fitted with wound rotor?

A To reduce the slip
B To control the speed
C To reduce the losses
D To get high starting and running torque

31 What is the function of timer in automatic star delta starter?

A Trip at over load
B Switch ON at pre-set time
C Change from star to delta
D Switch OFF at pre set time

32 What is the starting current of an A.C 3 phase induction motor?

A 1 to 2 times of full load current
B 2 to 3 times of full load current
C 4 to 5 times of full load current
D 5 to 6 times of full load current

33 What are the two functional circuits incorporated with a three phase motor starter?

A Open circuit and short circuit
B Closed circuit and open circuit
C Short circuit and closed circuits
D Control circuit and power circuit

34 Which type of starter is used to start and run the 3 phase slip ring induction motor?

A Direct on-line starter
B Rotor rheostat starter
C Auto transformer starter
D Manual star-delta starter

35 What is the purpose of using rotor resistance starter to start 3 phase slip ring induction motor?

A Reduce rotor voltage
B Reduce rotor current
C Increase the torque
D Reduce the power loss

36 Which method of speed control is only applicable for 3 phase slipring induction motor?

A Cascade operation method
B Rotor rheostat speed control
C Changing the applied frequency method
D Changing the number of stator poles method

37 Why thermal over load relay unit is provided in the starter?

A To protect motor from over load
B To start the motor
C To reduce starting current
D To increase the torque of the motor

38 Why D.C supply is necessary for synchronous motor operation?

A Reduce the losses

B Start the motor initially

C Run the motor with over load

D Run the motor at synchronous speed

39 Which acts as both inverter and converter?

A Metal rectifier

B Mercury arc rectifier

C Semi conductor diode

D Synchronous converter

40 What is the function of inverter?

A Convert A.C to D.C

B Convert D.C to A.C

C Smoothening A.C sine wave

D Convert pulsating DC into pure D.C

41 Which converting device can be over loaded?

A Rectifier unit

B Rotary converter

C Motor generator set

D Mercury arc rectifier

42 Why exciter is essential to run a synchronous motor?

A Carry more load in motor

B Improve the power factor

C Reduce the losses in motor

D Run the motor at synchronous speed

43 Which is the main application of synchronous motors?

A Elevators

B Paper rolling mills

C AC to DC converter

D Power factor correction device

44 What is the advantage of motor generator set?

A Noiseless

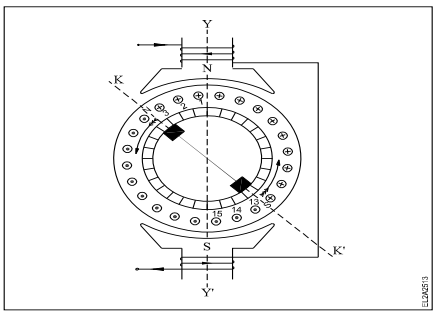
B High efficiency

C Low maintenance required

D DC output voltage can be easily controlled

Questions: Level 3

1 What is the effect in a repulsion motor, if the magnetic axis shifted to another side?



A Direction of rotation will change
B Direction of rotation remains same
C Motor speed increases from rated speed
D Motor speed will reduce from rated speed

2 What is the effect if the centrifugal switch is not disconnected after the motor starts?
A Motor will run normally
B Motor will stop immediately
C Starting winding will burn out
D Motor will run very slow speed

3 How the direction of rotation of repulsion motors is to be reversed?
A By interchanging the rotor terminals
B By interchanging the supply terminals
C By changing the main winding terminals
D By changing the compensating winding terminals

4 Why a capacitor is connected across centrifugal switch in the centrifugal switch speed control method of single phase motor?
A To maintain constant speed
B To protect from over loading
C To improve the power factor
D To reduce the sparks in contacts

5 How the radio interference can be suppressed in centrifugal switch method of speed control of universal motor?
A By connecting capacitor across centrifugal switch
B By connecting capacitor in series with centrifugal switch
C By adding compensating winding with armature
D By connecting an inductor in series with centrifugal switch

6 Why external resistance is included in the rotor circuit at starting through 3 phase slipring induction motor starter?
A To get high running torque
B To get high starting torque
C To reduce the load current
D To get increased speed at starting

7 What is the effect of motor, if the rotor windings in slipring induction motor is open circuited at starting?
A Will not run
B Runs at slow speed
C Runs at very high speed
D Runs but not able to pull load

8 What happens to a 3 phase induction motor if one phase fails during running?
A Motor runs normally
B Motor stop instantaneously
C Motor runs slowly, finally it burns
D Motor runs with irregular speed

9 What is the defect if starter with single phasing preventer does not switch 'ON'?
A Improper phase sequence
B Fluctuations in line voltage
C Loose contact in supply lines
D Wrong terminal connections at motor

10 Which fault condition thermal overload relay protects A.C induction motor?
A Short circuit
B Open circuit
C Over current
D Under voltage

11 What is the reason for frequent blowing of fuse after motor running some time?
A Improper earthing
B Over loading of motor
C Heavy voltage fluctuation
D Poor insulation in winding

12 What happens to a 3 phase induction motor, if one phase fails during starting?
A Motor runs and stop immediately
B Motor runs in slow speed continuously
C Motor runs and draws more current
D Motor continues to run with irregular speed

13	Why the synchronous motor fails to run at synchronous speed?
A	In sufficient excitation
B	Defective pony motor
C	Open in damper winding
D	Short in damper winding
14	How the synchronous motor is used as a synchronous condenser?
A	Varying the motor load
B	Varying the rotor excitation
C	Varying stator voltage in motor
D	Varying stator current in motor
15	How synchronous motor works as a power factor corrector?
A	Varying the line voltage
B	Varying the field excitation
C	Increasing the speed of motor
D	Decreasing the speed of motor

Module 1 : AC Machines- Key paper

Questions: Level 1

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

Questions: Level 2

SL.No	Key
1	B
2	A
3	D
4	D
5	D
6	B
7	B
8	A
9	B
10	C
11	C
12	D
13	D
14	A
15	C
16	A
17	C
18	A
19	D
20	A
21	D
22	A
23	C
24	B
25	D
26	C
27	B
28	D
29	A
30	D
31	C
32	D
33	D
34	B
35	C
36	B

SL.No	Key
37	A
38	D
39	D
40	B
41	A
42	D
43	D
44	D

Question: Level 3

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

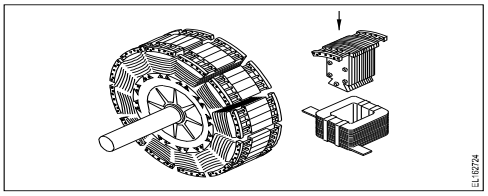
Electrician - Block 2 - Module 2 : Alternator

Questions: Level 1

1 Which rule is used to find the direction of induced emf in an alternator?

A Cork screw rule
B Right hand palm rule
C Fleming's left hand rule
D Fleming's right hand rule

2 What is the name of the part of alternator?



A Stator
B Exciter
C Salient pole rotor
D Smooth cylindrical rotor

3 How alternators are rated?

A KVA
B KW
C MW
D KV

4 What is the supply frequency of an alternator having 6 poles runs at 1000 rpm?

A 25 Hz
B 40 Hz
C 50 Hz
D 60 Hz

5 What is the working principle of an alternator?

A Self induction
B Mutual induction
C Electro-magnetic induction
D Electro-static induction

6 How many slip rings are in the 3 phase star connected stationary armature type alternator?

A 1
B 2
C 3
D 4

7 What is angle difference between any two armature windings of 3 phase delta connected alternator?

A 90°
B 120°
C 150°
D 180°

8 What is the formula to calculate the percentage of voltage regulation ?

A $\%V_R = \frac{V_{FL} - V_{NL}}{V_{FL}}$

B $\%V_R = \frac{V_{FL} + V_{NL}}{V_{FL}}$

C $\%V_R = \frac{V_{NL} - V_{FL}}{V_{FL}} X100$

D $\%V_R = \frac{V_{FL}}{V_{NL} - V_{FL}} X100$

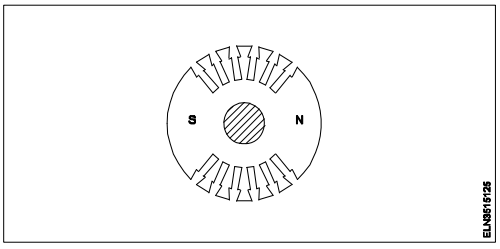
9 What is the wave form of output voltage of an rotating field type alternator?

A Sine wave
B Square wave
C Triangular wave
D Saw-tooth wave

10 Which instrument is used to find the instant of closing the switch which connects the alternator in parallel?

A Techometer
B Phase sequence meter
C Telescope
D Synchroscope

11 What is the name of the part of an alternator?



A Double cage rotor
B Projecting pole rotor
C Salient pole rotor
D Smooth cylindrical rotor

12 What is the term used to state the order in which the 3 phase voltage reach their maximum value?

A Phase sequence

B Wave form

C Phase displacement

D Angular displacement

Questions: Level 2

1 Calculate the speed of an alternator having 2 poles at a frequency of 50 Hz?

A 1500 rpm
B 2500 rpm
C 3000 rpm
D 6000 rpm

2 What condition the lamps become dark in dark lamp method of parallel operation of two alternators?

A Terminal voltages are equal
B Voltage and frequency are equal
C Voltage and power rating are equal
D Frequency are same in both alternator

3 How to compensate de-magnetizing effect due to armature reaction in an alternator?

A Reducing the speed of alternator
B Reducing field excitation current
C Increasing field excitation current
D Increasing the speed of alternator

4 What is the use of synchroscope?

A Adjust the output voltage
B Adjust the phase sequence
C Adjust the supply frequency
D Indicate the correct instant for paralleling

5 What is the name of the equipment that provides D.C to the rotor of alternator?

A Exciter
B Inverter
C Converter
D Synchroniser

6 What is the purpose of damper winding in alternator?

A Reduces the copper loss
B Reduces windage losses
C Reduces the hunting effect
D Improves the voltage regulation

7 Which condition is to be satisfied before parallel operation of alternators?

A Rating must be same
B Phase sequence must be same
C Rotor impedance must be same
D Stator impedance must be same

8 What is the speed of an alternator connected with a supply frequency of 50 Hz at rated voltage having 4 poles?

A 1000 rpm
B 1500 rpm
C 3000 rpm
D 4500 rpm

9 What condition the two lamps become bright and one lamp dark during paralleling of two alternators?

A Terminal voltages are equal
B Voltages and frequencies are equal
C Voltages and phase sequence are equal
D Both the alternators receive same frequency

10 Calculate the speed in r.p.s of the 2 pole, 50HZ alternator?

A 50 rps
B 100 rps
C 1500 rps
D 3000 rps

11 What is the advantage of using rotating field type alternator?

A Easy to locate the faults in the field
B Easy to connect the exciter with alternator
C Easy to dissipate the heat during running
D Two slip rings only required irrespective of No. of phases

12 What is the purpose in increasing the field excitation current in alternator?

A Neutralize demagnetizing
B Provide over voltage protection
C Provide dead short circuit protection
D Improve the power factor of alternator on

13 What factor the amount of induced emf depends upon?

A Number of poles of alternator
B Change of speed of alternator
C Rate of change of flux linkage
D Direction of rotation of the alternator

14 How the salient pole rotor could be identified?

A By its larger diameter and longer axial length

B By its larger diameter and shorter axial length

C By its shorter diameter and larger axial length

D By its shorter diameter and shorter axial length

15 How the smooth cylindrical type rotor could be identified?

A By its larger diameter and longer axial length

B By its larger diameter and shorter axial length

C By its shorter diameter and larger axial length

D By its shorter diameter and shorter axial length

16 Where the damper winding is placed in an alternator?

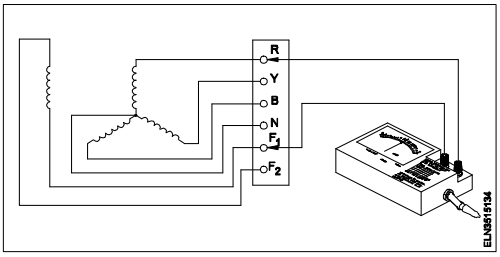
A In the pole shoe

B In the armature

C In the shaft

D In the exciter

17 What test is conducted in the alternator?



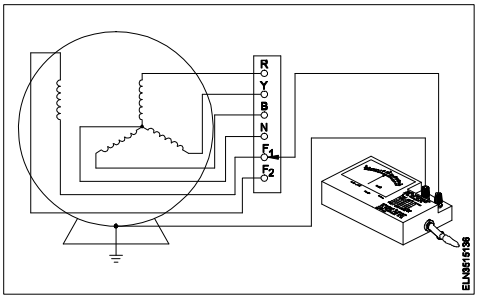
A Continuity test between armature windings

B Continuity test between field windings

C Earth test between winding and body

D Insulation test between armature and field windings

18 What test is conducted in the alternator?



A Continuity test between field winding

B Insulation test between armature and body

C Insulation test between armature and field

D Insulation test between field and body

19 How many cycles will be completed, if a coil of a 4 pole alternator undergoes one revolution?

A 1

B 2

C 3

D 4

20 What is the instrument used to check the phase sequence of alternator?

A Synchroscope

B Phase sequence meter

C Techometer

D Frequency meter

21 What is the disadvantage in salient pole type rotor?

A Having more space for field coil

B Having difficult to obtain mechanical balancing

C Having more space for heat dissipation

D Having projecting field poles

22 What is the drawback of open type armature slots?

A Easy placing of form wound coils

B Easy removal and replacement of the coils

C Uneven distribution of the magnetic flux

D Uneven air gap between stator and rotor

Questions: Level 3

1 What is the cause for hunting effect in alternators?

A Due to over load
B Running without load
C Running with full load
D Due to sudden fluctuation in load

2 How to compensate de-magnetizing effect due to armature reaction in an alternator?

A By reducing the speed of alternator
B By increasing the speed of alternator
C By increasing the field excitation current
D By decreasing the field excitation current

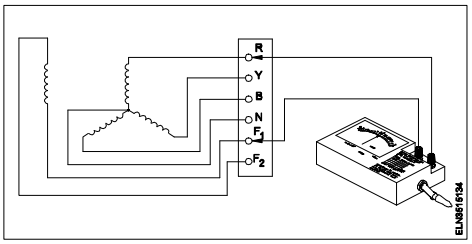
3 How the frequency of incoming alternator could be changed if needed?

A By changing the level of excitation
B By changing the speed of prime mover
C By changing the direction of excitation
D By interchanging any two terminals of alternator

4 How the phase sequence of the incoming alternator could be changed if required?

A By adjusting the speed of alternator
B By changing level of excitation
C By adjusting the fuel inlet level of primemove
D By interchanging any two terminals of alternator

5 What could be the defect, if the megger reads zero Megaohm?



A Short circuit between armature windings
B Short circuit between armature and field winding
C Earth fault between armature winding and body
D Earth fault between field winding and body

6 Which is used to prevent the hunting effect in alternator?

A Compensating winding
B Stator winding
C Damper winding
D Rotor winding

Module 2 : Alternator - Key paper

Questions: Level 1

SL.No	Key
1	D
2	C
3	A
4	C
5	C
6	B
7	B
8	C
9	A
10	D
11	D
12	A

Questions: Level 2

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

Question: Level 3

SL.No	Key
1	D
2	C
3	B
4	D
5	B
6	C

Electrician - Block 2 - Module 3 : Illuminations

Questions: Level 1

1 What is the S.I unit of luminous intensity?
A Lux
B Lumen
C Candela
D Steradian

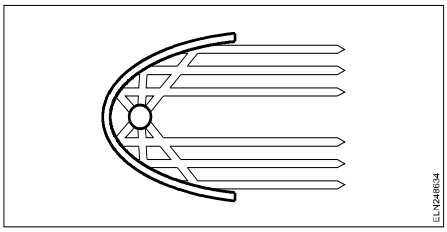
2 Which term refers that the flow of light into a plane surface?
A Lumen
B Illuminance
C Luminous flux
D Luminous intensity

3 What is the term refers luminous flux given by light source per unit solid angle?
A Lumen
B Candela
C Illuminance
D Luminous intensity

4 What is the unit of luminous flux?
A Lux
B Lumen
C Candela
D Lumen/m^2

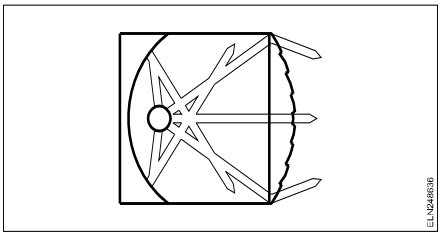
5 What is the unit of luminous efficiency?
A Lux
B Lumen
C Lumen/m^2
D Lumen/watt

6 What is the name of the reflector?



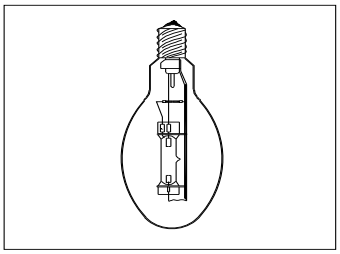
A Mirror type
B Soft light type
C Parabolic type
D Dispersive type

7 What is the name of light?



A Spot light
B Bulk light
C Flood light
D Flash light

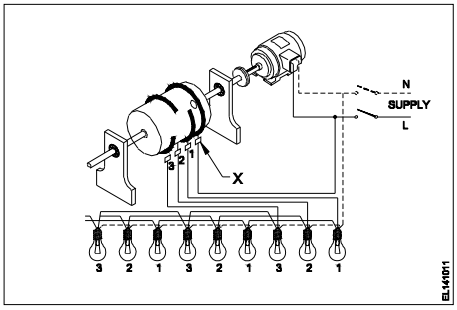
8 What is the name of lamp?



A MAT type MV lamp
B HP metal halide lamp
C MB type HPMV lamp
D MA type HPMV lamp

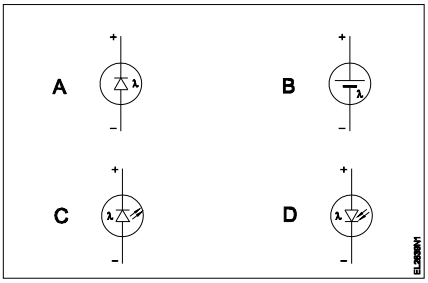
9 What is the expansion of CFL?
A Colour Fluorsecent Lamp
B Complete Fluorescent Lamp
C Carbon Filament Lamp
D Compact Fluorescent Lamp

10 Name the part of the moving light circuit marked 'X'?



A Copper springs
B Supply terminal
C Brushes
D Flashers

11 Which is the circuit symbol of solar cell?



A A
B B
C C
D D

12 What is the maximum length of the tube in neon sign lamp?
A 2 metre
B 3 metre
C 1 metre
D 1.5 metre

13 What is the maximum length of the tube in flourescent lamp?
A 1 metre
B 1.5 metre
C 2 metre
D 3 metre

14 What is the life of sodium vapour lamp??
A Over 4000 hours
B Over 5000 hours
C Over 6000 hours
D Over 7500 hours

15 Which is the available ratings of HPMV lamp?
A 40W, 60 walts
B 80W, 125 walts
C 100W, 200 watts
D 150W, 300 watts

16 What is the permissible forward voltage drop of LED ?
A 1.7 V to 3 V
B 1 V to 3 V
C 2 V to 3 V
D 1.1 V to 3 V

Questions: Level 2

1 Which material is coated in tungsten electrode of a fluorescent tube lamp?

A Silver oxide
B Phosphor powder
C Fluorescent powder
D Barium and stroatium oxide

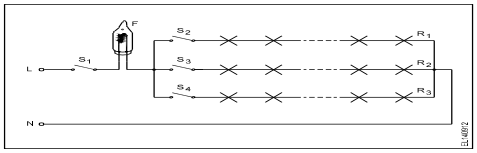
2 Which position MB type high pressure mercury vapour lamps are to be operated?

A Vertical
B Inclined
C Horizontal
D Any position

3 What is the function of leak transformer in high pressure sodium vapour lamp circuit?

A Reduce the starting current
B Increases the working current
C Increase the working voltage
D Ignite the high voltage initially

4 What is the current carrying capacity of flasher, if the current is 100 mA in each row?



A 50 mA
B 100 mA
C 200 mA
D 300 mA

5 What is the purpose of ignitor in high pressure sodium vapour lamp circuit?

A Decreases the starting current
B Increases the running voltage
C Decreases the running current
D Generates high voltage pulse at starting

6 Which device provides ignition voltage and act as choke in a HPSV lamp set ?

A Arc tube
B Sodium vapour
C Leak transformer
D High pressure aluminium oxide

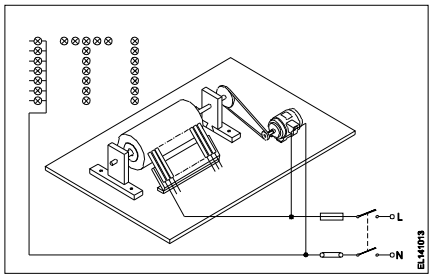
7 Which is the cold cathode lamp?

A Halogen lamp
B Neon sign lamp
C Fluorescent lamp
D Mercury vapour lamp

8 Which is the forward voltage of single colour LED which radiated 'Red' Colour?

A 2.2 V
B 2.1 V
C 2.0 V
D 1.8 V

9 Which determines the length of the drum in a decorative lamp circuit?

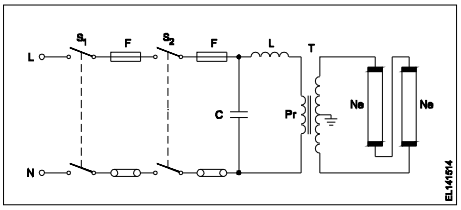


A By the number of finger - strips
B By the way to establish good contact
C By the number of circuits to be incorporated
D By the turn required to make and break contacts

10 What is the shape of neon sign tube electrodes?

A Linear
B Coiled
C Conical
D Cylinderical

11 What is the purpose of the switch 'S_2' in the neon signal lamp circuit?



A Emergency switch
B Main switch
C Stand by switch
D Control switch

12 Which is the range of current that can flow in the 12 mm diameter neon- sign tube?

A 10 mA
B 20 mA
C 50 mA
D 60 mA

13 What is the function of ballast in fluorescent lamp circuit?

A Boost voltage to start the fluorescent tube conducting

B Boost current to start the fluorescent tube conducting

C Reduce voltage to start the fluorescent tube conducting

D Reduce current to start the fluorescent tube conducting

14 Which is the function of starter in fluoresent lamp circuit?

A Improve the power factor of circuit

B Opens the circuit to provide voltage kick for ignition

C Regulates the flow of current to the tube cathodes

D Increase the flow of current to the tube cathode

15 What is the purpose of connecting a capacitor across the electrodes of the starter contacts (bimetals) in fluorescent lamp circuit?

A Eliminate radio interferenc

B Eliminate operating power factor

C Eliminate thickening of lamp

D Eliminated blackening ends of blubs

16 What is the purpose of flasher used in serial lamp circuit ?

A To give twinkling/ flickering light

B To act as a switch for other lamps, but does not give light

C To increase the brightness of all lamps in series

D To protect the bulbs from over voltage

17 Why the low pressure sodium vapour lamp glass tube is bent to 'U' shape ?

A To increase the brightness

B To get more efficiency of illumination

C To limit the size to suit the jacket

D To give good appearance

18 Which quantity of illumination is measured by light meter ?

A Brightness

B Luminance

C Illuminance

D Luminous intensity

19 What is the function of penstocks in hydro power stations?

A Carries water to dam

B Magnetic field into electrical

C Chemical energy into electrical

D Wind energy into electrical

20 What is the advantage of LED over filament blub?

A LED has much longer life than filament bulb

B LEDs can withstand over heat

C LED Requires less maintenance

D LEDs can be switched ON & OFF at slow rate also

Questions: Level 3

1 How stroboscopic effect in industrial twin tube light fitting is reduced?

A Connecting capacitor parallel to supply

B Connecting capacitor in series with supply

C Connecting capacitor in series with one tube light

D Connecting two capacitors in series to each tube light

---

2 How many number of lamps required for a row of 9 volts lamps to be connected in series to the supply volage of 230V. (Assume 5% for fluctuations in supply voltage)

A 26 lamps

B 28 lamps

C 30 lamps

D 32 lamps

---

3 Which is the cause for the fluorescent lamp glows continously, after starter is removed ?

A Flow of electrons inside tube

B Low output voltage of ballast

C Higher output voltage of ballast

D High rated capacitor

---

4 What is the reason that ends of fluorescent lamps become black?

A Defective starter

B Air temperature to low

C Bulb nearly burnt out

D Fixture not adequately grounded

---

5 How the evaporation of tungsten is prevented in halogen lamp ?

A By adding a small amount of iodine gas to the argon gas

B By adding more argon gas

C By coating borium on the tungsten filament

D By reducing the dimension of the tungsten filament

---

6 What is the reason the ends of the bulb glow but centre does not glow?

A Defective startor

B Wrong connection

C Defective filament

D Line voltage too low

---

7 What will happen to the fluorescent lamp if the capacitor across the starter is damaged?

A No effect, function normally

B Filament will be fused

C Will not produce high voltage at starting

D Produce more radio interfernce

---

8 How the surge current of neon lamp is limited?

A RF choke (L) is connected in series with the primary of the leak transformer

B RF choke (L) is connected in parallel with the primary of the leak transformer

C Capacitor is connected across the primary of the transformer

D By disconnecting the choke from the supply

Module 3 : Illuminations - Key paper

Questions: Level 1

SL.No	Key
1	C
2	B
3	D
4	B
5	D
6	C
7	A
8	D
9	D
10	C
11	B
12	C
13	B
14	C
15	B
16	A

Questions: Level 2

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

Question: Level 3

SL.No	Key
1	C
2	B
3	A
4	C
5	A
6	A
7	D
8	A

Electrician - Block 2 - Module 4 : Control Panel Wiring

Questions: Level 1

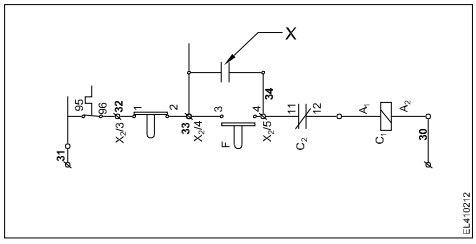
1 Which supply indicates by the colour of conductor exihibited on Red, Blue, Black?

A Supply DC 3 wire system
B Single phase AC system
C Supply AC system 3 phase
D Apparatus AC system 3 phase

2 Which cable ties are used to bunch the wires?

A Silk ties
B P.V.C ties
C Nylon ties
D Cotton ties

3 What is the name of the device marked as 'X'?

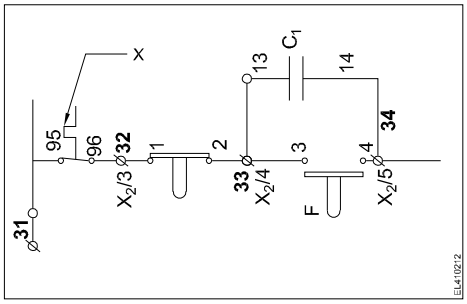


A Stop button
B Start button
C Main contact
D Auxiliary contact

4 What is the name of the wiring accessory used in control panel wiring?

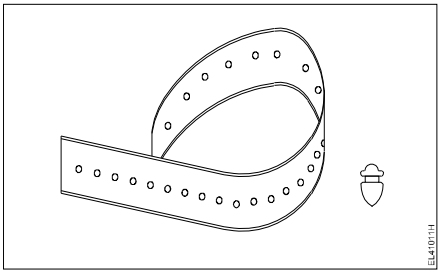
A DIN rails
B G channel
C Grommets
D Race ways

5 What is the name of the device marked 'X' in the cricuit?



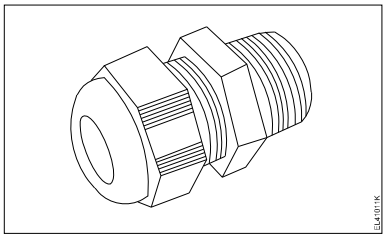
A Contactor
B No volt coil
C Stop button
D Over load relay trip

6 What is the name of the accessory used in control panel wiring?



A Wire ferrules
B Wire sleeves
C Nylon cable ties
D Cable binding strap

7 What is the name of the accessory used in control panel wiring?



A Lugs
B Thimble
C Crommet
D Terminal connector

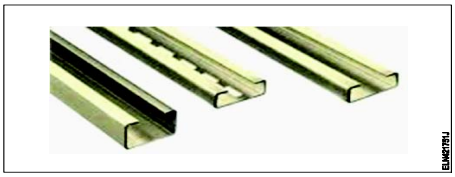
8 What is the name of the component?

A Limit switch
B Contactor
C Relay
D Change over switch

9 Which component made of plastic or rubber or fibre, is used to identify ends of wires?
A Label
B Sleeve
C Ferrule
D Grommet

10 Which is the correct identification marking no. of contacts of auxilary contacts ?
A 1 & 2
B a & b
C 3 & 4
D c & d

11 Identify the control panel accessory?



A PVC channel
B Din rail
C G channel
D Casing

12 How The 'ON' button is to be connected in DOL stator circuit?
A Series with contactor
B Parallel with contactor
C Parallel to trip contact
D Series with hold on contact

Questions: Level 2

1 Which device protects from overload and short circuit in a panel board?

A Isolating switch
B Time delay relay
C Thermal overload relay
D Miniature circuit breaker

2 Which switch with an actuator is operated by the motion of a machine or part of an object?

A Limit switch
B Toggle switch
C Isolating switch
D Push button switch

3 Which switch is operated at OFF load condition?

A Limit switch
B Isolating switch
C Two way switch
D Push button switch

4 What is the reason for providing two separate Earthing in panel board?

A Panel board is made in metal box
B Control the stray field in the panel
C Reduce the voltage drop in panel board
D Ensure one earthing in case of other failure

5 Which circuit, the limit switches are used?

A Lift circuits
B Street lighting
C Motor control circuits
D Domestic power circuits

6 How the control circuit voltage and power in a contactor are to be selected?

A As per rated current
B As per supply voltage
C As per no volt coil rating
D As per the type of supply

7 What is the criteria to select the contactor?

A Type of supply
B Type of load connected
C Supply voltage and load
D Place of use the contactor

8 Which accessory is used to mount MCB,OLR in the panel board without using screws?

A DIN Rail
B G. channel
C Grommets
D PVC channel

9 Which device protects motors from over heating and over loading in a panel board?

A Rectifier
B Limit switch
C Thermal relay
D Electro mechanical relay

10 What is the use of 'G' channels in control panel?

A For fixing relays
B For fixing contactors
C For fixing instruments
D For fixing terminal connectors

11 What is the function of limit switch in control panel wiring?

A Controls machine from over heat
B Controls machine from over speed
C Controls machine from over loading
D Controls distance movement of any machine

12 Which is the correct sequence operation of contactors for operating automatic star delta strarter?

A Main→Star→ Delta→Time
B Star→ Main→Timer→Delta
C Main→Timer→ Delta→Star
D Star→Timer→ Main→Delta

13 Why control panels are provided with control transformer?

A To maintain rated voltage to load
B To operate the auxiliary circuits
C To maintain rated main supply voltage
D To supply reduced voltage to power circuit

14 Which standard duty cycle of the contactor is used in AC motor for hoist operation ?

A AC_1
B AC_2
C AC_3
D AC_4

15 What is the use of PVC channel in a control panel wiring?

A Mounting MCB

B Mounting relays

C Path way for electrical wiring and protection

D Mounting double deck terminal contactor

16 What is the purpose of thermal over load relay in control panel?

A Switching ON/OFF the circuit

B Protect the circuit from earth fault

C Control the circuit based on time delay

D Protect the motor from over heating and loading

17 Which material is used to make open frame bimetallic adjustable thermostat contacts?

A Silver

B Brass

C Copper

D Bronze

18 What is the purpose of DIN-rail used in control panel wiring?

A It provides a path way for electrical wiring

B Install the high powered circuit accessories

C Mounting the double deck terminal connectors

D Mounting the control accessories without screws

19 What is the purpose of control transformer used in control panel wiring?

A For fixing relays

B To supply the power to the auxiliary circuits

C To control the supply voltage to the contactor

D To protect the control elements from over voltage fault

20 Which component prevent strain on cable and prevent dust entry to control panel?

A Grommet

B Sleeve

C Raceway

D De-humidifier

Questions: Level 3

1 How the contacts in a contactor can be engaged for working?

A By manual operation
B By mechanical settings
C By operating electromagnet to change the position
D By using bimetallic strip to change the position

2 Which device prevents flare out of stripped and stranded cables in the panel board?

A Sleeves
B Wire ferrules
C Lugs and thimbles
D Cable binding straps and button

3 How to protect the cable from insects and rats into the panel?

A By using sleeve
B By using crommets
C By using cable binding straps
D By providing nylon cable ties

4 What essential feature to be considered while designing a layout of control panel?

A Proper type of protection and measuring system
B Inside area and number of indicating lights in front panel
C Suitable method of labelling and cable harnessing
D Outside dimensions and swing area of cabinet door

5 Why power and control wirings run in separate race ways?

A To reduce heat
B To reduce the radio interference
C To increase the insulation resistance
D To increase the current carrying capacity

6 Why the motor is not changing the direction,even if reverse push button is pressed in forward and reverse control star delta starter?

A No volt coil is not energized
B Fault in forward contactor
C Due to interlock in reverse contactor
D No voltage exist in reverse contactor

7 What is the reason if DOL starter connected motor stops immediately after switching ON?

A High speed of motor
B Low overload current setting
C Supply frequency incorrect
D Over lubrication

8 What is the cause if contactor coil is failed with overheating?

A Over load in motor
B Over voltage
C Open in contactor coil
D Higher voltage rated coil

9 What happens, if time delay relay of a auto star delta starter still in closed condition after starting?

A Starts and stop
B Runs normally
C Runs in star only
D Runs in delta only

Module 4 : Control Panel Wiring - Key paper

Questions: Level 1

SL.No	Key
1	A
2	C
3	D
4	A
5	D
6	D
7	C
8	A
9	C
10	C
11	C
12	A

Questions: Level 2

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

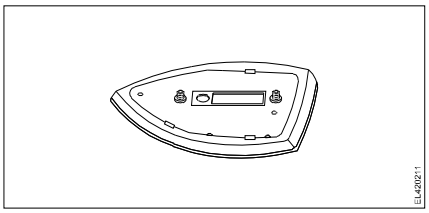
Question: Level 3

SL.No	Key
1	C
2	C
3	B
4	D
5	B
6	C
7	B
8	B
9	D

Electrician - Block 2 - Module 5 : Domestic Appliances

Questions: Level 1

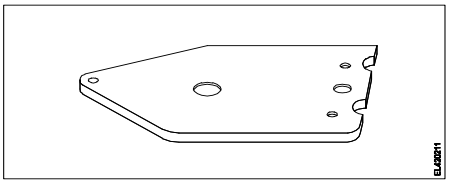
1 What is the name of the part of electric iron?



A Sole plate
B Pressure plate
C Mica insulation
D Asbestos sheet

2 Which formula is used to calculate the heat generated as per Joules law?
A Heat generated = IRT / J cal
B Heat generated = I^2RT / J cal
C Heat generated = IR^2T / J cal
D Heat generated = $(IR)^2$ T / J cal

3 What is name of the part of automatic electric iron shown?



A Sole plate
B Heel plate
C Pressure plate
D Asbostos sheet

4 Where asbestos sheet is fitted in the non-automatic electric iron?
A On the top of the head plate
B On the top of the pressure plate
C Between soleplate and heating element
D Between pressure plate and heating element

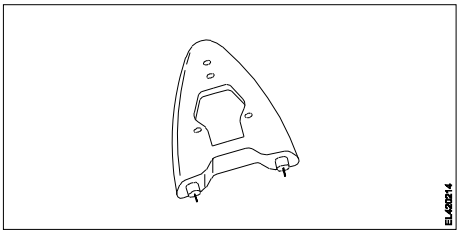
5 What does the letter 'j' represent in the formula $H=I^2RT / j$?
A Temperature constant
B Time constant
C Mechanical equivalent of heat
D Temperature co efficient

6 How the size of the ceiling fan is determined?
A Length of the blades
B No of blades
C Pitch angle of blade
D Sweep

7 What is the frequency of microwave energy in microwave oven ?
A 3500 MHZ
B 3200 MHZ
C 2450 MHZ
D 2200 MHZ

8 Which electric current effect, the electric bell works?
A Lighting effect
B Magnetic effect
C Chemical effect
D Gas ionisation effect

9 What is the name of the part of an electric iron?



A Sole plate
B Heel plate
C Pressure plate
D Soleplate with sealed element

10 What factor the heat produced in a conductor depends?
A Current
B Applied voltage
C Square of current
D Square of voltage

11 Which part is used to regulate the temperature of automatic electric iron?
A Sole plate
B Pressure plate
C Power cord
D Thermostat

12 Which part is used to connect the supply to the electric iron?

A Handle

B Sleeve

C Power cord

D Heating element

13 How much joules (J) is equal to one kilocalories ?

A 1 Kcal = 4817 J

B 1 Kcal = 4781 J

C 1 Kcal = 4178 J

D 1 Kcal = 4187 J

Questions: Level 2

1 Which electrical appliance is used to heat the liquid directly ?

A Kettle
B Toaster
C Room heater
D Immersion heater

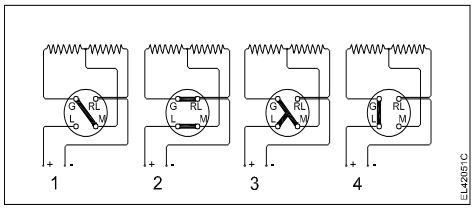
2 Which material is used to make heating element?

A Silver
B Copper
C Nichrome
D Aluminium

3 Which type of A.C single phase motor is used in food mixer?

A Universal motor
B Repulsion motor
C Split phase motor
D Shaded pole motor

4 Which is the position for maximum output of the heater?



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

5 What is the purpose of protection grooves at various places in a heater base plate?

A Radiate the heat properly
B Retain the heating element firmly
C Place the vessels firmly on heater plate
D Protect the heating element from damage

6 What is the purpose of sole plate in electric kettle?

A Acts as a balancing weight
B Acts as an insulator for element
C Protect the kettle base from damage
D Keep the element in close contact with container

7 What is the function of neutral path in AC supply system for appliances?

A Provides current return path
B Provides voltage level constant
C Reduces voltage drop in wiring
D Reduces voltage drop in wiring

8 Which type of motor is used in a electric clock ?

A Hysteresis motor
B Universal motor
C Capacitor start motor
D Capacitor start and run motor

9 In which position is the motor mounted in most of the mixers?

A Vertical
B Horizontal
C Inclined
D Diagonal

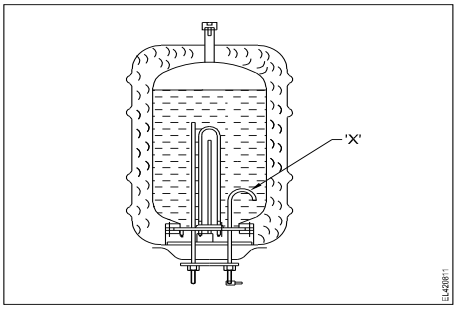
10 What is the purpose of thermostat used in automatic electric iron ?

A Pulsator wash technique
B Tumbler type wash technique
C The agitator wash technique
D The air power wash technique

11 Which type of wash technique washing machine has a concave shape disc used to rotate the cloth in water ?

A Pulsator wash technique
B Tumbler type wash technique
C The agitator wash technique
D The air power wash technique

12 What is the purpose of U bend marked as 'X' in geyser?



A Prevents draining of water
B Avoids the forming of scales
C Reduces the pressure of outlet pipe
D Restricts the air locking inside the tank

13 Which heat detector is provided with bi-metal strip?

A Fusion detector
B Ionisation detector
C Electrical sensing detector
D Thermal expansion detector

14 Which heat detector is provided with low melting point alloy?

A Fusion detector
B Ionisation detector
C Electrical sensing detector
D Thermal expansion detector

15 Where heating element is fixed in a non-automatic electric iron?

A Heel plate
B Sole plate
C Pressure plate
D Asbestos sheet

16 Why asbestos sheet is provided in non automatic electric iron?

A To increase the life of the heating element
B To increase the insulation resistance of heating element
C To reduce the heat being transferred to the top cover
D To increase working temperature of heating element

17 Where asbestos sheet is placed in a electric kettle?

A Above the sole plate
B Above the pressure plate
C Above the heating element
D Below the heating element

18 Calculate the current required to produce a heat of 36 K.cal in 10 minutes the resistance is 10 ohms?

A 3A
B 5A
C 6A
D 8A

19 How much the amount of heat is varied if the current is increased to 2 times?

A No change
B Increase ¼ time
C Negligible increase
D Increase double time

20 Why nichrome wire is used as a heating element for high temperature heaters?

A Low resistance
B Without oxidise
C Produce more heat
D Low power consumption

21 Why procelain is used to place the heating element in exposed type heater?

A Easy maintanance
B Increase the heater efficiency
C Withstand heat without brittle
D Act as a good insulator at high temperature

22 How the speed is regulated in a table fan?

A By using a series resistor
B By tapping the field winding
C By using a capacitor
D By field divertor

23 Where the stator windings are placed in a table fan?

A On crank disc shaft
B In slots of the laminated iron core
C In the oscillating unit
D In the vertical spindle

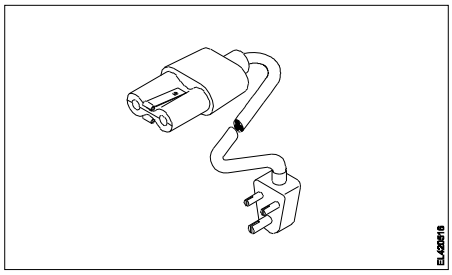
24 How is the sweep of ceiling fan is determined?

A Diameter of the circle to be formed by one rotation
B Distance from the centre of the fan to tip of blade
C Distance of the length of the blade
D Distance of the width of the blade

25 How the capacitor is connected in a ceiling fan?

A In series with the main winding
B In series with the auxiliary winding
C In parallel with main winding
D In parallel with auxiliary winding

26 What is the use of spring loaded metallic clip in heater socket ?



A To hold the socket tightly
B To increase the contact area
C To increase the insulation resistance
D To give earth connection to heater body

27 Which type of A.C single phase motor is used in ceiling fans?
A Split phase motor
B Shaded pole motor
C Permanent capacitor motor
D Capacitor start induction motor

28 What is the advantage of using electronic regulators for ceiling fan?
A No power loss
B No voltage drop
C Easy maintenance
D Provides stepped speed control

Questions: Level 3

1 What is the fault in a food mixer if it runs intermittently?

A Worn out brushes
B Armature coil open
C Defective commutator
D Field winding partially short

2 What is the defect in a single phase pump motor if it runs with slow speed?

A Defective capacitor
B Open starting winding
C Short in starting winding
D Short in running winding

3 Which fault is caused due to winding makes electrical contact with the metal case of the mixer motor ?

A ground fault
B open circuit fault
C short circuit fault
D loose connected

4 What is the reason If a pump set motor operates satisfactorily at no load but loses power and speed at full load ?

A A dead short circuit
B An open circuit
C The voltage is too high
D There is a partial short circuit

5 What is the most noticeable indication of a worn out centrifugal switch?

A High temperature of the motor
B Distinctive colour at contact points
C Noise while operation
D Erratic starting with chattering noise

6 Which is the sympton for the fault , if the armature winding is opened in a mixer motor ?

A High speed of the mixer
B Low speed of the mixer
C High operating temperature
D Mixer does not start and run

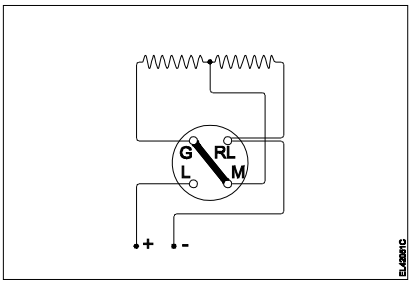
7 Why automatic electric iron fails to turn OFF automatically?

A Open earth connection
B Low voltage
C Thermostat switch contact welded together
D Open heating element

8 What will happen, if immersion heater is switched ON without water?

A Fuse blown out
B Metal tube burst
C Heated up normally
D Heated up normally

9 What is the out put of heat in a twin unit type hot plate, if the elements are connected as in figure ?



A OFF
B Low
C High
D Medium

10 What is the cause for the defect, if a food mixer does not run?

A Worn out brushes
B Improper coupling
C Loose mounting screws
D Poor insulation resistance

11 What is the defect, if mixer makes more noise?

A Loose brushes
B Worn out bearing
C Uneven commutator surface
D Partially burnt out field winding

12 What happens, if the flush type SPT switch is used, instead of bell push switch in bell circuit ?

A Bell will not ring
B Bell coil heat up
C Bell sound increases
D Bell damages instantly

13 Which is the cause to stop the rotation of drier in semi automatic washing machine?

A Lid switch is opened
B Direction of supply changes
C Drier motor overloads
D Capacitor gets charged

Module 5 : Domestic Appliances - Key paper

Questions: Level 1

SL.No	Key
1	A
2	B
3	D
4	D
5	C
6	D
7	C
8	B
9	D
10	C
11	D
12	C
13	D

Questions: Level 2

SL.No	Key
1	D
2	C
3	A
4	B
5	B
6	D
7	A
8	A
9	A
10	B
11	A
12	A
13	B
14	C
15	C
16	C
17	B
18	B
19	B
20	C
21	C
22	A
23	B
24	A
25	B
26	D
27	C
28	A

Question: Level 3

SL.No	Key
1	A
2	A
3	A
4	D
5	D
6	D
7	C
8	B
9	A
10	A
11	B
12	B
13	A

Electrician - Block 2 - Module 6 : Transmission - Cable - Breaker

Questions: Level 1

1 Which fuel is available in plenty in India for power generation?

A Coal
B Diesel
C Gas oil
D Gasoline

2 Which is the conventional power generation?

A Wind power generation
B Tidal power generation
C Solar power generation
D Thermal power generation

3 What is the name of the atomic material used for nuclear fission in nuclear power station?

A Silicon
B Thorium
C Antimony
D Cadmium

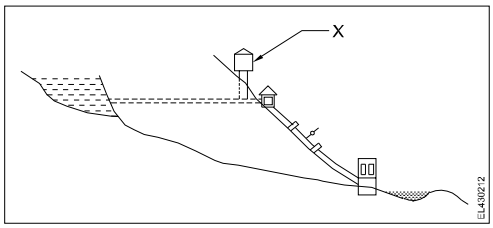
4 Which is the non conventional energy source?

A Wind
B Water
C Steam
D Diesel

5 Which is the natural source of energy?

A Sun
B Heat
C Coal
D Biogas

6 Name the constituent marked 'X' of the schematic arrangement of hydro electric plant?



A Penstock
B Surge tank
C Valve house
D Power house

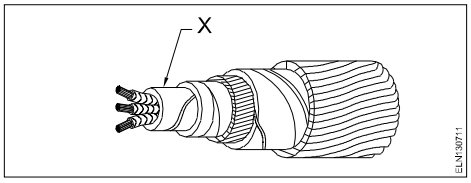
7 Which is a non-conventional energy source?

A Lignite
B Sun rays
C Stored water
D Pulverized coal

8 What is the full form of "XLPE' Cable?

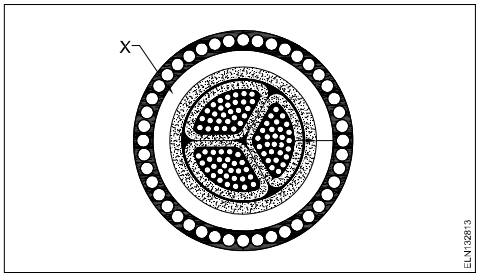
A Cross Line Poly Ethylene
B X'ess Line Phase Earthing
C Cross Linked Poly Ethylene
D Excess Length Paper and Ebonite

9 What is the name of the part marked 'X' in UG cables?



A Serving
B Bedding
C Armouring
D Lead sheath

10 Name the part marked 'X' of belted U.G cable?



A Jute filling
B Armouring
C Lead sheath
D Paper insulation

11 Which electric lines connect the substation to distributors in distribution system?

A Feeders
B Distributors
C Service lines
D Service mains

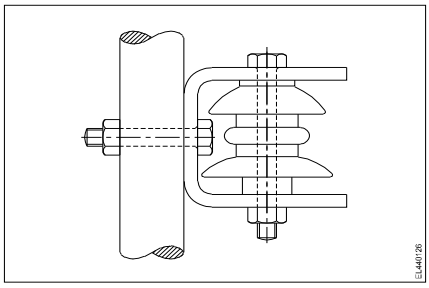
12 What is the insulation resistance between any two conductors in a medium voltage domestic installation as per IE rules?

A Infinity
B More than one Mega ohm
C More than two Mega ohms
D More than three Mega ohms

13 What is the voltage range in A.C distribution line adopted for domestic consumers?

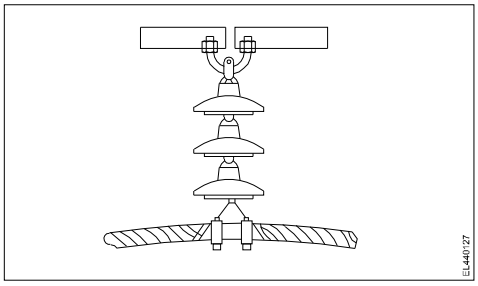
A 415 V/240 V
B 240 V/110 V
C 415 V/110 V
D 11 KV/415 V

14 What is the name of the insulator used in O.H lines?



A Pin insulator
B Post insulator
C Strain insulator
D Shackle insulator

15 What is the name of line insulator?



A Pin type insulator
B Disc type insulator
C Shackle type insulator
D Suspension type insulator

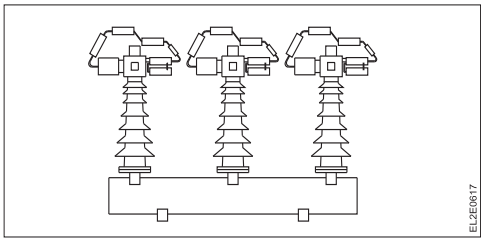
16 Which is the permissble load for lighting sub circuit in domestic wiring as per IE rules?

A 800 W
B 1200 W
C 2400 W
D 3000 W

17 Which circuit breaker is installed along with wiring circuit against leakage current protection?

A OCB
B MCB
C ELCB
D MCCB

18 What is the name of circuit breaker?



A Oil circuit breaker
B Air blast circuit breaker
C Vacuum circuit breaker
D Air break circuit breaker

19 What is the name of conductor used on overhead lines?

A ACSR
B Aluminium
C Galvanised iron
D Hard drawn copper

20 What is ACSR stands for?

A All Conductors Steel Reinforced
B Aluminium Core Steel Reinforced
C Aluminium Covered Steel Reinforced
D Aluminium Conductor Steel Reinforced

Questions: Level 2

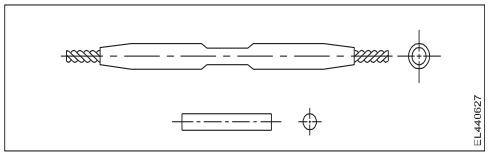
1 What is the reason for the conductor cross-sectional area can fully utilised on transmission of DC as compared to AC?

A No heat loss
B No skin effect
C No power loss
D No corona loss

2 Why the disc pin insulators outer surface is made by glazing and bent the sides inward?

A To withstand high voltage
B Not to attract birds to sit on it
C To offer high mechanical strength
D Disables continuous water flow in rainy season

3 What is the type of over head line joint?



A Twisted joint
B Straight sleeve joint
C Compression joint for ACSR
D Straight joint through connectors

4 Why steel is reinforced in ACSR conductors used for over head lines?

A To minimize the line sag
B To reduce the line voltage drop
C To increase the tensile strength
D To increase the current carrying capacity

5 Which type of A.C transmission is universallly adopted?

A Two phase four wire
B Two phase three wire
C Single phase two wire
D Three phase three wire

6 Which type of line insulator is used for terminating on corner post?

A Pin insulator
B Strain insulator
C Shackle insulator
D Suspension insulator

7 What is the reason of keeping binding wire gap too close and very tight in pin insulator?

A Avoid sparking
B Avoid corrosion
C Avoid oxide formation
D Avoid atmospheric pressure

8 Which type of line insulators are used for cold climate ?

A Fog type insulator
B Pin type insulator
C Shackle type insulator
D Stream insulator

9 What is the main purpose of crossarm used in electric poles?

A Supporting the line conductors
B Holding the insulators on overhead line
C Avoids short circuit between conductors
D Reduces conductor sag between supports

10 Which type of line insulator is used at the dead ends of the H.T overhead lines ?

A Pin insulator
B Disc insulator
C Stay insulator
D Post insulator

11 What is the advantage of AC power transmission?

A Corona loss negligible
B Stress on transmission lines is minimum
C Low voltage drop in transmission lines
D Voltages can be stepped up and stepped down easily

12 What is the advantage of corona effect on O.H conductors?

A Increase the transmission efficiency
B Avoids corrosion on the conductors
C Reduces the inductive interference with adjacent conductor
D Reduce the electrostatic stress between conductors

13 What is the purpose of stay wire used in poles ?

A To release the tension of insulation
B To mount line condutors firmly
C To protect from lighting
D To prevent the bending of the poles

14 What is the advantage of over head lines compared to underground cable?

A Public safety is more
B Faults can be located easily
C No interference with the communication lines
D Not liable to the hazards from lightning discharges

15 Which substation the transmission line voltage is stepped down to consumer supply voltage?

A Mobile substation
B Mining substation
C Secondary substation
D Distribution substation

16 What is the main disadvantage of non-conventional power generation?

A Poor efficiency
B No constant generation
C Can use only light loads
D Heavy load cannot be operated

17 Which power generation requires heavy water treatment plant?

A Hydel power generation
B Diesel power generation
C Solar power generation
D Nuclear power generation

18 Which turbine is used for high heads in hydro electric power plant?

A Kaplan turbine
B Impulse turbine
C Francis turbine
D Reaction turbine

19 What is the function of penstocks in hydro power stations?

A Carries water to dam
B Carries water to turbines
C Carries water away from power house
D Discharges surplus water from reservoir

20 Which is the purpose of boiler in a steam power station?

A Super heats the steam
B Heats feed water and air
C Converts water in to steam
D Liberates the heat from burnt fuel

21 Which type of power plant is more efficient?

A Diesel plant
B Steam power
C Hydro electric
D Nuclear power

22 Which material is used as control rod in a nuclear reactor?

A Thorium
B Graphite
C Cadmium
D Tungsten

23 What is the function of air pre heater in a steam power station?

A Heats feed water
B Supplies hot air to economiser
C Supplies hot air to super heater
D Extracts heat from flue gases and heats input air

24 What is the disadvantage of nuclear plant?

A Disposal of waste
B Running cost is more
C Plant requires large space
D Installed near the load centre

25 What is the function of economiser in steam power plant?

A Converts water into steam
B Heats the air by the flue gases
C Heats the feed water by the flue gases
D Purifies the feed water by chemical treatment

26 Which component in a steam power plant is used to heat the feed water from the flue gas?

A Boiler
B Economizer
C Super heater
D Air pre heater

27 Which is the disadvantage of non conventional power generation over conventional power generation?

A Increase pollution
B Security risk is more
C Requires more maintenance
D Cannot be used for base load demand

28 What is the advantage of non-conventional energy source?

A More reliable
B Low initial cost
C Efficiency is high
D Green house effect is avoided

29 What is the purpose of ‘serving’ layer in underground cable?

A Protect the cable from moisture
B Protect the cable from mechanical injury
C Protect metallic sheath against corrosion
D Protect armouring from atmospheric condition

30 Which cable laying method is used in generating station?

A In ducts
B Racks in air
C Along buildings
D Direct in ground

31 Which method of cable laying is suitable for congested areas?

A Racks in air
B Duct pipes
C Along buildings
D Direct in ground

32 Which part of the underground cable is protecting the metallic sheath against corrosion?

A Serving
B Bedding
C Armouring
D Lead sheath

33 What is the purpose of bedding insulation of U.G. cable?

A Protect the cable from mechanical injury
B Protect the cable from moisture and gases
C Protect armouring from atmospheric condition
D Protect the metallic sheath against corrosion

34 Which test is conducted to locate the faults in U.G. cables?

A Loop test
B External growler test
C Break down voltage test
D Insulation resistance test

35 What is the function of Buchholz relay in power transformer?

A Over load and short circuit protection
B Over voltage and earth fault protection
C Open circuit and earth fault protection
D Open circuit and over voltage protection

36 Which circuit breaker is used as a switch and protective device in the domestic wiring circuit?

A Air circuit breake
B Miniature circuit breaker
C Moulded case circuit breaker
D Earth Leakage circuit breaker

37 What is the purpose of trip coil used in circuit breakers?

A Easy operation
B Remote operation
C Accurate operation
D Emergency operation

Questions: Level 3

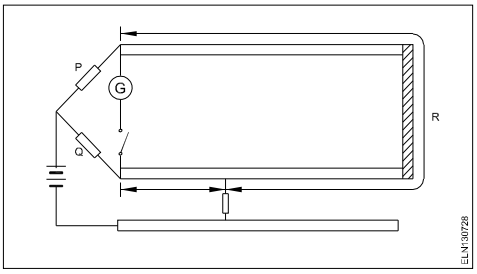
1 How the potential energy from water flowing is converted as kinetic energy to generate power?

A By storing water in high quantity
B By using surge tanks at the water canal
C By using water turbine to drive alternator
D By creating high head through penstocks

2 What is the effect of radio active rays produced during nuclear fission?

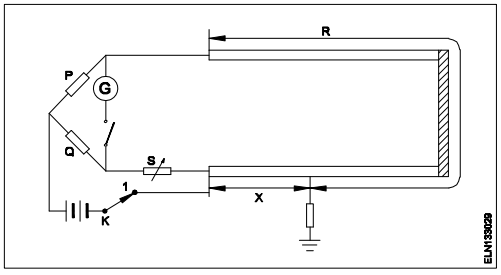
A Damages the reactors
B Creates health hazards
C Reduces fission process
D Enormous heat is produced

3 Which type of fault of U.G Cable can be located by this loop test?



A ground fault
B Short circuit fault
C Open circuit fault
D Weak insulation fault

4 What is the fault of U.G cable identified in the circuit?



A Ground fault
B Short circuit fault
C Open circuit fault
D Weak insulation fault

5 What will happen to the string arrangement of disc insulators, if one of the disc insulator gets damaged?

A Whole string become useless
B No effect operates normally
C Only the damaged disc will not function
D Damaged insulator and the adjacent insulator will not function

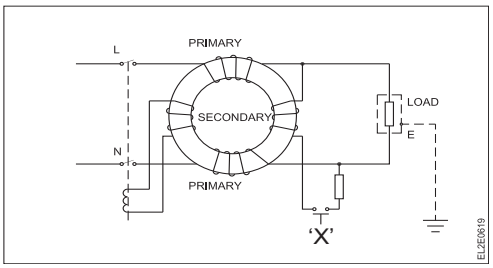
6 How the sparking on the aluminium cored conductors binding joints can be prevented?

A Keeping binding turns very close
B Making binding turns very tight
C Providing guard wires below the conductors
D Providing more than one binding

7 What will happen to the skin effect on the O.H conductors, if the conductor diameter is small (<1cm)?

A Becomes negligible
B Increases to maximum
C No effect, remain same
D Decreases half of the value

8 What is the effect, if the test button marked as 'X' is closed permanently in ELCB?



A Circuit trips intermittently
B Circuit functions normally
C Circuit switch OFF completely
D Circuit will not trip on leakage

9 What is the defect in an air circuit breaker, if trips intermittendely on loading?

A Incorrect setting of relay
B Excessive heat
C Insufficient air pressure
D Line voltage is too high

10 What is the defect in a oil circuit breaker if the oil heats up excessively?

A Line voltage is too high
B Excessive load
C Poor dielectric strength
D Defective tripping mechanism

11 What is the cause for the defect if phase to ground fault on the transmission line?

A Components failure

B Insulation failure

C Human error

D Fuse failure

Module 6 : Transmission - Cable - Breaker - Key paper

Questions: Level 1

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

Questions: Level 2

SL.No	Key
1	B
2	D
3	C
4	C
5	D
6	C
7	A
8	A
9	B
10	B
11	D
12	D
13	D
14	B
15	D
16	A
17	D
18	B
19	B
20	C
21	C
22	C
23	D
24	A
25	C
26	B
27	D
28	D
29	D
30	B

SL.No	Key
31	B
32	B
33	D
34	A
35	A
36	B
37	B

Question: Level 3

SL.No	Key
1	D
2	B
3	B
4	A
5	C
6	B
7	A
8	C
9	A
10	C
11	B