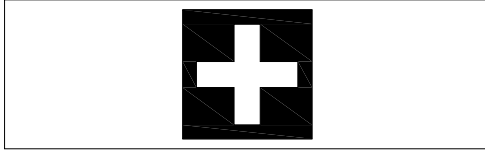


Electrician 1st Semester – Module 1: Safety Practice and Hand Tools

Questions : Level 1

1 What is the name of the safety sign?



- A Warning sign
- B Mandatory sign
- C Prohibition sign
- D Information sign

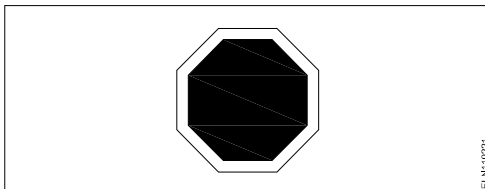
2 What is smothering in extinguishing of fire?

- A Adding the fuel element to the fire
- B Removing the fuel element from the fire
- C Using of water to lower the temperature
- D Isolating the fire from the supply of oxygen

3 Which step of the 5s-concept refers "Standardization"?

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

4 What is the name of road safety sign?



- A Mandatory sign
- B Cautionary sign
- C Informatory sign
- D Prohibition sign

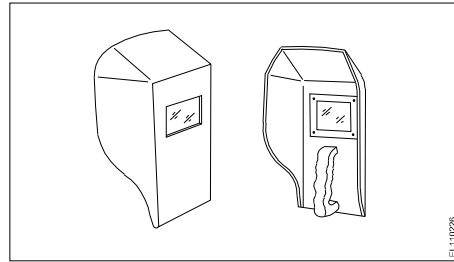
5 What is the back ground colour of warning signs in the basic category?

- A Blue
- B White
- C Yellow
- D Green

6 What is the full form of BIS?

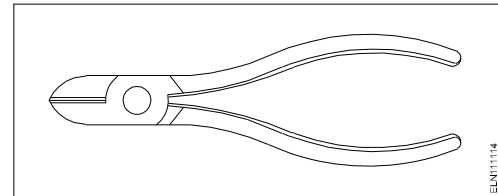
- A Board of Indian Standard
- B Bureau of Indian Standard
- C Board of International Standard
- D Bureau of International Standard

7 What is the name of PPE?



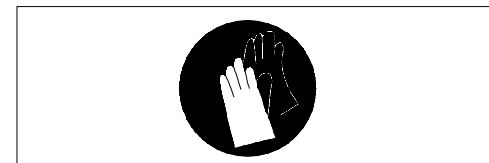
- A Nose mask
- B Head shield
- C Face shield
- D Hand screen

8 What is the name of the tool?



- A Wire stripper
- B Crimping tool
- C Combination pliers
- D Diagonal cutting pliers

9 What is the name of the safety sign?



- A Warning sign
- B Mandatory sign
- C Prohibition sign
- D Information sign

10 What is the name of the cautionary sign?

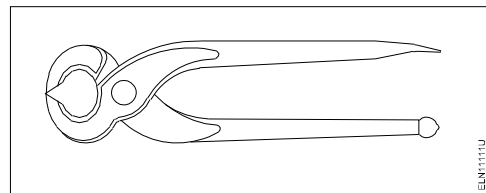


- A School
- B Guarded
- C Unguarded
- D Pedestrian crossing

Questions : Level 2

- 1 Which is the physical hazard?
A Smoking
B Vibration
C Corrosive
D Radio active
-
- 2 Which is the correct sequence of operation to be performed when using the fire extinguisher?
A Pull, Aim, Squeeze, Sweep
B Pull, Aim, Sweep, Squeeze
C Push, Arrange, Squeeze, Sweep
D Push, Arrange, Sweep, Sequenc
-
- 3 Which plier is used for making wire hooks and loops?
A Flat nose plier
B Long nose plier
C Round nose plier
D Diagonal cutting plier
-
- 4 What is the use of pincer?
A Twisting the flexible wires
B Cutting small diameter of wires
C Extracting the pin nails from the wood
D Holding small objects, where finger cannot reach
-
- 5 Which type of fire extinguisher is used for fire on electrical equipment?
A Halon type
B Foam type
C Gas cartridge type
D Stored pressure type
-
- 6 Which is the waste disposal method that produces heat?
A Recycling
B Composting
C Incineration
D Waste compaction
-
- 7 Which Personal Protective Equipment (PPE) is used for the protection from fumes?
A Apron
B Goggles
C Ear mask
D Nose mask
-
- 8 Which method is used to lift and move heavy loads?
A Winches
B Crane and slings
C Layers and Rollers
D Machine moving platforms
-

- 9 What is starving in extinguishing of fire?
A Adding fuel to the fire
B Using water to cool the fire
C Removing fuel element from the fire
D Preventing oxygen supply to the fire
-
- 10 Which disposal method of waste save lot of energy?
A Land fill
B Recycling
C Incineration
D Composting
-
- 11 Which artificial respiration method is to be performed to the victim with injuries on the chest and belly?
A Schafer's method
B Mouth to mouth method
C Mouth to nose method
D Nelson's arm-lift back pressure method
-
- 12 Which type of occupational health hazard is cause for infection?
A Electrical hazard
B Biological hazard
C Physiological hazard
D Psychological hazard
-
- 13 What is the use of this tool?



- A Holding the hot substances
B Cutting and twisting the wires
C Extracting nails from the wood
D Loosening and tightening the bolts and nuts
-
- 14 How will you diagnose the victim is suffering under cardiac arrest?
A Gets pain in spinal guard
B Mouth will be closed tightly
C Heavy swelling on his stomach
D Appears blue colour around his lips
-
- 15 What will be first-aid to be given to stop the bleeding of the victim?
A Applying ointment
B Keep the injured portion upward
C Covering the wound portion by dressing
D Applying pressure over the injured portion
-

16 Which is the golden hour for the victim injured on head with risk of dying?

- A** First 15 minutes
- B** First 30 minutes
- C** First 45 minutes
- D** First 60 minutes

17 Which condition of the victim is referred as COMA stage?

- A** Unconscious but can respond to calls
 - B** Conscious but cannot respond to calls
 - C** Breathing but cannot respond to calls
 - D** Lie totally senseless and do not respond to calls
-

Questions : Level 3

- 1 What immediate action should be taken to rescue the victim, if he is still in contact with the electrical power supply?
- A Pull or push him from the contact by hand
 - B Inform your authority about this electric shock
 - C Call someone for helping to remove him from contact
 - D Break the contact by switching OFF the power supply
-

Module 1: Safety Practice and Hand Tools - Key paper

Questions: Level 1

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

Questions: Level 2

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

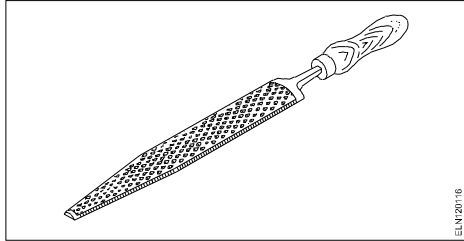
Questions: Level 3

SL.No	Key
1	D

Electrician 1st Semester - Module 2 : Basic Workshop Practice (Allied Trade)

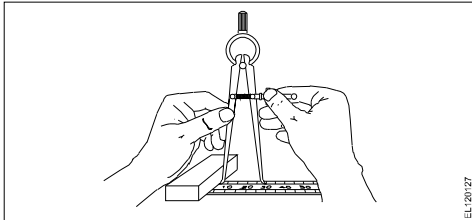
Questions: Level 1

1 What is the name of the file?



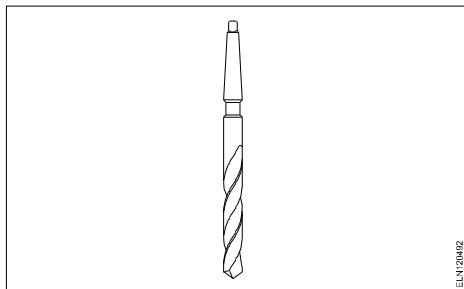
- A Rasp cut file
- B Single cut file
- C Double cut file
- D Curved cut file

2 What is the name of the tool?



- A Divider
- B Inside caliper
- C Odd leg caliper
- D Outside caliper

3 What is the name of the drill bit?



- A Flat drill bit
- B Taper shank bit
- C Countersink bit
- D Straight shank bit

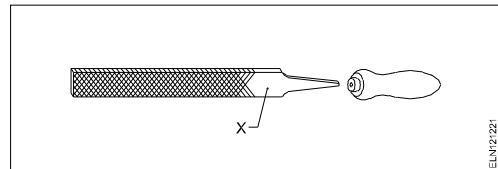
4 What is the name of the stake used for general purpose in sheet metal work?

- A Square stake
- B Hatchet stake
- C Blow horn square stake
- D Bevel edge square stake

5 What is the number 1.25 indicates in ISO metric fine thread M12 x 1.25.?

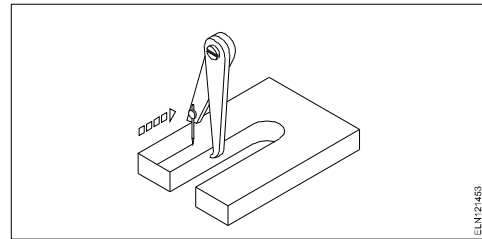
- A Diametric of the thread
- B Pitch of the thread
- C Depth of the thread
- D Length of the thread

6 Name the part marked 'X' of the file.



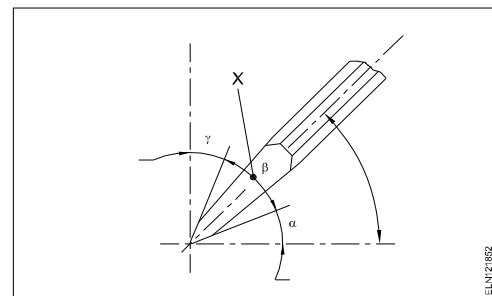
- A Edge
- B Heel
- C Tang
- D Shoulder

7 What is the name of the tool?



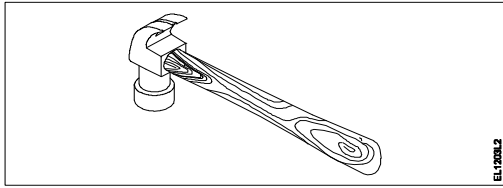
- A Jenny caliper
- B Inside caliper
- C Outside caliper
- D Firm joint caliper

8 What is the name of the angle marked 'X' of the chisel?



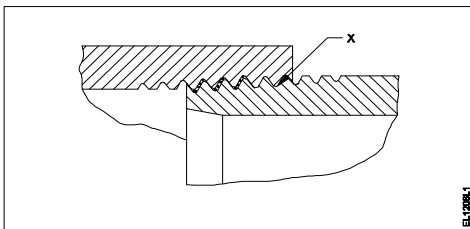
- A Rake angle
- B Point angle
- C Clearance angle
- D Inclination angle

9 What is the name of tool?



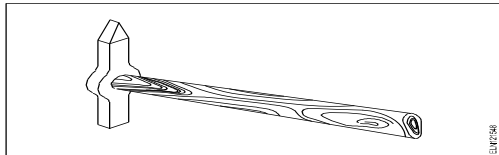
- A Claw hammer
- B Ball pein hammer
- C Cross pein hammer
- D Straight pein hammer

10 What is the name of the formation of thread marked as 'X' in the galvanized sheet pipe joint?



- A Hemp
- B Full form thread
- C Tapered male thread
- D Parallel female thread

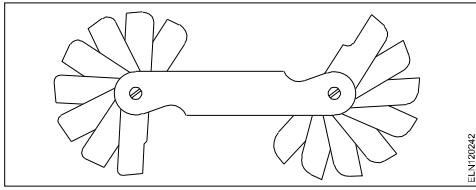
11 What is the name of tool?



- A Claw hammer
- B Tacks hammer
- C Cross pein hammer
- D Straight pein hammer

Questions: Level 2

1 What is the use of this gauge?



- A Check the internal radius of the job
- B Check the diameter of cylindrical job
- C Check the height and parallelism of job
- D Set the job on machines parallel to datum

2 What is the cause for twisting defect in timber?

- A Defective storage
- B Uneven shrinkage
- C Improper seasoning
- D Irregularity in growth of branches

3 What is the use of mortise chisel?

- A General chiseling work in wood
- B Making rectangular holes in wood
- C Paring and finishing joints in wood
- D Light chiseling cleaning sharp corners and in wood

4 Which type of stake is used for sharp bends in sheet metal?

- A Square stake
- B Hatchet stake
- C Blow horn stake
- D Bevel edge square stake

5 Which type of cold chisel is used for squaring materials at the corners?

- A Web chisel
- B Cross cut chisel
- C Half round chisel
- D Diamond point chisel

6 Which type of caliper is used to draw parallel lines along the outer edges of the materials?

- A Inside caliper
- B Jenny caliper
- C Outside caliper
- D Spring joint caliper

7 Which file is used for sharpening the blunt teeth of a tenon saw?

- A Square file
- B Round file
- C Triangular file
- D Half round file

8 What is the use of firmer chisel?

- A Paring and finishing joints
- B General chiseling work
- C Making rectangular holes in wood
- D Light chiseling and to clean sharp corner

9 Which type of half lap joint is used if one part of a job meets another part at some distance from the ends?

- A End-lap input
- B Cross-lap joint
- C Middle-lap joint
- D Corner-half lap joint

10 Which type of notch is used for making a metal tray with 90° bend and an inside flange?

- A 'V' notch
- B Slant notch
- C Square notch
- D Straight notch

11 What is the purpose of hem folding in sheet metal work?

- A Helps for forming a square box
- B Helps for bending sheet metal easily
- C Prevents burrs forming after cutting
- D Prevents the sheet from damage

12 Which defect in timber is caused due to improper seasoning?

- A Knot
- B Twisting
- C Cracking
- D Cupping

13 Which type of notch is used for bending the edge of the sheet?

- A 'V' notch
- B Slant notch
- C Square notch
- D Straight notch

14 What is the purpose of cross cut cold chisel?

- A Cutting keyways
- B Cutting curved grooves
- C Squaring materials at corners
- D Removing metal from large flat surface

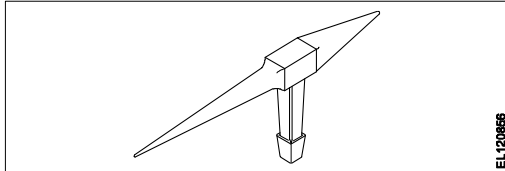
15 Which type of notch is used to make a job with 90° bend?

- A 'V' notch
- B Slant notch
- C Square notch
- D Straight notch

16 Which type of curve cutting hand saw is used for internal cutting in wood?

- A** Compass saw
- B** Key hole saw
- C** Coping saw
- D** Fret saw

17 What is the name of the stake used for sheet metal work?



- A** Square stake
- B** Hatchet stake
- C** Blow-horn stake
- D** Bevel-edge square stake

18 Which type of chisel is used for separating metals after chain drilling?

- A** Flat chisel
- B** Web chisel
- C** Cross cut chisel
- D** Diamond point chisel

19 Which type of stake is used for riveting or seaming tapered cone shaped articles?

- A** Square stake
 - B** Hatchet stake
 - C** Blow horn stake
 - D** Bevel edged square stake
-

Questions: Level 3

1 What defect will occur in timber due to irregularity in growth of the branches?

- A Knot
- B Cupping
- C Cracking
- D Twisting

2 Which defect in the timber is caused to reduce its strength?

- A Twisting
- B Cupping
- C Cracking
- D Irregularity

3

Which cause knot defect in timbers?

- A Defective storage
 - B Uneven shrinkage
 - C Growth of branches
 - D Improper seasoning
-

Module 2: Basic Workshop Practice (Allied Trade) - Key paper

Questions: Level 1

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

Questions: Level 2

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

Questions: Level 3

SL.No	Key
1	A
2	D
3	C

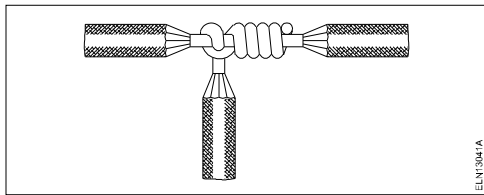
Electrician – 1st Semester – Module 3 : Wire - Joints, Soldering, U.G. Cables

Questions : Level 1

1 What is the possible range to measure the size of the wire in a Standard Wire Gauge (SWG)?

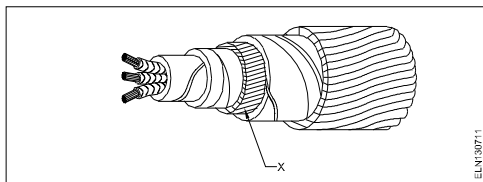
- A 0-44
- B 0-42
- C 0-38
- D 0-36

2 What is the name of the wire joint?



- A Aerial tap joint
- B Knotted tap joint
- C Duplex cross tap joint
- D Double cross tap joint

3 What is the name of the part marked as 'X' in the under ground (UG) cable?



- A Bedding
- B Armouring
- C Lead sheath
- D Paper insulation

4 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

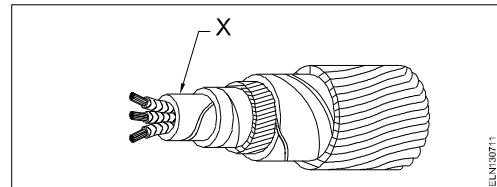
5 How many electrons are there in the valence shell of a copper atom?

- A 1
- B 2
- C 8
- D 18

6 What is the unit of insulation resistance?

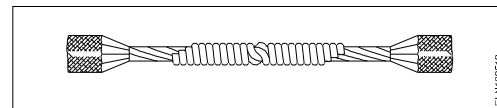
- A Ohm
- B Kilo ohm
- C Milli ohm
- D Mega ohm

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



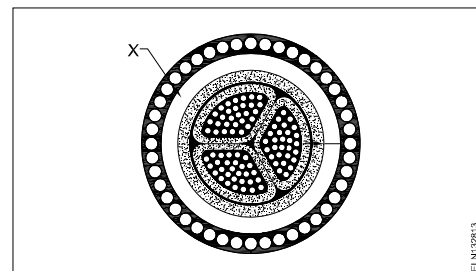
- A Serving
- B Bedding
- C Armouring
- D Lead sheath

8 What is the name of the joint?



- A Married joint
- B Scarfed joint
- C Western union joint
- D Britannia straight joint

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



- A Jute filling
- B Armouring
- C Lead sheath
- D Paper insulation

10 What does the number 1.40 represent if a stranded conductor is designated as 10 sq.mm cable of size 7/1.40?

- A Area of cross section
- B Radius of one conductor
- C Diameter of all conductor
- D Diameter of each conductor

11 What is the value of electrical conductivity of aluminium conductor?

- A 61 mho/m
- B 56 mho/m
- C 35 mho/m
- D 28 mho/m

12 What is the rating factor of cable provided with coarse excess current protection?

- A 1.11
- B 1.23
- C 0.81
- D 0.707

13 What is the size of neutral conductor compared to phase conductor in U.G cable?

- A Same size of phase conductor
- B Half size of phase conductor
- C 1/4 size of phase conductor
- D 1/3 size of phase conductor

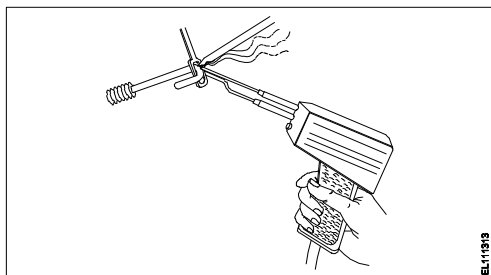
14 What is the name of the tool?

- A Cutting plier
- B Wire stripper
- C Crimping tool
- D Side cutting plier

15 What is the unit for Quantity of electricity?

- A Mho
- B Coulomb
- C Volt /second
- D Ampere/second

16 What is the name of the soldering method?



- A Dip soldering
- B Soldering iron
- C Soldering gun
- D Soldering with flame

17 What formula is used to find Electro Motive Force (EMF)?

- A $EMF = \text{Potential difference} - \text{voltage drop}$
- B $EMF = \text{Potential difference} + \text{voltage drop}$
- C $EMF = \text{Potential difference} + \text{voltage drop}/2$
- D $EMF = \text{Potential difference} + 2 \times \text{voltage drop}$

18 What is the current rating factor for close excess current protection of cable?

- A 0.81
- B 0.92
- C 1.23
- D 1.5

19 What is the name of the soldering method?

- A Dip soldering
- B Soldering with blow lamp
- C Soldering with soldering gun
- D Temperature controlled soldering

Questions : Level 2

- 1 What is the current carrying capacity of 32 amp.rated cable, if it is protected by the rewirable fuse?
- A 13 Amp
B 16 Amp
C 26 Amp
D 39 Amp
-
- 2 Which type of soldering flux is used for soldering galvanised iron?
- A Rosin
B Zinc chloride
C Sal ammonia
D Hydrochloric acid
-
- 3 Which method of soldering is used for quantity production and for tinning work?
- A Dip soldering
B Soldering with a flame
C Soldering with soldering iron
D Soldering with soldering gun
-
- 4 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
-
- 5 Which cable laying method is used in generating station?
- A In ducts
B Racks in air
C Along buildings
D Direct in ground
-
- 6 What is the effect of electric current on neon lamp?
- A Heating effect
B Magnetic effect
C Chemical effect
D Gas ionization effect
-
- 7 Which electrical device is the coarse excess current protection?
- A Cartridge fuses
B Rewirable fuses
C Miniature Circuit Breaker (MCB)
D High Repturing Capacity (HRC) Fuses

- 8 Which type of joint is used for extending the length of conductor in over head lines?
- A Scarfed joint
B Aerial tap joint
C Britannia "T" joint
D Western Union joint
-
- 9 Which type of soldering flux is used for soldering aluminum conductors?
- A Tallow
B Ker-al-lite
C Zinc chloride
D Sal ammonia rosin
-
- 10 What is the effect on molten solder due to repeated melting?
- A Tin content reduced
B Lead content reduced
C Prevent slug formation
D Uneven flowing in joints
-
- 11 Which method of cable laying is suitable for congested areas?
- A Racks in air
B Duct pipes
C Along buildings
D Direct in ground
-
- 12 Which part of the underground cable is protecting the metallic sheath against corrosion?
- A Serving
B Bedding
C Armouring
D Lead sheath
-
- 13 Why the soldering iron must be kept into a stand that not in use while soldering?
- A It prevents burns and fire
B To control the excessive heat
C To save the time of soldering process
D To save the operator from electric shock
-
- 14 Which type of wire joint is found in the junction box?
- A Aerial tap joint
B Plain tap joint
C Rat tail joint
D Married joint

15 What is the use of Britannia 'T' joint?
A Extending the length of the lines
B Inside and outside wiring installation
C Mechanical stress not required on conductor
D Tapping the service connection from overhead lines

16 Which type of soldering method is used for servicing and repairing work?
A Dip soldering
B Soldering with a flame
C Soldering with soldering gun
D Soldering with a soldering iron

17 What is the use of dipsoldering method?
A Soft soldering
B Piping and cable soldering work
C Soldering miniature components on PCB
D Soldering sensitive electric components

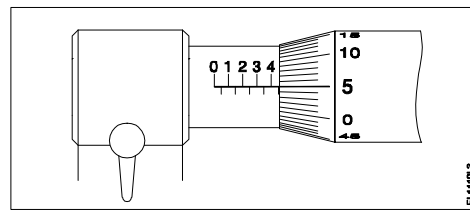
18 Which insulating material is used as hot pouring compound for making joints in underground cable?
A Polyamine hardener
B Cast resin compound
C Bituminous compound
D Epoxy cast resin compound

19 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 armoring from atmospheric condition
D Protect the metallic sheath against corrosion

20 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

21 Which type of joint is used in overhead lines for high tensile?
A Scarfed joint
B Britannia 'T' joint
C Western union joint
D Britannia straight joint

22 What is the reading of the micrometer?



A 5.05 mm
B 5.00 mm
C 4.55 mm
D 4.05 mm

23 Which method of soldering is used for repairing the vehicle body?
A Dip soldering
B Soldering with flame
C Soldering with soldering iron
D Soldering with soldering gun

24 What is the advantage of stranded conductor over solid conductor?
A Cost is less
B More flexible
C Less voltage drop
D More insulation resistance

25 What is the current capacity of the 16 Amp. Cable, if it is protected by coarse excess current protection?
A 11 A
B 13 A
C 15 A
D 18 A

26 What is the disadvantage of solid conductor compared to stranded conductor?
A Less rigidity
B Less flexibility
C Low melting point
D Low mechanical strength

27 Which type of joint is used in overhead lines for extending the length of wire?
A Scarfed joint
B Britannia 'T' joint
C Western union joint
D Britannia straight joint

28 What is the cause for cold solder defect in soldering?

- A** Excessive heating
- B** Insufficient heating
- C** Incorrect use of solder
- D** High wattage soldering iron

29 Which is the example for coarse excess current protection?

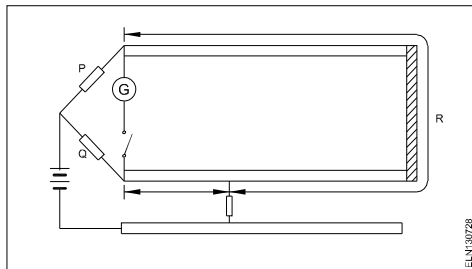
- A** MCB
- B** MCCB
- C** H.R.C fuses
- D** Rewireable type fuse unit

30 Which conductors are used for distribution lines?

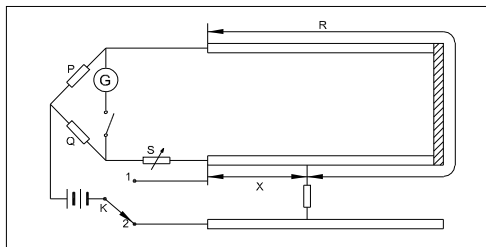
- A** Insulated conductors
 - B** Insulated solid conductors
 - C** Bare conductors
 - D** Two core cable
-

Questions : Level 3

- 1 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
- 2 What will happen to PVC insulation in cable carries excess current continuously for long period?
- A Voltage drop increases
 - B Voltage drop decreases
 - C Insulation resistance increases
 - D Insulation resistance decreases
- 3 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
- 4 What happens to the voltmeter if it is connected as an ammeter?
- A Low reading
 - B No deflection
 - C Meter burns out
 - D Overshoot deflection

Module 3: Wire - Joints, Soldering, U.G. Cables - Key paper

Questions: Level 1

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

Questions: Level 2

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

Questions: Level 3

SL.No	Key
1	B
2	D
3	B
4	A

Electrician - 1st Semester - Module 4 : Basic Electrical Practice

Questions : Level 1

1 How many electrons are there in the third cell of the copper atom?

- A 8
- B 13
- C 18
- D 29

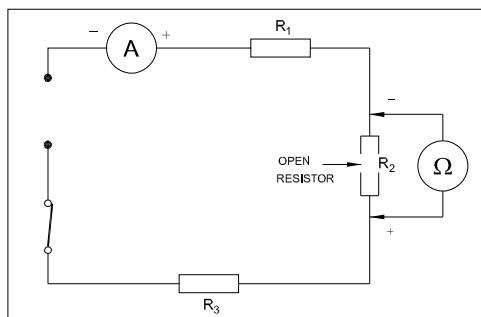
2 Which law states that in closed electric circuit, the applied voltage is equal to the sum of the voltage drops?

- A Ohm's law
- B Laws of resistance
- C Kirchhoff's first law
- D Kirchhoff's second law

3 What is the formula for the equivalent resistance (R_T) of the three resistors R_1 , R_2 & R_3 are connected in parallel circuit?

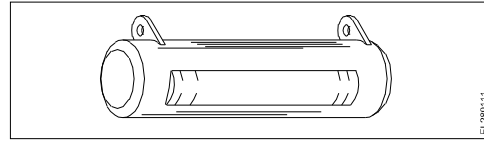
- A $R_T = R_1 + R_2 + R_3$
- B $R_T = \frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3}$
- C $R_T = \frac{1}{R_1 + R_2 + R_3}$
- D $R_T = \frac{1}{\frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3}}$

4 What is the reading of ohmmeter across opened ' R_2 ' resistor?



- A Indicate zero reading
- B Indicate infinite resistance
- C Total resistance value of the circuit
- D Value of sum of the resistance of R_1 and R_3 only

5 What is the name of the resistor?



- A Metal film resistor
- B Wire wound resistor
- C Carbon - film resistor
- D Carbon composition resistor

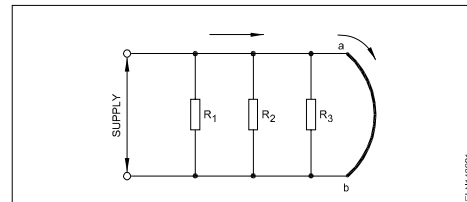
6 What electrical quantities are related in Ohm's law?

- A Current, resistance and power
- B Current, voltage and resistivity
- C Current, voltage and resistance
- D Voltage, resistance and current density

7 What is the unit of resistivity?

- A ohm / cm
- B ohm / cm²
- C ohm - metre
- D ohm / metre

8 What is the effect of the circuit, if 'ab' points are shorted?



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

9 What is the formula for Quantity of electricity (Q)?

- A Current x Time
- B Voltage x Current
- C Current x Resistance
- D Voltage x Resistance

10 What is the unit of conductance?

- A Mho
- B Ohm
- C Ohm-m
- D Ohm/m

-
- 11** Which one defines the change in resistance in Ohm (Ω) per degree centigrade ($^{\circ}\text{C}$)?
- A** Temperature effect
 - B** Laws of temperature
 - C** Temperature constant
 - D** Temperature co-efficient
-
- 12** What is the S.I unit of specific resistance?
- A** Ohm/cm
 - B** Ohm/metre²
 - C** Ohm-metre
 - D** Micro ohm/cm²
-
- 13** Which formula is used to calculate the power of a DC circuit?
- A** Voltage x time
 - B** Current x voltage
 - C** Current x resistance
 - D** Voltage x resistance
-
- 14** What is the specific resistance value of copper conductor?
- A** 1.72 Ohm/cm³
 - B** 1.72 Micro ohm
 - C** 1.72 Micro ohm/cm³
 - D** 1.72 Micro ohm/m
-

Questions : Level 2

1 Which is the semiconductor material?

- A Eureka
- B Ebonite
- C Manganin
- D Germanium

2 What is the indication of neon polarity indicator used for checking A.C. supply?

- A Both electrodes will glow
- B Only one electrode will glow
- C Both electrodes will be flickering
- D One electrode will glow and another will be flickering

3 Calculate the electrical energy in unit consumed by 500W lamp for 5 hours.

- A 0.5 unit
- B 1.0 unit
- C 1.0 unit
- D 2.5 unit

4 What is the value of hot resistance of a bulb rated as 100W/250V?

- A 31.25 ohm
- B 62.50 ohm
- C 312.50 ohm
- D 625.00 ohm

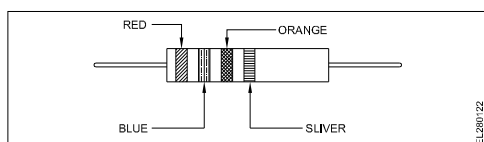
5 Calculate the total power of the circuit of two lamps rated as 200W/240V are connected in series across 240V supply?

- A 50 W
- B 100 W
- C 200 W
- D 400 W

6 What is the change of resistance value of the conductor as its diameter is doubled?

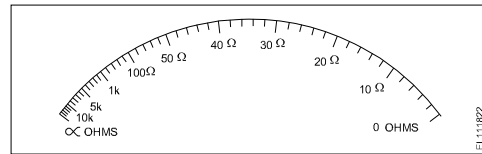
- A Increases to two times
- B Decreases to four times
- C Decrease to half of the value
- D No change in value of resistance

7 Calculate the resistance value of the resistor by colour coding method.



- A $23 \times 10^3 \text{ W} \pm 5\%$
- B $26 \times 10^3 \text{ W} \pm 10\%$
- C $32 \times 10^4 \text{ W} \pm 10\%$
- D $37 \times 10^4 \text{ W} \pm 5\%$

8 Why the ohmmeter is graduated with non-linear scale?



- A Voltage is directly proportional to resistance
- B Current is inversely proportional to resistance
- C Resistance is inversely proportional to the square of current
- D Voltage is directly proportional to the square of the current

9 Which material is having negative temperature co-efficient property?

- A Mica
- B Eureka
- C Copper
- D Manganin

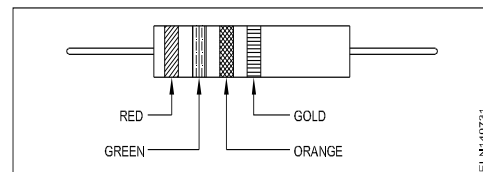
10 What is the effect of the parallel circuit with one branch opened?

- A Current will remain same
- B Whole circuit will not function
- C No current will flow in that branch
- D Voltage drop increase in the opened branch

11 Which type of resistor is used for Arc quenching protection in circuit breakers?

- A Varistors
- B Sensistors
- C Thermistors
- D Light dependent resistor (LDR)

12 Calculate the value of resistance by colour coding method?



- A $22 \times 10^3 \pm 10\%$
- B $23 \times 10^4 \pm 10\%$
- C $25 \times 10^3 \pm 5\%$
- D $36 \times 10^4 \pm 5\%$

13 Which is the application of series circuit?

- A Voltmeter connection
- B Lighting circuits in home
- C Shunt resistor in ammeter
- D Multiplier resistor of a voltmeter

14 What is the effect on opened resistor in series circuit?

- A No effect in opened resistor
- B Full circuit current will flow in opened resistor
- C Total supply voltage will appear across the opened resistor
- D No voltage will appear across the opened resistor

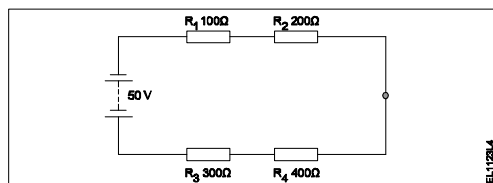
15 What is the name of the resistor if its resistance value increase with increase in temperature?

- A Varistors
- B Senistors
- C Thermistors
- D Light Dependent Resistor (LDR)

16 Which type of meter is used to test the polarity of battery?

- A Moving iron ammeter
- B Moving coil voltmeter
- C Moving iron voltmeter
- D Dynamo meter type wattmeter

17 What is the voltage drop in resistor 'R₂' in the series circuit?



- A 5 volt
- B 10 volt
- C 15 volt
- D 20 volt

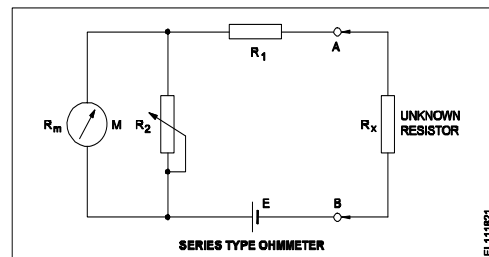
18 Which is the application of series circuit?

- A Fuse in circuit
- B Voltmeter connection
- C Electrical lamp in homes
- D Shunt resistor in ammeter

19 Which method is used for measuring 1 Ohm to 100K Ohm range resistance?

- A Substitution method
- B Kelvin bridge method
- C Wheat stone bridge method
- D Voltmeter and ammeter method

20 What is the purpose of the shunt resistor 'R₂' used in series type Ohm meter circuit?



- A To limit the current in the circuit
- B To increase the value of meter resistance
- C To adjust the zero position of the pointer
- D To prevent the excess current in the circuit

21 Which electrical quantity affects the heat generated in a conductor?

- A Voltage
- B Square of the current
- C Square of the resistance
- D Current passed through it

22 What is the change in value of resistance of the conductor, if its cross section area is doubled?

- A No change
- B Decreases 2 times
- C Increases 2 times
- D Decreases 4 times

23 What is the resistance of Light Dependent Resistor (LDR), if the intensity of light is increased?

- A Increases
- B Decreases
- C Remains same
- D Becomes infinity

24 Calculate the hot resistance of 200W / 250V rated lamp?

- A 31.25 Ω
- B 62.5 Ω
- C 312.5 Ω
- D 625 Ω

25 What is the value of resistance in an open circuit?

- A Zero
- B Low
- C High
- D Infinity

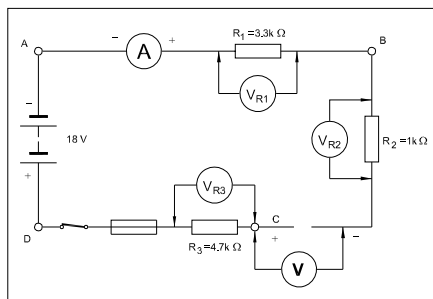
26 Which resistor the lowest current flows in a parallel circuit having the values of $50\ \Omega$, $220\ \Omega$, $450\ \Omega$ and $560\ \Omega$ connected with supply?

- A $50\ \Omega$
- B $220\ \Omega$
- C $450\ \Omega$
- D $560\ \Omega$

27 Which is inversely proportional to the resistance of a conductor?

- A Length
- B Resistivity
- C Temperature
- D Area of cross section

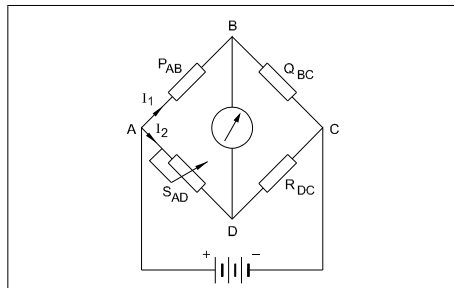
28 What is the reading of the voltmeter 'V'?



- A 0 V
- B 6 V
- C 9 V
- D 18 V

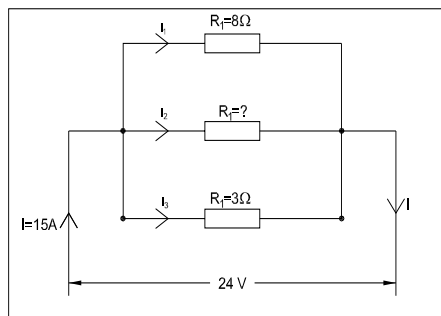
Questions : Level 3

- 1 Calculate the value of unknown resistance 'R_{DC}' in the Wheatstone bridge network, If P_{AB} = 500Ω, Q_{BC} = 300Ω, S_{AD} = 15Ω, at balanced condition.?



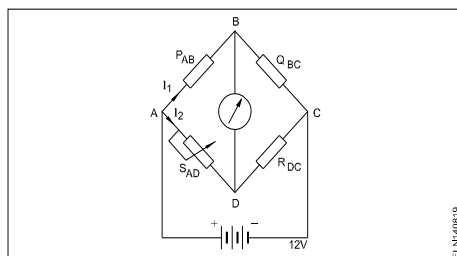
- A 12 Ω
- B 9 Ω
- C 6 Ω
- D 3 Ω

- 2 Calculate the value of resistance 'R₂' in the parallel circuit.



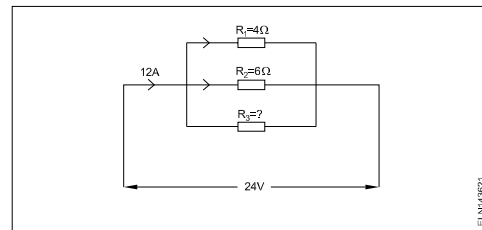
- A 2 Ω
- B 4 Ω
- C 6 Ω
- D 8 Ω

- 3 Calculate the unknown resistance "R_{DC}" in the Wheatstone bridge circuit, if P_{AB}=400 ohms, Q_{BC}=200 ohms and S_{AD}=12ohms at balanced condition.



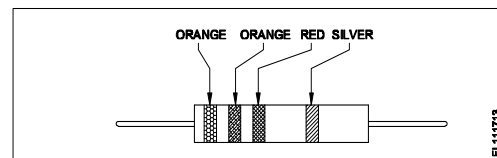
- A 4 Ω
- B 6 Ω
- C 8 Ω
- D 12 Ω

- 4 Calculate the resistance value in R₃ resistor.



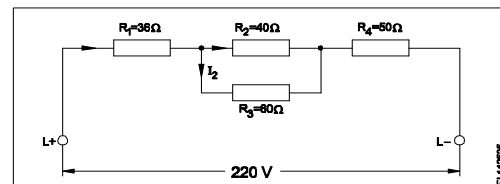
- A 4 Ohm
- B 6 Ohm
- C 8 Ohm
- D 12 Ohm

- 5 What is the value of resistance of the resistor?



- A 330 ± 5% Ohm
- B 3300 ± 10% Ohm
- C 33000 ± 5 % Ohm
- D 330000 ± 10% Ohm

- 6 Calculate the voltage drop across the resistor 'R₄' in the circuit?



- A 48 V
- B 72 V
- C 80 V
- D 100 V

Module 4: Basic Electrical Practice - Key paper

Questions: Level 1

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

Questions: Level 2

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

Questions: Level 3

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

Electrician 1st Semester - Module 5 : Magnetism Capacitors

Questions : Level 1

1 What is the unit of capacitance?

- A Mho
- B Henry
- C Farad
- D Coulomb

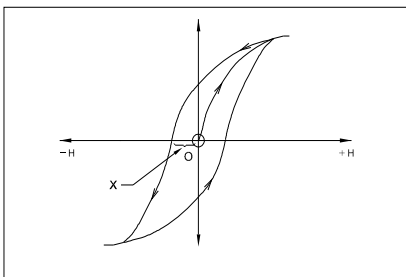
2 What is the unit of permeance?

- A Ampere - turns
- B Weber/Ampere turns
- C Ampere turns/Weber
- D Weber/Square metre

3 Which rule is applied to find the direction of magnetic fields in a solenoid coil?

- A Cork screw rule
- B Right hand palm rule
- C Flemings left hand rule
- D Flemings right hand rule

4 What is the part marked as 'X' in B.H curve?



- A Coercivity
- B Saturation point
- C Magnetizing force
- D Residual magnetism

5 What is the unit of Reluctance?

- A Weber / metre²
- B Weber / metre
- C Ampere turns / Weber
- D Ampere turns / metre²

6 Which defines the flux density is always lagging behind the magnetising force?

- A Hysteresis
- B Magnetic intensity
- C Magnetic induction
- D Residual magnetism

7 What is the S.I unit of Flux density?

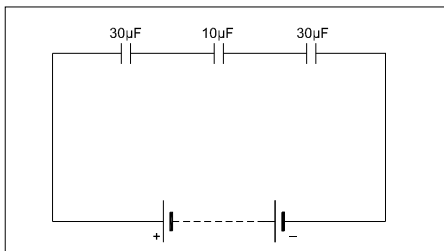
- A Tesla
- B Weber
- C Weber/metre
- D Ampere-turns

8 What is the unit of Magneto Motive Force (MMF)?

- A Ampere / M²
- B Ampere - M
- C Ampere - turns
- D Ampere / turns

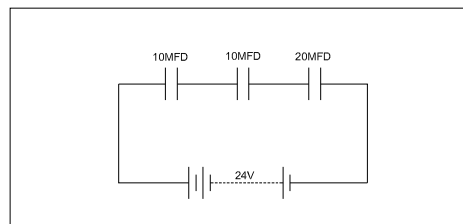
Questions : Level 2

- 1 Calculate the total capacitance value in the circuit.



- A 0.16 µF
B 6 µF
C 30 µF
D 70 µF
-
- 2 What is the capacitance value of a capacitor that requires 0.5 coulomb to charge to 35 volt?
- A 0.014 F
B 0.025 F
C 0.14 F
D 0.25 F
-
- 3 Which is the diamagnetic substance?
- A Air
B Steel
C Water
D Platinum
-
- 4 Which factor affects the polarity of the electromagnet?
- A Length of the coil
B Direction of current
C Strength of current
D Strength of the magnetic field
-
- 5 What is the total inductance if 3 inductors (L_1 , L_2 and L_3) are connected in series?
- A $L_T = L_1 \times L_2 \times L_3$
B $L_T = L_1 + L_2 + L_3$
C $L_T = \frac{1}{L_1} + \frac{1}{L_2} + \frac{1}{L_3}$
D $L_T = \frac{1}{L_1 + L_2 + L_3}$

- 6 Calculate the total value of capacitance of series capacitor circuit.



- A 4µfd
B 10µfd
C 15µfd
D 40µfd
-
- 7 Which material is the paramagnetic substance?
- A Cleat wiring
B Copper
C Bismuth
D Graphite
-
- 8 What is the similar term in magnetic circuit for "conductance" in electrical circuit??
- A Reluctivity
B Permeance
C Reluctance
D Permeability
-
- 9 Which is the correct expression of capacitance 'C' if the electric charge is 'Q' and the voltage is 'V'?
- A $C = \frac{Q}{V}$
B $C = \frac{V}{Q}$
C $C = VQ$
D $C = \sqrt{VQ}$
-
- 10 What is the effect on surrounding metal placed in a magnetic field?
- A Hysteresis
B Skin effect
C Eddy current
D Dielectric stress
-
- 11 In which device the air capacitors are used?
- A TV tuner
B Oscillator
C Loudspeaker
D Radio receiver

12 Which is the diamagnetic substance?

- A Wood
- B Nickel
- C Platinum
- D Manganese

13 What indicates the shape of a BH curve (Hysteresis loop) of material?

- A Reluctance of the material
- B Field intensity of the substance
- C Magnetic properties of the material
- D Pulling power of the magnetic material

14 Which electrical quantity is directly proportional to the eddy current?

- A Voltage
- B Current
- C Frequency
- D Resistance

15 Which is the cause for changing the Permeability?

- A Length
- B Flux density
- C Field intensity
- D Magneto motive force

16 Which type of capacitor is used for space electronics?

- A Plastic film type
- B Ceramic disc type
- C Electrolytic-Aluminum type
- D Electrolytic-Tantalum type

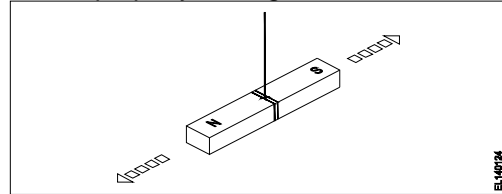
17 What is the effect of the electrolytic capacitor, if open circuit fault occurs?

- A It will not function
- B It will burst at once
- C It will become leaky
- D It will function normally

18 What will be the change in value of capacitance if the distance of the plates are decreased in the capacitor?

- A Becomes zero
- B Remains same
- C Decreases
- D Increases

19 Which property of magnet is illustrated?



- A Directive property
- B Induction property
- C Saturation property
- D Poles existing property

20 Which is a paramagnetic substance?

- A Air
- B Steel
- C Glass
- D Water

21 Which method of magnetization is used to make commercial purpose permanent magnets?

- A Induction method
- B Single touch method
- C Double touch method
- D Divided touch method

22 What is the effect of inductance if the distance between the turns increases?

- A Increases
- B Decreases
- C Becomes zero
- D Remains same

23 What is the function of dielectric insulator in capacitor?

- A Increases the strength of capacitance
- B Prevents any current flow between plates
- C Protects from short circuit between the plates
- D Helps to hold the charge in capacitor for long period

24 Which factor is determining the value of capacitance in capacitor?

- A Area of the plates
- B Shape of the plates
- C Material of the plates
- D Thickness of the plates

25 Which type of capacitors are used in RF coupling circuit?

- A Tantalum
- B Monolithic
- C Electrolytic
- D Metalized poly propylene

Questions : Level 3

- 1 How the value of capacitance can be decreased?
- A Increasing the plate area
 - B Increasing the resistance of the plates
 - C Increasing the distance between the plates
 - D Using high dielectric constant material
-
- 2 What precaution to be taken before connecting the different voltage rating capacitors in series?
- A All the capacitors must be same manufacturer
 - B Each capacitors voltage drop must be less than its voltage rating
 - C Total capacitors value must be less than the lowest value of capacitor
 - D Break down voltage of each capacitor must be same
-
- 3 How can you increase the pulling strength of an electromagnet?
- A increase the field intensity
 - B Reduce the current in the coil
 - C Reduce the number of turns in the coil
 - D Increase the B-H curve of the material
-
- 4 What will happen, if the polarized electrolytic capacitor is reversely connected?
- A No effect on the capacitor
 - B Explode due to excessive heat
 - C Current is reduced in the circuit
 - D Value of capacitance will be increased
-

Module 5: Magnetism Capacitors - Key paper

Questions: Level 1

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

Questions: Level 2

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

Questions: Level 3

SL.No	Key
1	C
2	B
3	A
4	B

Electrician - 1st Semester - Module 6: AC Circuits

Questions: Level 1

1 What is the unit of susceptance?

- A Mho
- B Ohm
- C Henry
- D Farad

2 What is the formula to find 3 phase Reactive power (P_r) if the line voltage is ' V_L ' and line current is ' I_L '?

- A $P_r = V_L I_L$
- B $P_r = 3 V_L I_L \cos\theta$
- C $P_r = \sqrt{3} V_L I_L \sin\theta$
- D $P_r = \sqrt{3} V_L I_L \cos\theta$

3 What is the formula for Reactive Power (P_r) in an AC circuit?

- A $P_r = VI$
- B $P_r = \sqrt{2} VI$
- C $P_r = VI \cos\theta$
- D $P_r = VI \sin\theta$

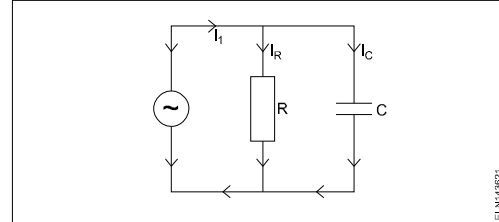
4 What is the phase displacement in a 3-phase AC circuit?

- A 90°
- B 120°
- C 180°
- D 270°

5 What is the formula to calculate the impedance (Z) of the R.L.C series circuit, if the inductive reactance (X_L) is less than capacitive reactance (X_C)?

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

6 What is the formula to calculate the line current (I_L) of this single phase R - C parallel circuit?



- A $I_L = I_R - I_C$
- B $I_L = I_R + I_C$
- C $I_L = I_R^2 + I_C^2$
- D $I_L = \sqrt{I_R^2 + I_C^2}$

7 What is the formula to calculate the three phase active power (P) if the line voltage (V_L) and line current is I_L and phase angle is ' ϕ '?

- A $P = V_L I_L \sin\theta$
- B $P = 3 V_L I_L \cos\theta$
- C $P = \sqrt{3} V_L I_L \sin\theta$
- D $P = \sqrt{3} V_L I_L \cos\theta$

8 What is the formula for form factor (K_f)?

- A $K_f = \frac{\text{Average value}}{\text{RMS value}}$
- B $K_f = \frac{\text{RMS value}}{\text{Average value}}$
- C $K_f = \frac{\text{Maximum value}}{\text{Average value}}$
- D $K_f = \frac{\text{RMS value}}{\text{Maximum value}}$

9 Which electrical term is defined as the total opposition to current in AC parallel circuit?

- A Resistance
- B Impedance
- C Admittance
- D Susceptance

10 What is the form factor (K_f) for sinusoidal AC?

- A 1.00
- B 1.11
- C 2.22
- D 4.44

11 What is the reciprocal of inductance in AC parallel circuit?

- A Reactance
- B Admittance
- C Conductance
- D Susceptance

12 Which formula is used to calculate Form factor (K_f)?

- A $K_f = \frac{\text{Effective value}}{\text{Average value}}$
- B $K_f = \frac{\text{Average value}}{\text{Effective value}}$
- C $K_f = \frac{\text{Effective value}}{\text{Maximum value}}$
- D $K_f = \frac{\text{Average value}}{\text{Maximum value}}$

13 Which formula is used to calculate the impedance (z) of a RLC series circuit?

- A $Z=R^2+(x_L \sim x_c)^2$
- B $Z=\sqrt{R+(x_L \sim x_c)}$
- C $Z=\sqrt{R^2+(x_L \sim x_c)}$
- D $Z=\sqrt{R^2+(x_L \sim x_c)^2}$

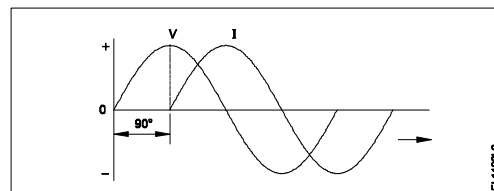
14 What is the phase displacement between phases in a 3 phase circuit?

- A 90°
 - B 120°
 - C 180°
 - D 360°
-

Questions: Level 2

- 1 What is the main cause for below 0.5 lagging power factor in 3 phase system?
- A Due to fluctuation of voltage
B True power due to resistive load
C Reactive power due to more inductive load
D Reactive power due to more capacitive load
-
- 2 What is the current in neutral conductor in 3 phase unbalanced load in star connected system?
- A No current will flow
B The algebraic sum of current in 3 phases
C The algebraic sum of current in 2 phases only
D Lesser than the lowest current in any one of the phases
-
- 3 What will be the readings of two watt meters (W1 & W2) in 3 phase power measurement, if the power factor is zero?
- A W1 & W2 both are positive reading
B W1 is Positive and W2 is negative reading
C W1 is equal to W2 but with opposite signs
D Zero W1 is Positive reading, and W2 is negative reading
-
- 4 What is the maximum value of voltage for 240 volt RMS?
- A 240V
B 415V
C 339.5V
D 376.8V
-
- 5 What is the condition for resonance in RLC series circuit? (Inductive reactance = ' X_L ', Capacitive reactance = ' X_C ')
- A $X_L > X_C$
B $X_L < X_C$
C $X_L = X_C$
D $X_L > \sqrt{2}X_C$
-
- 6 What is the relation between the line voltage (V_L) and phase voltage (V_P) in star connected system?
- A $V_L = \sqrt{3} V_P$
B $V_L = 3V_P$
C $V_L = V_P / \sqrt{3}$
D $V_L = V_P / 3$

- 7 What is the power factor in a 3 phase power measurement of two wattmeters showing equal readings?
- A 0
B 1
C 0.5
D 0.8
-
- 8 What is the relation between the line current (I_L) and phase current (I_P) in delta connected system?
- A $I_L = I_P$
B $I_L = 3 I_P$
C $I_L = \sqrt{3} I_P$
D $I_L = I_P / \sqrt{3}$
-
- 9 What is the purpose of phase sequence meter?
- A To control the speed of 3 phase motor
B To protect motor against short circuit fault
C To indicate the incorrect phase sequence of 3 phase
D To ensure the correct phase sequence of 3 phase system
-
- 10 Which AC circuit contains the phase relation between voltage (V) and current (I)?

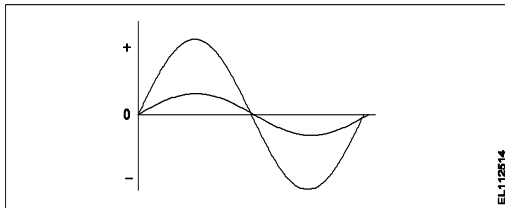


- A Pure resistive circuit
B Resistance and inductance circuit
C Resistance and capacitance circuit
D Resistance, inductance and capacitance circuit
-
- 11 In a 3 phase system, if the active power is 4 kw and the apparent power is 5 KVA, calculate the reactive power?
- A 1 KVAR
B 2 KVAR
C 3 KVAR
D 4 KVAR
-

12 In which condition resonance will occur in R-L-C series circuit?

- A Inductive reactance (X_L) is zero
- B Inductive reactance (X_L) is equal to capacitive reactance (X_C)
- C Inductive reactance (X_L) is greater than capacitive reactance (X_C)
- D Inductive reactance (X_L) is less than capacitive reactance (X_C)

13 What relationship is illustrated in between the current and voltage?



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

14 Calculate the total power by two wattmeter (W_1 & W_2) method, if one of the wattmeter (W_2) reading is taken after reversing.

- A $W_1 \times 2$
- B W_1 only
- C $W_1 - W_2$
- D $W_1 + W_2$

15 In which 3 phase system, the artificial neutral is required to measure the phase voltage?

- A 3 wire star connected system
- B 4 wire star connected system
- C 3 wire delta connected system
- D 4 wire delta connected system

16 What is the line voltage in 3 phase system if the phase voltage is 240V?

- A 380 Volt
- B 400 Volt
- C 415 Volt
- D 440 Volt

17 Which condition is called as resonance RLC circuit?

- A $X_L > X_C$
- B $X_C > X_L$
- C $X_L = X_C$
- D $R < X_L$

18 Which quantity is rotating at a constant angular velocity?

- A Scalar quantity
- B Vector quantity
- C Phasor quantity
- D Algebraic quantity

Questions: Level 3

1 What is the resistance of the inductive coil takes 5A current across 240V, 50Hz supply at 0.8 power factor?

- A 48 Ω
- B 42.5 Ω
- C 38.4 Ω
- D 26.6 Ω

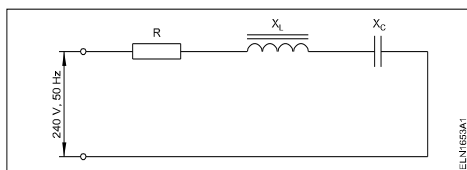
2 How the resonance frequency (f_r) can be increased in A.C series circuit?

- A Increasing the inductance value
- B Reducing the capacitance value
- C Increasing the capacitance value
- D Increasing the value of resistance

3 Calculate the apparent power in KVA of 3 phase 415V, 50 Hz, star system, if the line current (I_L) is 16A at 0.8 power factor.

- A 15.2 KVA
- B 11.5 KVA
- C 9.2 KVA
- D 5.3 KVA

4 Calculate the impedance of the circuit $R = 5\Omega$, $X_L = 36\Omega$ and $X_C = 24\Omega$.



- A 69 Ω
- B 65 Ω
- C 13 Ω
- D 12 Ω

5 Calculate the line current of the 3 phase 415V 50 HZ supply for the balanced load of 3000 watt at 0.8 power factor is connected in star.

- A 8.5 A
- B 5.2 A
- C 4.5 A
- D 3.4 A

6 Calculate the power factor of coil having resistance of 24 Ω , draws the current of 5A, at 240V/ 50HZ AC supply.

- A 0.8
- B 0.6
- C 0.5
- D 0.3

7 Calculate the power factor of R.L.C circuit having resistance (R) = 15 Ω , resultant reactance (X) = 20 Ω connected across 240V /50Hz AC supply?

- A 0.5
- B 0.6
- C 0.7
- D 0.8

8 Calculate the value admittance (Y) of the RLC parallel circuit connected across 240volts/50Hz AC supply and 8 Amp. Current is passed through it ?

- A 3.33 Mho
- B 0.33 Mho
- C 0.033 Mho
- D 0.003 Mho

9 How the low power factor (P.F) can be improved in AC circuits?

- A By connecting resistors in series
- B By connecting capacitors in series
- C By connecting inductors in series
- D By connecting capacitors in parallel

10 Calculate the apparent power of a star connected 3 phase load, if it is connected across 3 phase 415volt/50Hz supply at 0.8 p.f and the phase current is 10 Amps.

- A 12.45 KVA
- B 57.50 KVA
- C 3.320 KVA
- D 7.188 KVA

11 What is the P.F if one of the wattmeters reading is zero and the other reads total power in 2 wattmeter method of 3 phase power measurement?

- A 0.5
- B Zero
- C Unity
- D Below 0.5

12 How will you obtain positive reading in the wattmeter reads negative reading during 3- phase two wattmeter method?

- A By interchanging the connections of input terminals
- B By disconnecting the connection of current coil in meter
- C By reversing the connection of pressure coil in meter
- D By reversing the pressure coil and current coil connection in meter

13 What is the power factor if one of the wattmeter gives negative reading in two wattmeter method of 3 phase power measurement?

- A** 0
- B** 0.5
- C** Unity
- D** Less than 0.5

Module 6: AC Circuits - Key paper

Questions: Level 1

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

Questions: Level 2

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

Questions: Level 3

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

Electrician 2nd Semester - Module 1: Cells and Batteries

Questions : Level 1

- 1 Which law secondary cell works?
A Lenz's law
B Joule's law
C Faradays laws of electrolysis
D Faradays laws of electromagnetic induction
- 2 What is the formula to calculate the Mass deposited during electrolysis?
A $M = it \text{ gm}$
B $M = zit \text{ gm}$
C $M = \frac{it}{z} \text{ gm}$
D $M = \frac{Z}{it} \text{ gm}$
- 3 How the capacity of batteries is specified?
A Volt
B Watt
C Volt Ampere
D Ampere hour
- 4 What is the unit of electric charge?
A Volt
B Watt
C Ampere
D Coulomb
- 5 What is the output voltage of lithium cell?
A 1.2 V
B 1.5 V
C 1.8 V
D 2.5 V
- 6 What is the formula for Faraday's first law of electrolysis?
A $M = \frac{Z}{it}$
B $M = Zit$
C $M = \frac{it}{Z}$
D $M = \frac{Zt}{i}$
- 7 What is the Electro Chemical Equivalent (ECE) of silver?
A 0.001182 mg/coloumb
B 0.01182 mg/coloumb
C 0.1182 mg/coloumb
D 1.1182 mg/coloumb

- 8 What does the letter 'Z' indicate in the formula $M = \frac{Z}{it}$?
A Time in seconds
B E.C.E of electrolyte
C Amount of current in Amp
D Mass deposited in grams
- 9 What is the Electro Chemical Equivalent (ECE) of copper?
A 0.329 mg / coulomb
B 0.329 mg / coulomb
C 1.1182 mg / coulomb
D 1.1182 mg / coulomb

Questions : Level 2

1 Which device converts sunlight into electrical energy?

- A Photo voltaic cell
- B Liquid crystal diode
- C Light emitting diode
- D Light dependent resistor

2 What is the method of charging if the battery is to be charged for short duration at higher rate?

- A Initial charge
- B Boost charge
- C Trickle charge
- D Freshening charge

3 Which electrolyte used in carbon zinc dry cells?

- A Dilute sulphuric acid
- B Ammonium chloride
- C Potassium hydroxide
- D Concentrated hydrochloric acid

4 Which effect causes by passing electric current in liquids?

- A Heating
- B Lighting
- C Magnetic
- D Chemical

5 Which material is used to make negative plates in lead acid battery?

- A Lead dioxide
- B Sponge lead
- C Lead peroxide
- D Lead sulphate

6 Which cell is most often used in digital watches?

- A Voltaic
- B Lithium
- C Mercury
- D Silver oxide

7 What is the function of fine selector switch in battery charger?

- A Selection of current rating
- B Selection of charging time
- C Selection of voltage range
- D Selection of charging method

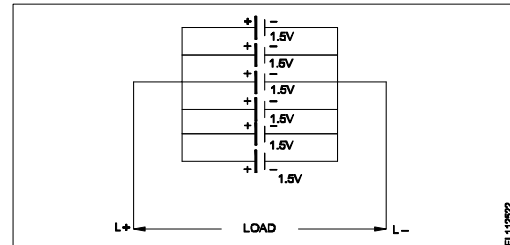
8 What purpose the hydrometer is used during charging of battery?

- A Determine the AH capacity
- B Assess the battery voltage level
- C Assess the discharge level of battery
- D Determine the specific gravity of electrolyte

9 Which is used as an electrolyte in lead acid battery?

- A Hydrochloric acid
- B Ammonium chloride
- C Potassium hydroxide
- D Diluted sulphuric acid

10 What is the total voltage of the circuit?



- A 1.5 Volt
- B 6.0 Volt
- C 7.5 Volt
- D 9.0 Volt

11 What is the outcome at the positive plate, after the chemical reaction in lead acid battery during charging?

- A Sponge lead(Pb)
- B Lead peroxide(PbO₂)
- C Lead sulphate(PbSO₄)
- D Lead sulphate + water

12 In which method the battery is charged at low current for long period?

- A Rectifier method
- B Trickle charging method
- C Constant current method
- D Constant potential method

13 Which material is used as cathode (-ve) electrode in silver oxide battery?

- A Zinc
- B Copper
- C Carbon
- D Silver oxide

14 What is the outcome of the chemical reaction that takes place in negative plate of lead acid battery during discharging?

- A Sponge lead(Pb)
- B Lead peroxide(PbO₂)
- C Lead sulphate(PbSO₄)
- D Lead sulphate + water

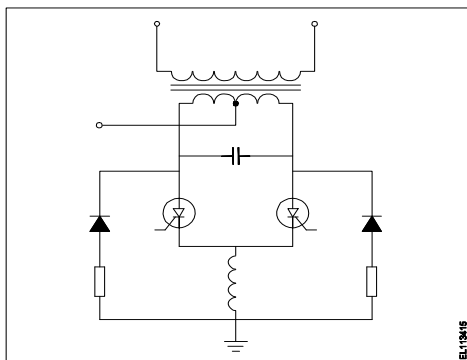
15 What is the purpose of separator in lead acid battery?

- A To provide a path for electrolyte
- B To hold the positive and negative plate firmly
- C To avoid short in between the positive and negative plates
- D To keep positive and negative plate in a sequence array

16 Which instrument is used to measure the specific gravity of electrolyte in lead acid battery?

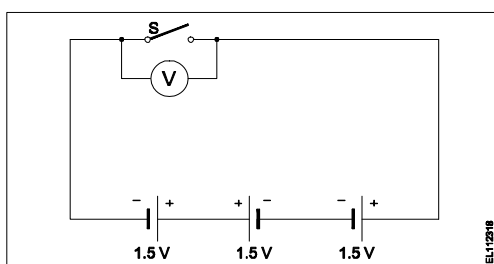
- A Barometer
- B Hydrometer
- C Anima meter
- D High rate discharge tester

17 Which type of inverter circuit?



- A Driven inverter
- B SCR used inverter
- C Single transistor inverter
- D Two winding transformer inverter

18 What is the total output voltage of the circuit?



- A 0 V
- B 1.5 V
- C 3.0 V
- D 4.5 V

19 Which is used as a positive electrode in a dry cell?

- A Zinc
- B Carbon
- C Copper
- D Lithium

20 Which apparatus is used to check the charging condition of voltage in battery?

- A Voltmeter
- B Multimeter
- C Hydrometer
- D High rate discharge tester

21 Which part is losing electron during electrolysis?

- A Cathode
- B Anode
- C Electrolyte
- D Seperator

Questions : Level 3

- 1 What is the name of defect that bending of plates in secondary cells?
A Buckling
B Local action
C Partial short
D Hard sulphation
-
- 2 Which technique is used to control the corrosion of a metal surface?
A Anodic protection
B Cathodic protection
C Electrolytic protection
D Electrostatic protection
-
- 3 What is the effect if one cell is connected with reverse polarity in a parallel combination circuit?
A Voltage become zero
B Become open circuit
C Will get short circuited
D No effect will function normally
-
- 4 What is the effect on output power with respect to temperature in solar cells?
A No effect on change in temperature
B Increases with increase in temperature
C Decreases with increase in temperature
D Decreases with decrease in temperature
-
- 5 Why the vent plug is kept open during charging of a battery?
A To escape the gas freely
B To allow oxygen enter inside
C To check the level of electrolyte
D To check the colour changes in the plates
-
- 6 How the hard sulphation defect in lead acid battery can be rectified?
A Changing with new electrolyte
B Replacing with new electrodes
C Recharging the battery for a longer period at low current
D Recharging the battery for short period at high current
-
- 7 What is the effect of buckling defect in a lead acid battery?
A Bending of the electrodes
B Reducing the strength of electrolyte
C Making short between the electrodes
D Increasing the internal resistance
-

- 8 What happen to the terminal voltage of a cell if load increases?
A Increases
B Decreases
C Falls to zero
D Remains same
-
- 9 How local action defect is prevented in voltaic cell?
A By connecting cells in series
B By using a depolarizing agent
C By connecting cells in parallel
D By amalgamating the zinc plate
-
- 10 Which is the cause for buckling defect in lead acid battery?
A Overcharging or over discharging
B Charging with low rate for short period
C Formation of sediments falling from the plate
D Battery is kept in discharged condition for long period

Module 1: Cells and Batteries - Key paper

Questions: Level 1

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

Questions: Level 2

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

Questions: Level 3

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

Electrician 2nd Semester - Module 2: Basic Wiring Practice

Questions : Level 1

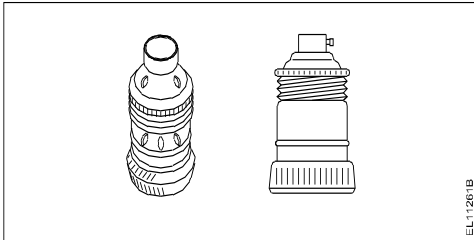
1 How the conduit pipes are specified?

- A Length in metre
- B Wall thickness in mm
- C Inner diameter in mm
- D Outer diameter in mm

2 What is the fusing factor for rewirable fuse?

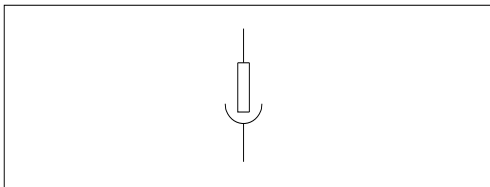
- A 1.1
- B 1.4
- C 2.1
- D 2.5

3 What is the name of electrical accessory?



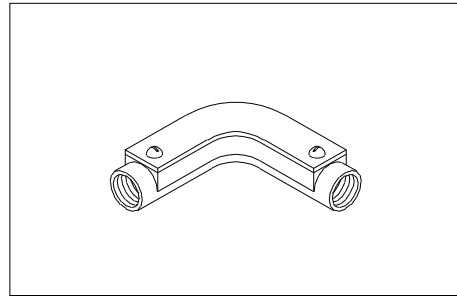
- A Bracket holder
- B Edison screw type holder
- C Angle swivel lamp holder
- D Goliath Edison screw lamp holder

4 What is the name of symbol used in wiring circuit?



- A Link
- B Fuse
- C Pull switch
- D Plug and socket

5 What is the name of the conduit accessory?

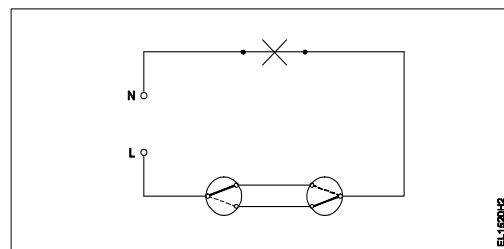


- A Solid bend
- B Solid elbow
- C Inspection Bend
- D Inspection elbow

6 How many two way switches with intermediate switch are used to control one lamp from three different places?

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

7 What is the name of the diagram?

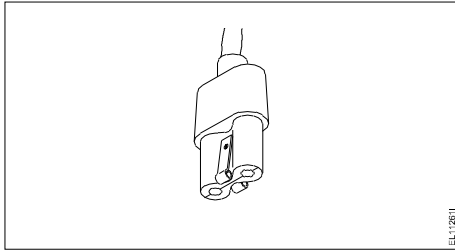


- A Installation plan
- B Layout diagram
- C Wiring diagram
- D Circuit diagram

8 What is the fusing factor for high rupturing capacity fuses (HRC)?

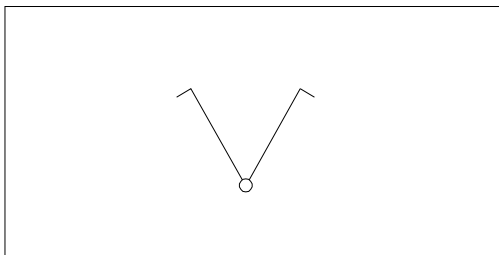
- A 1.0
- B 1.1
- C 1.4
- D 1.7

9 What is the name of the accessory used in electrical appliances?



- A 2 Pin plug
- B Three pin plug
- C Iron connector with direct entry
- D Flat connector with side entry

10 What is the name of the accessory symbol?



- A Bell push switch
- B Two way switch
- C One way switch two poles
- D Multi position switch single pole

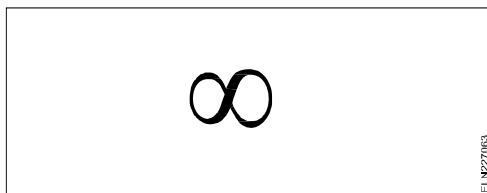
11 What is the name of the four insulated conductors group?

- A Pair
- B Core
- C Quad
- D Layer

12 How many two way switches are required in godown wiring circuit to control four lamps?

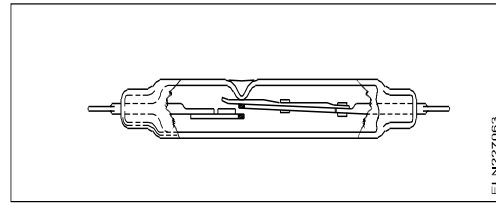
- A 2
- B 3
- C 4
- D 5

13 What is the symbol indicates?



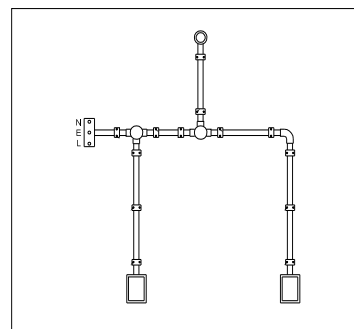
- A Table fan
- B Ceiling fan
- C Bracket fan
- D Exhaust fan

14 What is the name of the relay?



- A Impulse relay
- B Dry reed relay
- C Electromagnetic relay
- D Mercury wetted contact rela

15 What is the name of the diagram?



- A Layout plan
- B Wiring diagram
- C Installation plan
- D Schematic diagram

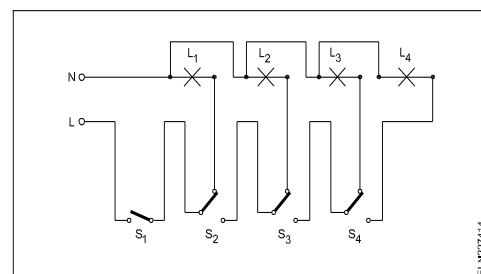
16 What is the term for the time taken by a fuse to interrupt the circuit in fault?

- A Time factor
- B Fusing factor
- C Cut-off factor
- D Fusing current

17 What is the maximum PVC conduit size to make safe cold bending?

- A 12 mm
- B 19 mm
- C 25 mm
- D 50 mm

18 What is the name of the lighting circuit?

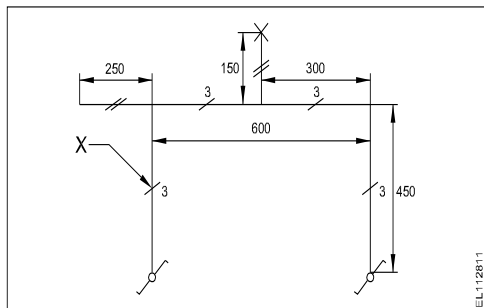


- A Tunnel lighting wiring
- B Corridor lighting wiring
- C Godown lighting wiring
- D Staircase lighting wiring

19 What is the expansion of MCB?

- A Minute Control Breaker
- B Miniature Circuit Breaker
- C Minimum Current Breaker
- D Maximum Current Breaker

20 What does the symbol marked 'X' indicate?

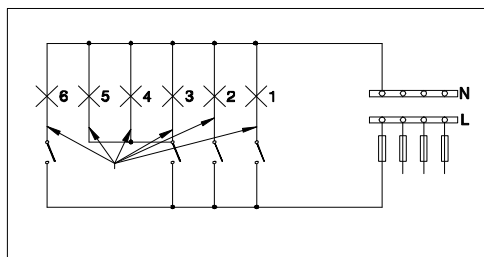


- A Number of wires run on the limb
- B Number of switches to be connected
- C Number of battern (or) pipe to be fixed
- D Number of clamps (or) clips to be fixed

21 What is the minimum size of aluminum earth continuity conductor used in single phase domestic wiring as per BIS?

- A 3.5 Sq.mm
- B 3 Sq.mm
- C 2.5 Sq.mm
- D 1.5 Sq.mm

22 What is the name of wiring method?



- A Joint box method
- B Looping back method
- C Loop in method using 3 plate ceiling rose
- D Loop in method using 2 plate ceiling rose

23 What is length of thread on rigid conduits as per BIS?

- A 9mm - 20mm
- B 11mm - 27mm
- C 13mm - 25mm
- D 15mm - 30mm

24 How many link clips are packed in cardboard boxes as per BIS rules?

- A 50 clips
- B 75 clips
- C 100 clips
- D 150 clips

25 What is the expansion of ECC?

- A Earth Conductor Continuity
- B Earth Continuity Conductor
- C Earth Carrying Conductor
- D Earth Continuity Cable

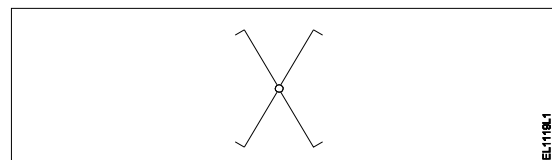
26 Which type of lamp holder is used for the lamps above 300 watts?

- A Edison screw holder
- B Goliath screw holder
- C Angle holder
- D Brachet holder

27 What is the expansion of AWG?

- A American Wire Gauge
- B American Wire Grade
- C American Wire Group
- D American Wire Guard

28 What is the name of BIS symbol?

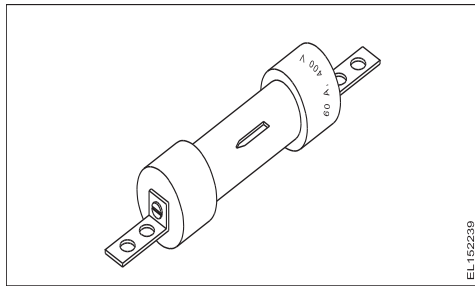


- A Lamp
- B Two way switch
- C Intermediate switch
- D Multi - position switch

Questions : Level 2

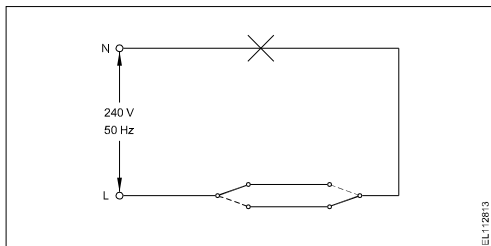
- 1 What is the purpose of underwriter's knot for pendent holder connection?
- A Avoid loose connections
 - B Increase mechanical strength
 - C Prevent excessive cap cover pressure
 - D Reduce the strain from the terminals of accessories

- 2 What is the type of fuse?



- A Knife edge cartridge fuse
 - B High rupturing capacity fuse
 - C Ferrule contact cartridge fuse
 - D Diazed screw type cartridge fuse
- 3 Which type of load is protected by the L-series MCB?
- A Motors
 - B Geyser
 - C Hand tools
 - D Air conditioner

- 4 Which type of switch is used in the circuit?



- A One way switch
 - B Two way switch
 - C Intermediate switch
 - D Multiposition switch
- 5 What is the advantage of concealed wiring?
- A Easy to maintain
 - B Less voltage drop
 - C High insulation resistance
 - D Protection against moisture

- 6 Which type of relay can be operated at both A.C and D.C?
- A Ferred relay
 - B Thermal relay
 - C Impulse relay
 - D Dry reed relay

- 7 What is the purpose of the flexible cords in domestic wiring?
- A Concealed wiring
 - B Permanent connection
 - C Run cable through holes in ceiling
 - D Connection for transportable appliances

- 8 Which type of circuit breaker is used above 100 A current rating?
- A Miniature Circuit Breaker (MCB)
 - B Earth Leakage Circuit Breaker (ELCB)
 - C Moulded Case Circuit Breaker (MCCB)
 - D Residual Current Circuit Breaker (RCCB)

- 9 What is the purpose of tin coating on copper fuse wire?
- A Withstand high temperature
 - B Increase the fusing factor
 - C Prevent oxidation of copper wire
 - D Increase the mechanical strength

- 10 Why tree system of wiring most suitable for multistoreyed building?
- A Easy load balancing
 - B Constant voltage distribution
 - C Offers minimum voltage drop
 - D Easy in fault finding with many fuses

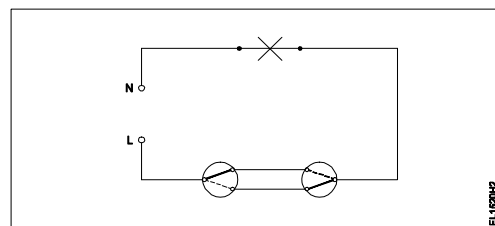
- 11 Which is used as a filler material for fixing screw hole on ceiling?
- A Paper
 - B Nylon
 - C Cement
 - D Poly vinyl chloride

- 12 Where the Iron Clad Double Pole (ICDP) main switch is used?
- A Large industrial installations
 - B Control main or branch circuits
 - C Single phase domestic installations
 - D Three phase power circuit installations

- 13 Which electrical accessory belongs to general classification of accessories?
- A Fuse
 - B Ceiling roses
 - C Intermediate switch
 - D Pendent lamp holder

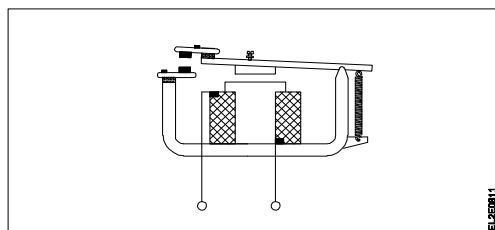
- 14** Which is the application of DC series MCB?
A AC motor
B DC motor
C Locomotives
D Air conditioners
- 15** Which place the Tree system of wiring is most suitable?
A Godown wiring
B Industrial wiring
C Domestic wiring
D Multi storied building
- 16** Why separate wiring is recommended for home theatre wiring and power wiring?
A Avoid electrical fire
B Reduce power loss
C Avoid electrical interference
D Maintain voltage level constant
- 17** What is the tool used to bend conduits?
A Hickey
B Coupler
C Pipe vice
D Bench vice
- 18** What is the purpose of ELCB?
A Detects the fault in circuit
B Monitors the residual current
C Protects the equipment from over load
D Protects from short circuit fault
- 19** What is the purpose of the fuse cut out provided at the incoming power supply?
A To ensure the line is not over loaded
B To maintain the stabilised supply voltage
C To protect the circuit from the leakage current
D To protect the human beings from electric shock
- 20** What is the use of die stock set?
A Cut external threads on square pipe
B Cut internal threads on cylindrical pipe
C Cut external threads on cylindrical pipe
D Cut internal threads on rectangular pipe
- 21** Which classification of accessory the ceiling rose is classified?
A Outlet accessories
B Safety accessories
C Holding accessories
D General accessories

- 22** What is the purpose of the circuit diagram in wiring installation?
A To show the physical position of accessories
B To estimate the various accessories in the circuit
C To inform the reader quickly what for the circuit is designed
D To show the schematic connection of the circuit for a specific task
- 23** Which electrical equipment is provided with 'L' series MCB?
A General lighting
B Motors
C Air conditioner
D Halogen lamp
- 24** Why the looping-back (loop in) method is preferred in domestic wiring installation?
A Easy to identify the faults
B No separate joints are used
C More number of tappings can be taken
D More number of sub-circuits can be made
- 25** What is the type of wiring?



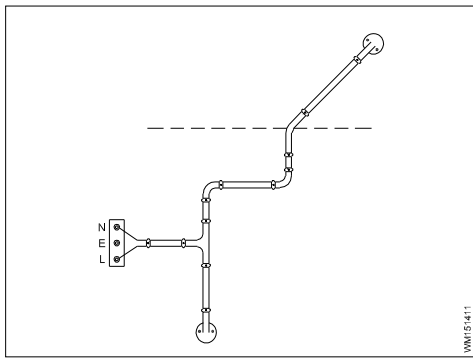
- A** Staircase wiring
B Godown wiring
C Hostel wiring
D Tunnel wiring

- 26** What is the type of relay?



- A** Impulse relay
B Dry reed relay
C Latching relay
D Electromagnetic relay

27 What is the type of wiring?



- A CTS wiring
- B Cleat wiring
- C PVC conduit wiring
- D PVC casing and capping wiring

28 Which type of conduit used for gas tight explosive installation?

- A Flexible conduits
- B Rigid steel conduits
- C Rigid non-metallic conduits
- D Flexible non-metallic conduits

29 What is the function of circuit breaker?

- A Making contact at normal condition
- B Making contact at abnormal condition
- C Breaking automatically at abnormal condition
- D Physical breaking contact at abnormal condition

30 What is the function of bimetallic strip in MCB ?

- A Over load protection
- B Short circuit protection
- C Over voltage protection
- D Earth leakage protection

31 What protection offered by residual current circuit breaker?

- A Protection from shock
- B Protection from over load
- C Protection from short circuit
- D Protection from leakage current

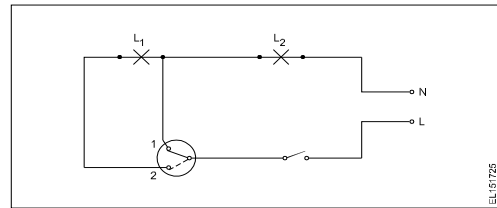
32 Which wiring is suitable for temporary installations?

- A Cleat wiring
- B Concealed wiring
- C PVC conduit wiring
- D Metal conduit wiring

33 Where the phase conductor is looped in looping system of wiring?

- A Switch box
- B Junction box
- C Distribution box
- D Socket connection

34 What is the application of the wiring circuit?



- A Two lamps dim operation only
- B Two lamps controlled by one switch
- C Two lamps controlled by two switches
- D One lamp bright and two lamp dim operation

35 What is the reason for home theatre wiring not to run along with power wiring?

- A Avoid leakage current in home theatre wiring
- B Control temperature in home theatre wiring
- C Avoid electrical interference in audio, video system
- D Reduce the power consumption in power supplies

36 What will happen to the value of earth resistance if length of the earth pipe is increased?

- A Remain same
- B Increases
- C Decreases
- D Infinity

37 Which types of accessories are used to operate a portable appliance?

- A Safety accessories
- B Holding accessories
- C Outlet accessories
- D Controlling accessories

38 Which insulation is necessary for proper function and basic protection?

- A Double insulation
- B Functional insulation
- C Reinforced insulation
- D Supplementary insulation

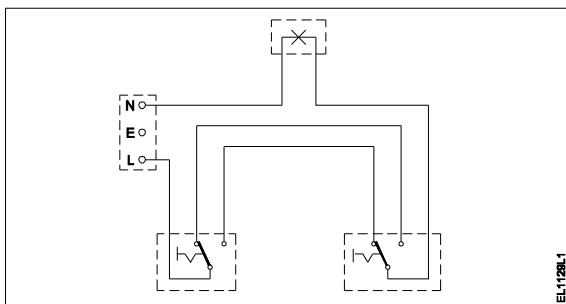
39 Which type of accessories of fuse is comes under?

- A Controlling accessories
- B Holding accessories
- C Safety accessories
- D Outlet accessories

40 Which type MCBs suitable for halogen lamps?

- A 'L' series MCBs
- B 'G' series MCBs
- C 'DC' series MCBs
- D 'L' and 'G' series MCBs

41 What is the type of diagram?



- A Wiring diagram
- B Circuit diagram
- C Installation plan
- D Layout diagram

Questions : Level 3

- 1 What is the effect of low current rated cable used to connect higher current load?
- A Voltage drop increases
 - B Load current increases
 - C Voltage drop decreases
 - D Cable damage due to heat
-
- 2 Calculate the earth fault loop impedance, if the ELCB tripping current is 30 mA?
- A 166 Ω
 - B 1666 Ω
 - C 16.66 Ω
 - D 16666 Ω
-

Module 2: Basic Wiring Practice - Key paper

Questions: Level 1

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

Questions: Level 2

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

Questions: Level 3

SL.No	Key
1	D
2	B

Electrician 2nd Semester - Module 3: Wiring Installation and Earthing

Questions: Level 1

- 1 What is the minimum size of Copper earth continuity conductor used in single phase domestic wiring as per BIS?
- A 3 Sq.mm
B 3.5 Sq.mm
C 2.5 Sq.mm
D 1.5 Sq.mm
-
- 2 What is the formula to find voltage drop of a A.C single phase wiring circuit?
- A Voltage drop = IR volt
B Voltage drop = I²R volt
C Voltage drop = I/R volt
D Voltage drop=IR/2 volt
-
- 3 What is the maximum permissible load for a power sub circuit as per I.E rules?
- A 800 Watt
B 1500 Watt
C 2000 Watt
D 3000 Watt
-
- 4 What is the permissible leakage current in domestic wiring installation?
- A 1/5 x Full load current
B 1/50 x Full load current
C 1/500 x Full load current
D 1/5000 x Full load current
-
- 5 Which formula is used to calculate the diversity factor?
- A Diversity factor = $\frac{\text{Maximum load}}{\text{Installed load}}$
B Diversity factor = $\frac{\text{Installed load}}{\text{Maximum load}}$
C Diversity factor = $\frac{\text{Minimum actual load}}{\text{Installed load}}$
D Diversity factor = $\frac{\text{Installed load}}{\text{Minimum actual load}}$
-
- 6 Which principle the earth resistance tester works?
- A Self induction
B Mutual induction
C Fall of potential method
D Fleming's left hand rule

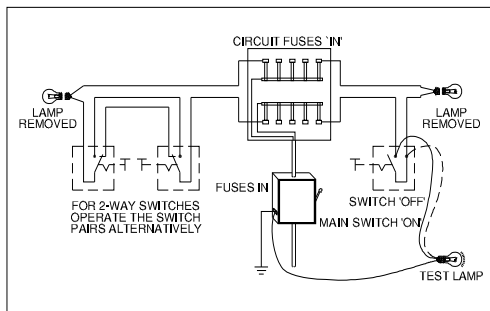
Questions: Level 2

- 1 Which method is used to reduce earth resistance value in a existing earth?
- A Increasing the length of electrode
 - B Keeping wet condition in earth pits always
 - C Adding more sand and charcoal in earth pits
 - D Increasing the diameter of earth electrode

- 2 Why A.C is required to measure the earth resistance by using earth resistance tester?
- A Regulate the current
 - B Increase the voltage drop
 - C Decrease the voltage drop
 - D Avoid electrolytic emf interference

- 3 Which location the service connection supply leads to be connected at consumer main board?
- A IC cut out
 - B Main switch
 - C Energy meter
 - D Distribution board

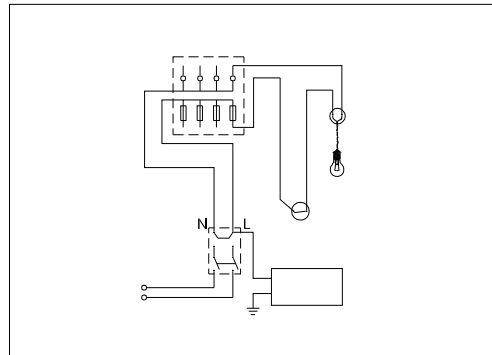
- 4 What is the type of test in domestic wiring installation?



- A Polarity test
- B Continuity (or) open circuit test
- C Insulation resistance test between conductors
- D Insulation resistance test between conductors and earth

- 5 Which instrument is used to test new domestic wiring installation?
- A Multimeter
 - B Megger
 - C Shunt type ohmmeter
 - D Series type ohmmeter

- 6 What is the type of test in the wiring installation?



- A Polarity test
- B Open circuit test
- C Insulation resistance test between conductors
- D Insulation resistance test between conductors and earth

- 7 Where system earthing is done?

- A Generating station
- B Electroplating installation
- C Small industrial installation
- D Domestic wiring installation

- 8 What is the test to be carried out by using megger?

- A Polarity test
- B Insulation resistance test
- C Earth electrode resistance test
- D Earth conductor continuity test

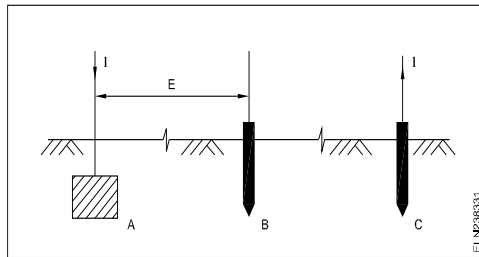
- 9 What is the reason of lamp glowing dim and motor running slow in a domestic wiring circuit?

- A Open circuit in the neutral line
- B Short circuit between conductors
- C High value series resistance fault
- D Open circuit in the earth conductor

- 10 Which wiring installation the System earthing is to be done?

- A Substations
- B Godown wiring
- C Domestic wiring
- D Commercial wiring

11 Which method of earth resistance measurement is illustrated?



- A Fall of current
- B Fall of potential
- C Current dividing
- D Potential dividing

12 What is the function of current reverser in earth resistance tester?

- A Converts A.C. into D.C
- B Reverses the polarity of D.C
- C Changes D.C. supply into A.C supply
- D Reverses the direction of rotation of the generator

13 What is the advantage of stranded conductor over solid conductor?

- A Cost is less
- B More flexible
- C Less voltage drop
- D More insulation resistance

14 What is the reason for supplying AC to the electrodes for measuring earth resistance?

- A Provide electrostatic shield
- B Protect the coils in the meter
- C Reduce the value of current in the meter
- D Avoid the effect of electrolytic emf interference

15 Why the pointer is not stable at zero on the scale as the megger is not in use?

- A It is not having controlling Torque
- B Provided with air friction damping
- C The deflecting torque is directly proportional to the current
- D The deflecting torque is directly proportional to the square of the current

16 Which is proportional for the deflection of ohmmeter needle in earth resistance tester?

- A Current in current coil
- B Current in potential coil
- C Speed of the handle rotation
- D Ratio of the current in two coils

17 Why system earthing is different in utilization than equipment earthing?

- A It protects human only
- B It protects from all circuit faults
- C It is associated with current carrying conductors
- D It is connected to the non current carrying metal work

18 What is the effect if a person receives a shock current of 20 MA?

- A No sensation
- B Painful shock
- C Heart convulsions
- D Become unconscious

19 Which electrical equipment 'L' series type MCB's are used?

- A Oven
- B Locomotives
- C AC motors
- D Air conditioners

20 What is the megger reading in a dead short wiring installation?

- A 0 MΩ
- B 1 MΩ
- C 500 MΩ
- D Infinity

21 What is the advantage of crimping?

- A Gives neat appearance
- B Reduce load current
- C Avoid loose connections
- D Easy to replace

Questions: Level 3

- 1 How to control harmonic distortions in neutral connections as per IE rule?
- A Earthing through impedance
 - B Providing by plate earthing
 - C Increasing conductor size
 - D Providing parallel earthing
-
- 2 How the earth resistance can be reduced?
- A Providing double earthing
 - B Reducing the pit depth for earthing
 - C Increasing the length of the electrodes
 - D Decreasing the length of the electrodes

Module 3: Wiring Installation and Earthing - Key paper

Questions: Level 1

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

Questions: Level 2

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

Questions: Level 3

SL.No	Key
1	A
2	A

Electrician 2nd Semester - Module 4: Illumination

Questions: Level 1

1 What is the S.I unit of luminous intensity?

- A Lux
- B Lumen
- C Candela
- D Steradian

2 What is the working temperature of filament lamp?

- A 1500°C
- B 1800°C
- C 2000°C
- D 2300°C

3 Which term refers that the flow of light into a plane surface?

- A Lumen
- B Illuminance
- C Luminous flux
- D Luminous intensity

4 What is the term refers luminous flux given by light source per unit solid angle?

- A Lumen
- B Candela
- C Illuminance
- D Luminous intensity

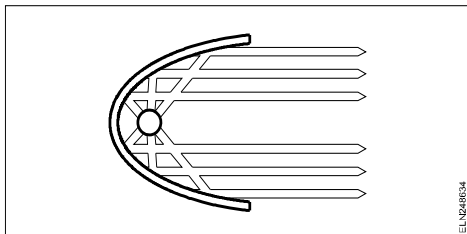
5 What is the unit of luminous flux?

- A Lux
- B Lumen
- C Candela
- D Lumen/m²

6 What is the unit of luminous efficiency?

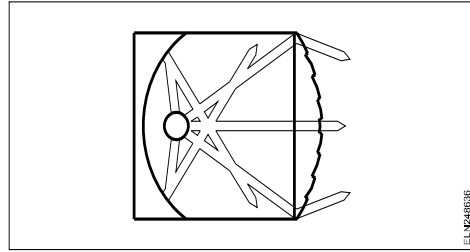
- A Lux
- B Lumen
- C Lumen/m²
- D Lumen/watt

7 What is the name of the reflector?



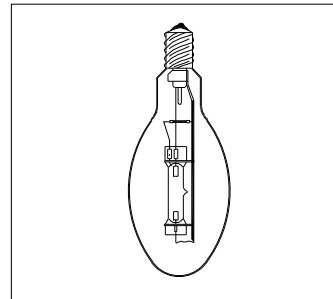
- A Mirror type
- B Soft light type
- C Parabolic type
- D Dispersive type

8 What is the name of light?



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

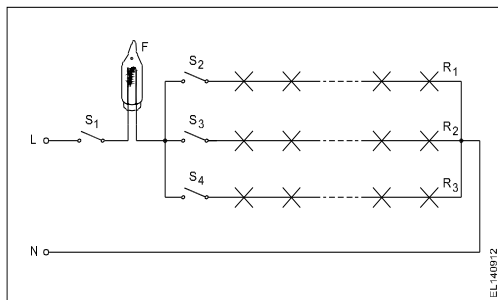
9 What is the name of lamp?



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

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 strontium oxide
- 2 Which position MB type high pressure mercury vapour lamps are 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 Reduce the working voltage
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 type of light fitting design has free from glare?
A Semi direct type
B Semi indirect type
C Direct lighting type
D Indirect lighting type

- 7 Why the outer tube of a high pressure metal halide lamp made of boro silicate glass?
A Increase the lighting effect
B Withstand heavy temperature
C Withstand atmospheric pressure
D Reduce the ultra violet radiation from lamp
- 8 What is the main advantage of coiled coil lamp?
A High melting point
B Higher light output
C Low operating voltage
D Low power consumption
- 9 Which device provides ignition voltage and act as choke in a HPSV lamp?
A Arc tube
B Sodium vapour
C Leak transformer
D High pressure aluminium oxide
- 10 Which type of lighting system is used for flood and industrial lighting?
A Direct lighting
B Indirect lighting
C Semi-direct lighting
D Semi-indirect lighting
- 11 Which is the cold cathode lamp?
A Halogen lamp
B Neon sign lamp
C Fluorescent lamp
D Mercury vapour lamp

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 the rate of evaporation in a vacuum bulb is reduced?
- A Filling inert gas
 - B Producing arc in bulb
 - C Reducing filament resistance
 - D Increasing filament resistance

Module 4: Illumination - Key paper

Questions: Level 1

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

Questions: Level 2

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

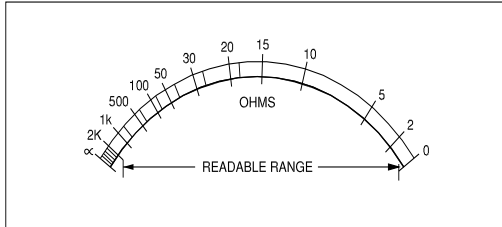
Questions: Level 3

SL.No	Key
1	C
2	A

Electrician 2nd Semester - Module 5: Measuring Instruments

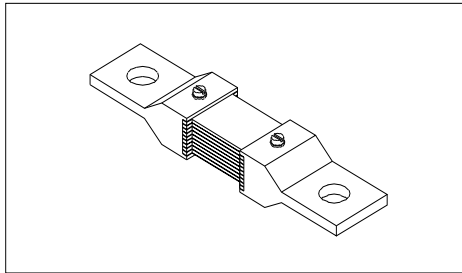
Questions : Level 1

1 What is the name of the scale?



- A Linear scale
- B Coarse scale
- C Extended scale
- D Non-linear scale

2 What is the name of the shunt resistance material?

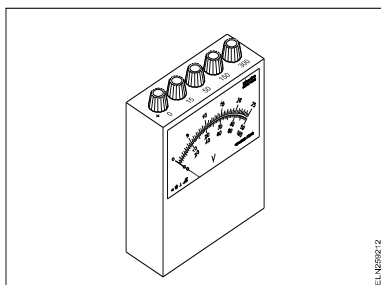


- A Copper
- B Eureka
- C Nichrome
- D Manganin

3 Which electrical effect that the single phase energy meter works?

- A Heating effect
- B Induction effect
- C Chemical effect
- D Electrostatic effect

4 What is the name of meter?

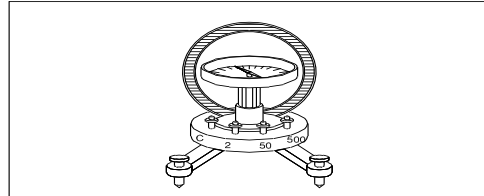


- A AC multirange ammeter
- B DC multirange voltmeter
- C AC and DC multirange ammeter
- D AC and DC multirange voltmeter

5 What is the unit of sensitivity in instruments?

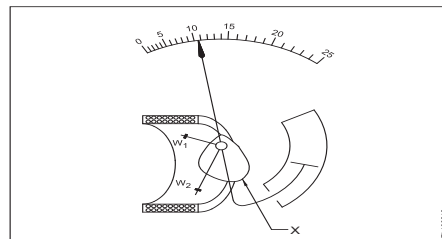
- A Volt / ohm
- B Ohm / volt
- C Ohm. metre
- D Ohm / metre

6 What is the name of the instrument?



- A Absolute instrument
- B Indicating instrument
- C Recording instrument
- D Integrating instrument

7 Name the type of instrument.



- A Attraction type moving iron
- B Repulsion type moving iron
- C Permanent magnet moving coil
- D Dynamo meter type moving coil

8 Which is an absolute instrument?

- A Ammeter
- B Volt meter
- C Energy meter
- D Tangent galvanometer

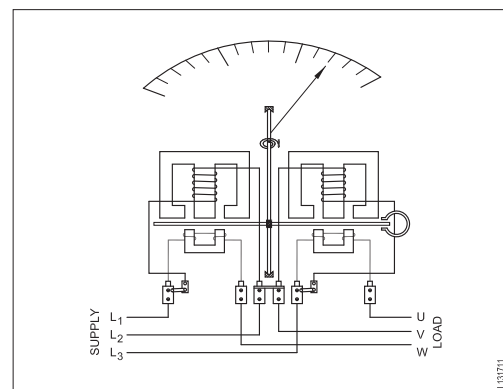
9 Which quantity is measured by an electro dynamic type instrument?

- A Power
- B Current
- C Voltage
- D Resistance

Questions : Level 2

- 1 Which force is required to move the pointer from zero position in an indicating instrument?
- A Controlling force
B Deflecting force
C Air friction damping
D Eddy current damping
-
- 2 Which is the position to use the instrument provided with gravity control?
- A Any position
B Vertical position
C Inclined position
D Horizontal position
-
- 3 Which instrument is used to measure one ohm and below one ohm resistance value accurately?
- A Megohm meter
B Multimeter (analog)
C Shunt type ohm meter
D Series type ohm meter
-
- 4 What is the purpose of the 3rd terminal provided in a advanced megohm meter?
- A Get higher ohmic values
B Pass the excess voltage to ground
C Pass the excess current to ground
D Get accurate readings without oscillation
-
- 5 What is the reason for the moving coil meter having uniform scale?
- A Deflecting torque is directly proportional to the current
B Deflecting torque is inversely proportional to the current
C Deflecting torque is inversely proportional to the square of the current
D Deflecting torque is directly proportional to the square of the current
-
- 6 What is the purpose of variable resistor connected across shunt type ohm meter?
- A Avoid draining of battery
B Minimize the error in reading
C Adjust the current to safe value
D Adjust the pointer to zero adjustment
-

- 7 Which material is used to make control spring in measuring instruments?
- A Steel
B Silver
C Tinned copper
D Phosphor bronze
-
- 8 Which is the position to use the instrument provided with spring control?
- A Any position
B Vertical position only
C Inclined position only
D Horizontal position only
-
- 9 Which instrument is an example of an integrating instrument?
- A AC voltmeter
B DC voltmeter
C Energy meter
D Tangent galvanometer
-
- 10 Why the scale of the moving iron instrument is having un-uniform scale?
- A Deflecting force is directly proportional to the Current
B Deflecting force is inversely proportional to the Current
C Deflection of force is directly proportional to the square of the Current
D Deflection force is inversely proportional to the square of the Current
-
- 11 Which type of wattmeter?

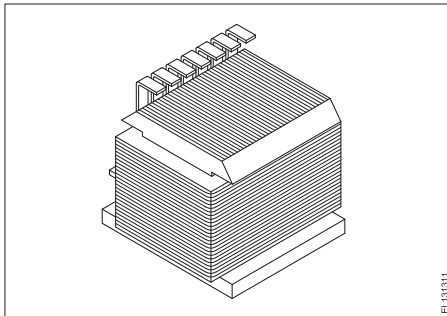


- A Three element 4 wire wattmeter
B Two element 3 phase wattmeter
C Three element 3 phase wattmeter
D Three phase two element with C.T & P.T
-

- 12 Which type of instrument is used with air friction damping?
- A Moving coil instrument
 - B Moving iron instrument
 - C Induction type instrument
 - D Dynamo meter type instrument

- 13 Which type of energy meter works with netural connection?
- A Three phase two element
 - B Three phase three element
 - C Single phase single element
 - D Three phase two element with CT & PT

- 14 What is the type of frequency meter?



- A Weston type
 - B Ratio meter type
 - C Electro dynamic type
 - D Mechanical resonance type
- 15 Why the moving coil meter is having uniform scale?
- A Deflecting force is directly proportional to the current
 - B Deflecting force is inversely proportional to the current
 - C Deflecting force is directly proportional to the square of the current
 - D Deflecting force is inversely proportional to the square of the current
- 16 Why damping force is required in a moving coil instrument?
- A Makes the needle movement faster
 - B Helps the deflecting force to act fast
 - C Brings the needle to its zero position
 - D Arrests the needle without oscillations
- 17 What is the function of soft iron core in a moving coil instrument?
- A Strengthens the deflection force
 - B Controls the needle's movement
 - C Provides meter with maximum sensitivity
 - D Provide uniform distribution of magnetic flux in air gap

- 18 Which parameter is the cause for loading effect on measuring instruments?
- A Low accuracy
 - B High sensitivity
 - C Low sensitivity
 - D Low influence error

- 19 Which meter is used to measure revolution per minute of a motor?
- A Tachometer
 - B Energy meter
 - C Ampere hour meter
 - D Centre zero ammeter

- 20 How to identify the moving iron type instrument?
- A No terminal marking
 - B Terminal marked (+) only
 - C One terminal coloured red
 - D Terminal marked (+) and (-)

- 21 Which force produces movement of pointer in an indicating instrument?
- A Damping force
 - B Deflecting force
 - C Repulsion force
 - D Controlling force

- 22 What is the function of integrating instrument?
- A Displays the quantity
 - B Indicates the quantity
 - C Registers the quantity
 - D Measures the quantity

- 23 Which position an instrument using fluid friction damping reads accurately?
- A Any position
 - B Vertical position
 - C Inclined position
 - D Horizontal position

Questions : Level 3

- 1 Which error is caused by the incorrect position of instrument reading?
A Device error
B Human error
C Influence error
D Switching error
-
- 2 Which error if the energy meter disc rotating continuously on no load?
A Speed error
B Phase error
C Friction error
D Creeping error
-
- 3 What is the effect on CT if its secondary is kept open?
A CT primary burns out
B Volt ampere capacity reduces
C Volt ampere capacity increases
D CT secondary winding burns out
-
- 4 How the creeping error is controlled in energy meter?
A By reducing rated voltage
B By increasing the inductive load
C By adjusting the brake magnet position
D By drilling two holes diametrically opposite on disc
-
- 5 Which source of measuring error is caused by the effect of magnetic fields?
A Device error
B Human error
C Influence error
D Switching error
-
- 6 Why two straight holes are provided in the aluminium disc in energy meter?
A To reduce the disc weight
B For power factor correction
C To prevent the flux leakage
D To arrest the creeping error
-
- 7 How to achieve maximum accuracy in measurement using analog instrument?
A Keep low input impedance
B Keep high input impedance
C Use short connecting leads
D Provide correct damping system
-

- 8 Calculate the value of shunt resistance required to measure 10 mA with one mA meter and meter resistance 30Ω ?
A 3Ω
B 30Ω
C 0.3Ω
D 300Ω
-

Module 5: Measuring Instruments - Key paper

Questions: Level 1

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

Questions: Level 2

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

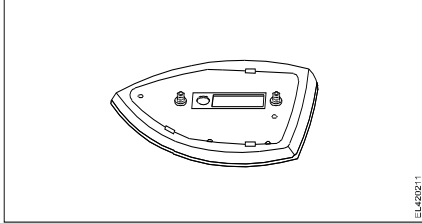
Questions: Level 3

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

Electrician 2nd Semester - Module 6: 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

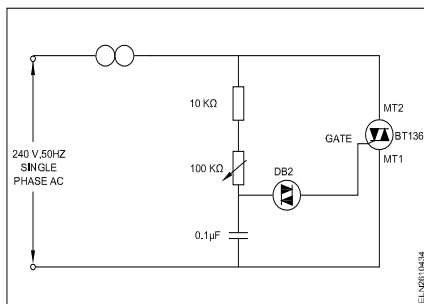
2 Which formula is used to calculate the heat generated as per Joules law?

- 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 the magnetron tube filament voltage used in microwave oven?

- A 1.5 V A.C
- B 2.0 V A.C
- C 3.0 V A.C
- D 3.2 V A.C

4 What is the name of the circuit?



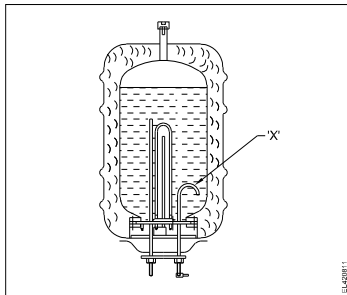
- A Electronic fan regulator
- B Electronic voltage multiplier
- C Electronic voltage stabilizer
- D Electronic triggering circuit of SCR

Questions : Level 2

- 1 Which material is used to make heating element?
A Silver
B Copper
C Nichrome
D Aluminium

- 2 What is the function of stirrer motor in microwave oven?
A Draws cooling air inside
B Spreads the heat uniformly
C Exhausts the hot air outside
D Revolves and reflects the electromagnetic energy

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

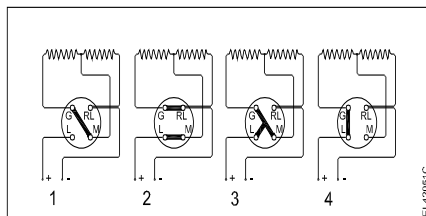


- A** Prevents draining of water
B Avoids the forming of scales
C Reduces the pressure of outlet pipe
D Restricts the air locking inside the tank

- 4 Which type of AC single phase motor is used in food mixer?

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

- 5 Which is the position for maximum output of the heater?



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

- 6 Calculate the heat generated in a electric heater of 1000 watt, 240 volt, worked for 5 minutes?

- A** 70.5 Kilo calories
B 71.0 Kilo calories
C 71.6 Kilo calories
D 72.1 Kilo calories

- 7 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

- 8 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

- 9 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 Maintains load current constant

- 10 What is the function of magnetron tube in a microwave oven?

- A** Amplifies the microwave signal
B Changes the polarity every half cycle
C Oscillate and produce cooking frequency
D Converts microwave energy to electrical energy

- 11 Which type of motor is used in the wet grinder?

- A** Universal motor
B Repulsion motor
C Capacitor start induction run motor
D Capacitor start capacitor run motor

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 Dielectric stress
-

Module 6: Domestic Appliances - Key paper

Questions: Level 1

SL.No	Key
1	A
2	B
3	D
4	A

Questions: Level 2

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

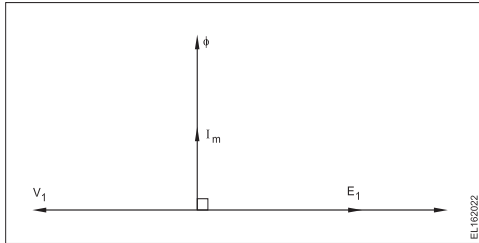
Questions: Level 3

SL.No	Key
1	A
2	A

Electrician 2nd Semester - Module 7: Transformer

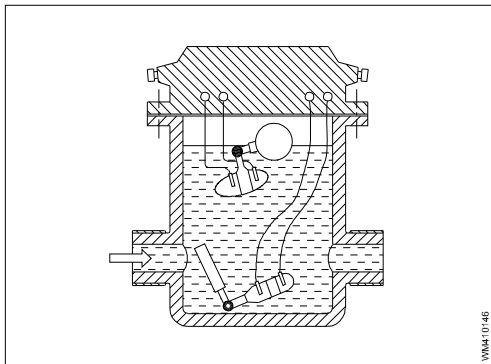
Questions : Level 1

- 1 What is the relationship between primary voltage (E_1 , V_1) and secondary voltage (E_2 , V_2) in a ideal transformer?



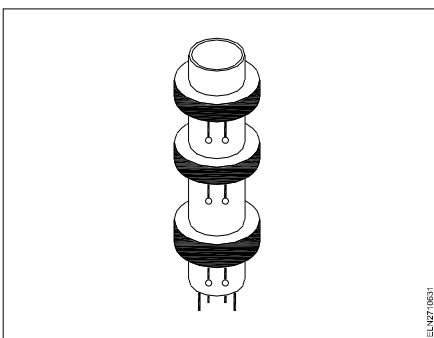
- A $E_1 = V_1$ and $E_2 = V_2$
- B $E_1 > V_1$ and $E_2 > V_2$
- C $E_1 < V_1$ and $E_2 < V_2$
- D $E_1 = V_2$ and $E_2 = V_1$

- 2 What is the name of the part in power transformer?



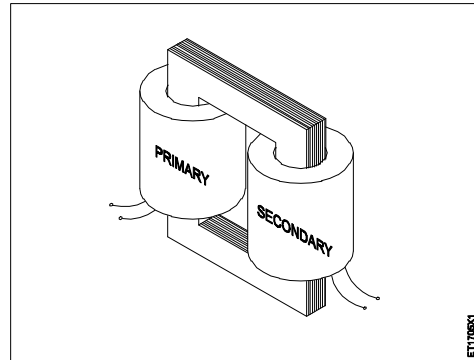
- A Breather
- B Tap charger
- C Explosion vent
- D Buchholz relay

- 3 What is the name of transformer?



- A Air core transformer
- B Iron core transformer
- C Ring core transformer
- D Ferrite core transformer

- 4 What is the name of transformer?



- A Auto transformer
- B Core type transformer
- C Shell type transformer
- D Audio frequency transformer

- 5 What is the composition of steel and silicon steel in transformer core?

- A Steel 97% and silicon 3%
- B Steel 95% and silicon 5%
- C Steel 93% and silicon 7%
- D Steel 90% and silicon 10%

Questions : Level 2

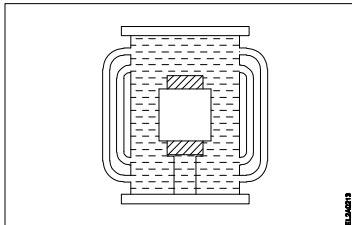
- 1 Which type of transformer is used for high frequency application?
- A Ring core transformer
 - B Ferrite core transformer
 - C Silicon steel core transformer
 - D Grain oriented core transformer
-

- 2 What is the function of conservator in transformer?
- A Prevents the moisture entry
 - B Transfers the heat to atmosphere
 - C Allows to release internal pressure
 - D Allows expansion of oil level due to load variation
-

- 3 Which loss of transformer is determined by short circuit test?
- A Copper loss
 - B Windage loss
 - C Hysteresis loss
 - D Eddy current loss
-

- 4 What is the purpose of using laminated core in transformer?
- A Reduce copper loss
 - B Reduce hysteresis loss
 - C Reduce mechanical loss
 - D Reduce eddy current loss
-

- 5 What is the cooling method of transformer?



- A Oil natural cooling
 - B Oil natural air forced cooling
 - C Oil forced air forced cooling
 - D Oil natural water forced cooling
-
- 6 What is the condition for obtaining maximum efficiency from transformer?
- A Copper loss > Iron loss
 - B Copper loss < Iron loss
 - C Copper loss = Iron loss
 - D Copper loss = Eddy current loss
-
- 7 What is the function of top float switch of buchholz relay in transformer?
- A Activate in moisture presence
 - B Activate at overloading condition
 - C Activate at open circuit condition
 - D Activate at high temperature condition

- 8 Why the core of current transformer is having low reactance and low core losses?
- A To minimise the burden
 - B To maintain constant output
 - C To prevent high static shield
 - D To minimise the error in reading
-

- 9 Why the load is disconnected before the OFF load tap changing operation?
- A To disconnect the tappings from neutral point
 - B To disconnect the moving contact of the diverter
 - C To avoid heavy sparking at the contact points
 - D To provide an electrical isolation for the windings
-

- 10 Which condition is absolutely essential for parallel operation of two transformers?
- A Nature of load
 - B Type of cooling
 - C Phase sequence
 - D Class of insulation used
-

- 11 Which transformer is used to measure high voltage installations?
- A Pulse transformers
 - B Ignition transformers
 - C Potential transformers
 - D Constant voltage transformers
-

- 12 Which power loss is assessed by open-circuit test on transformer?
- A Hysteresis loss only
 - B Eddy current loss only
 - C Copper loss
 - D Core loss
-

- 13 Which is determined by the crackle test of transformer oil?
- A Acidity
 - B Moisture
 - C Viscosity
 - D Dielectric strength
-

- 14 Which material is used to make core of power transformer?
- A Soft iron
 - B Rolled steel
 - C Copper alloy
 - D Cold rolled grain oriented
-

- 15 What is the purpose of providing explosion vent in a power transformer?
- A Air releasing
 - B Heat releasing
 - C Pressure releasing
 - D Moisture releasing

16 What is the function of buchholz relay in power transformer?
A Protection from high temperature
B Protection from moisture entering in oil
C Protection from pressure loading in tank
D Protection from both overloading and short circuit

17 Why primary of potential transformer is wound with thin wire and large number of turns?
A To offer high inductance
B To obtain required voltage ratio
C To regulate the primary current
D To stabilise input and output voltage

18 Why distribution transformers are normally connected as primary in delta and secondary in star?
A To avoid over loading
B To maintain constant voltage
C To reduce transformer losses
D To easy distribution of 3 phase 4 wire system

19 Which type of emf is induced in an ideal two winding transformer?
A Self induced emf
B Mutually induced emf
C Statically induced emf
D Dynamically induced emf

20 How to determine copper loss in a transformer?
A Ratio test
B Impulse test
C Short circuit test
D Open circuit test

21 Why ferrite core is used in radio receivers?
A To reduce the constant losses
B To reduce electric interference
C To increase the quality of sound
D To increase the efficiency of receivers

22 What is the advantage of stepped core arrangement in larger transformers?
A Minimizes copper use
B Reduces hysteresis loss
C Reduces eddy current loss
D Reduces the space for core

23 Which material is used in breather to prevent moisture entering in the transformer oil?
A Silica gel
B Sodium chloride
C Ammonium chloride
D Charcoal and salt mixture

24 What is the disadvantage of auto transformer?
A More losses
B Heavier in weight
C Poor voltage regulation
D Cannot isolate the secondary winding

25 Which cooling method is used in pole mounting distribution transformer?
A Air natural
B Oil natural air blast
C Oil forced air forced
D Oil natural air natural

26 What is the purpose of tap changing in power transformers?
A Maintain primary voltage constant
B Change voltage ratio in distribution
C Maintain secondary voltage constant
D Load the transformer for maximum efficiency

Questions : Level 3

- 1 Calculate the voltage regulation in percentage of the transformer if the no load voltage is 240 volt and full load voltage is 220 volt?
- A 7.20%
 - B 8.30%
 - C 8.71%
 - D 9.09%
-
- 2 How the error in reading of a potential transformer can be reduced?
- A Using thin laminated core
 - B Providing long magnetic path
 - C Using high flux density material
 - D Providing good quality core material
-
- 3 Which construction technique is used to reduce copper loss in larger transformers?
- A Use of laminated core
 - B By reducing core thickness
 - C By using grain oriented core
 - D Use stepped core arrangement
-
- 4 How does the moisture is controlled in breather fitted on power transformers?
- A Using silica gel
 - B Using transformer oil
 - C Using sodium chloride
 - D Using ammonium jelly
-

Module 7: Transformer - Key paper

Questions: Level 1

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

Questions: Level 2

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

Questions: Level 3

SL.No	Key
1	D
2	D
3	D
4	A