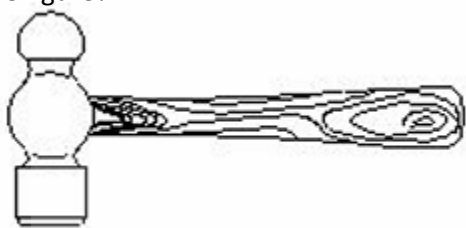


Safety Practice and Hand Tools

1). What is the name of the tool as shown in the figure?



- (A) Claw hammer
- (B) Tack hammer
- (C) Cross pein hammer
- (D) Ball pein hammer

Correct Answer : D User

2). What is the name of the part marked 'X' as shown in the figure?



- (A) Edge
- (B) Heel
- (C) Tang
- (D) Point

Correct Answer : B User

3). What is the name of the file as shown in the figure?



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

Correct Answer : A

4). What is the name of the tool as shown in the figure?



- (A) Wire stripper
- (B) Side cutter
- (C) Pincer
- (D) Gimlet

Correct Answer : C

5). 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 and respond to calls
- (D) Lie totally senseless and do not respond to calls

Correct Answer : D

6). Which is the waste disposal method that produces the heat?

- (A) Landfill
- (B) Composting
- (C) Incineration
- (D) Waste compaction

Correct Answer : C

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

Correct Answer : C User

- 8). What is the use of the pincer?
- (A) Twisting the flexible wires
 - (B) Cutting larger diameter of wires
 - (C) Extracting the pin nails from the wood
 - (D) Holding small objects, where finger cannot reach

Correct Answer : C

- 9). 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

Correct Answer : D

- 10). Which is the physical hazard?

- (A) Smoking
- (B) Vibration
- (C) Corrosive
- (D) Bacteria

Correct Answer : B

- 11). 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

Correct Answer : B

- 12). What is the back ground colour of the warning signs in the safety sign category?

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

Correct Answer : C

- 13). Which criteria must be satisfied for the quality of PPE ' s?

- (A) It should with stand the hazards
- (B) It cannot be used for long period
- (C) Made by non standard material
- (D) Low cost

Correct Answer : A

- 14). Which Personal Protective Equipment (PPE) is used for the protection from fumes?

- (A) Apron
- (B) Goggles
- (C) Ear muff
- (D) Respirator

Correct Answer : D

- 15). Which step of the 5s-concept refers "Standardization"?

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

Correct Answer : D

- 16). 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) Holger - Nelson's back pressure method
- (D) Nelson's arm-lift back pressure method

Correct Answer : B

- 17). Which is the correct sequence of operation to be performed while using the fire extinguisher?

- (A) Pull, Aim, Squeeze, Sweep
- (B) Pull, Aim, Sweep, Squeeze
- (C) Push, Arrange, Squeeze, Sweep
- (D) Push, Arrange, Sweep, Sequence

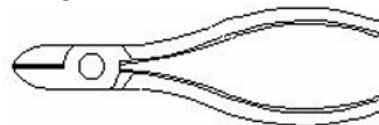
Correct Answer : A

- 18). 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

Correct Answer : C

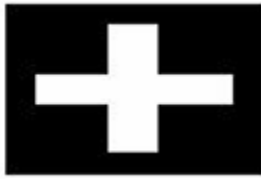
- 19). What is the name of the tool as shown in the figure?



- (A) Nose pliers
- (B) Crimping tool
- (C) Combination pliers
- (D) Diagonal cutting pliers

Correct Answer : D

20). What is the name of the safety sign as shown in the figure?



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

Correct Answer : D

21). Which disposal method of waste save lot of energy?

- (A) Land fill
- (B) Recycling
- (C) Incineration
- (D) Composting

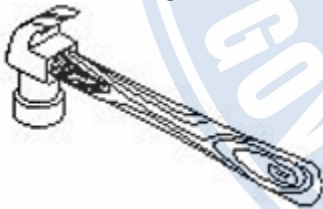
Correct Answer : B

22). Which type of fire extinguisher is used for fire on electrical equipment?

- (A) Halon type
- (B) Foam type
- (C) Gas cartridge water type
- (D) Stored pressure water type

Correct Answer : A

23). What is the name of the hammer as shown in the figure?



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

Correct Answer : A

24). What is the name of the drill bit as shown in the figure?



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

Correct Answer : B

25). 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

Correct Answer : D

Wire joints Soldering and UG cables

1. What is the effect on molten solder due to repeated melting?

- A: Tin content reduced
- B: Lead content reduced
- C: Prevent slug formation
- D: Even solder flowing in joints

Answer: A

2. 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

Answer: D

3. What is the name of the joint as shown in the figure?



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

Answer: A

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

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

Answer: A

5. Why must the soldering iron be kept in a stand when not in use?

- A: It prevents burns and fire
- B: To control excessive heat
- C: To save time
- D: To avoid dry soldering

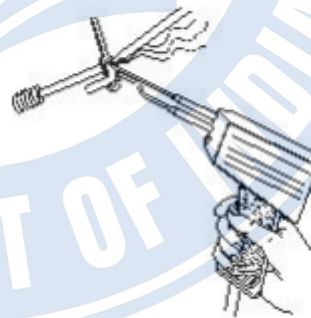
Answer: A

6. 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

Answer: D

7. What is the name of the soldering method as shown in the figure?



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

Answer: C

8. What is the purpose of additional covering over the insulation of insulated conductor?

- A: Increase dielectric strength

- B: To reduce the conductor resistance
C: To reduce the power loss
D: To increase the voltage drop

Answer: A

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

- A: Loop test
B: External growler test
C: Breakdown voltage test
D: Insulation resistance test

Answer: A

10. What is the size of the neutral core of a 90 sq. mm 3½ core U.G cable?

- A: 45 sq.mm
B: 50 sq.mm
C: 70 sq.mm
D: 90 sq.mm

Answer: A

11. Which is a semiconductor material?

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

Answer: D

12. Which effect of the electric current takes place in the neon lamp?

- A: Heating effect
B: Magnetic effect
C: Chemical effect

- D: Gas ionization effect

Answer: D

13. What is the cause for cold solder defect in soldering?

- A: Excessive heating
B: Insufficient heating
C: Incorrect usage of flux
D: High wattage soldering iron

Answer: B

14. Which type of soldering flux is used for soldering aluminium conductors?

- A: Tallow
B: Kynal flux
C: Zinc chloride
D: Sal ammonia

Answer: B

15. 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

Answer: C

16. What does the number 1.40 represent if a stranded conductor is designated as 7/1.40?

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

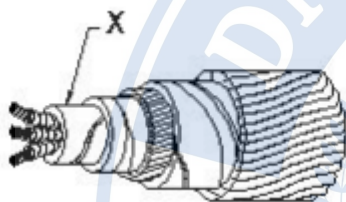
Answer: D

17. What is the advantage of the stranded conductor over the solid conductor?

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

Answer: B

18. What is the name of the part marked 'X' in UG cables as shown in the figure?



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

Answer: D

19. 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

Answer: B

20. 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

Answer: D

21. Which is the property of a good conductor?

- A: Low specific resistance
- B: High dielectric strength
- C: High specific resistance
- D: Low mechanical strength

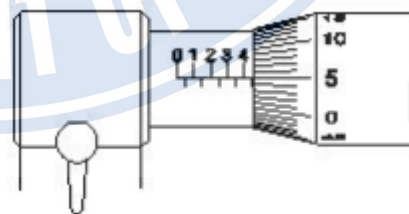
Answer: A

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

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

Answer: B

23. What is the reading of the micrometer as shown in the figure?



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

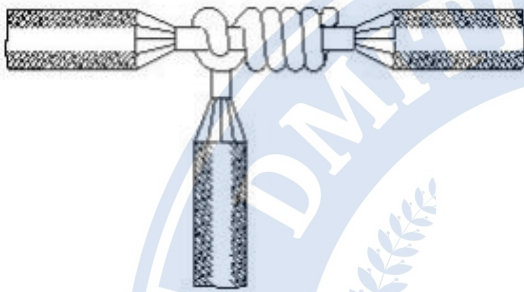
Answer: C

24. What is the use of dipsoldering method?

- A: Hard soldering
- B: Piping and cable work
- C: Soldering miniature components on PCB
- D: Soldering of tin sheets

Answer: C

25. What is the name of the wire joint as shown in the figure?



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

Answer: B

Electrical and Magnetic circuits

1. Which electrical quantity is directly proportional to the eddy current?

- (A) Voltage
- (B) Current
- (C) **Frequency**
- (D) Resistance

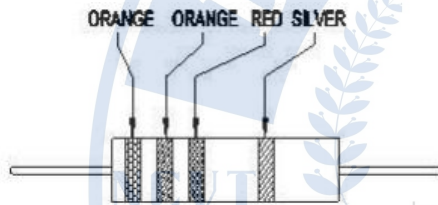
Correct Answer: C

2. What is the reading of the galvanometer in wheat stone bridge at balanced condition?

- (A) High deflection
- (B) Low deflection
- (C) **Null deflection**
- (D) Oscillate

Correct Answer: C

3. What is the value of resistance of the resistor?



- (A) $330 \pm 5\% \text{ Ohm}$
- (B) **$3300 \pm 10\% \text{ Ohm}$**
- (C) $3300 \pm 5\% \text{ Ohm}$
- (D) $33000 \pm 10\% \text{ Ohm}$

4. Which is the diamagnetic substance?

- (A) **Wood**
- (B) Nickel
- (C) Platinum
- (D) Manganese

Correct Answer: A

5. 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

Correct Answer: C

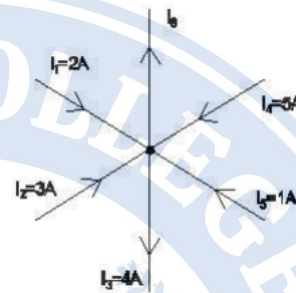
6. Which rule is applied to find the direction of magnetic fields in a solenoid coil?

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

Correct Answer: B

7.

7). What is the value of current in the I_6 ?



(A) 8 A

(B) **7 A**

(C) 5 A

(D) 3 A

Correct Answer: B

8. Which is inversely proportional to the resistance of a conductor?

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

Correct Answer: D

9. What electrical quantities are related with the Ohm's law?

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

Correct Answer: C

10. Which is an application of series circuit?

- (A) **Fuse in circuit**
- (B) Voltmeter connection

- (C) Electrical lamp in homes
(D) Shunt resistor in ammeter

Correct Answer: A

11). Calculate the hot resistance of 200W / 250V rated lamp.

- (A) 31.25Ω
(B) 62.5Ω
(C) **312.5Ω**
(D) 625Ω

Correct Answer : C

12). 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

Correct Answer : B

13). When the no current will flow through the galvanometer in the wheat stone bridge?

- (A) In balanced condition
(B) In unbalanced condition
(C) In short- circuited condition
(D) In open- circuited condition

Correct Answer : A

14). 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

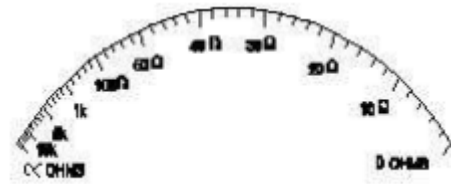
Correct Answer : A

15). What is the effect of inductance if the distance between the turns increases?

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

Correct Answer : B

16). 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

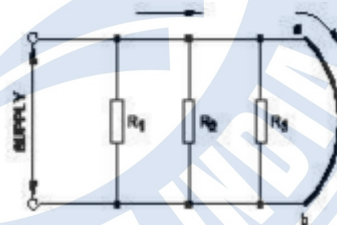
Correct Answer: B

17). What is the effect on the surrounding metal placed in an alternating magnetic field?

- (A) Hysteresis
(B) Skin effect
(C) Eddy current
(D) Dielectric stress

Correct Answer : C

18). What is the effect of the circuit, if points 'ab' are shorted as shown in the figure?



(A) Circuit

- resistance will become zero
(B) Same current will flow in all branches
(C) Supply voltage will increase in each branch
(D) Each branch current is equal to total current

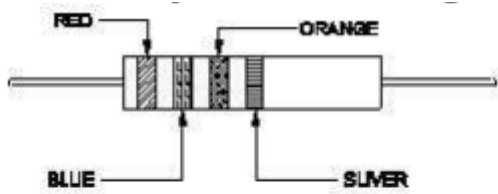
Correct Answer : A

19). Which material is the paramagnetic substance?

- (A) Water
(B) Copper
(C) Bismuth
(D) Graphite

Correct Answer : B

20). Calculate the resistance value of the resistor by colour coding method.



- (A) $23 \times 10^3 \Omega \pm 5\%$
- (B) $26 \times 10^3 \Omega \pm 10\%$
- (C) $32 \times 10^4 \Omega \pm 10\%$
- (D) $37 \times 10^4 \Omega \pm 5\%$

Correct Answer : B

21). Calculate the value of resistance by colour coding method.

[Diagram of a resistor with color bands: Green, Red, Orange, Gold]

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

Correct Answer : C

22). What is the unit of capacitance?

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

Correct Answer : C

23). 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

Correct Answer : B

24). Which type of capacitor is used for space electronics?

- (A) Plastic film type
- (B) Ceramic disc type
- (C) Electrolytic-Aluminium type

(D) Electrolytic-Tantalum type

Correct Answer : D

26). What will happen if a resistor is opened in a series circuit?

- (A) More power loss in the opened resistor
- (B) Full current will flow through the opened resistor
- (C) Total supply voltage will appear across the opened resistor
- (D) No voltage will appear across the opened resistor

Correct Answer : C

27). 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

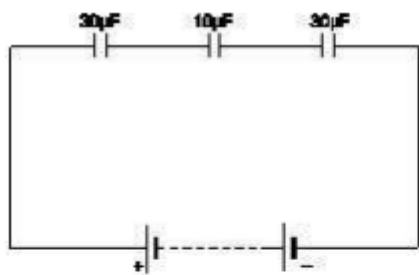
Correct Answer : D

28). How the value of capacitance can be decreased?

- (A) Increasing the plate area
- (B) Decreasing the resistance of the plates
- (C) Increasing the distance between the plates
- (D) Using high dielectric constant material

Correct Answer : C

29). Calculate the total capacitance value in the circuit.



- (A) $0.16 \mu\text{F}$
- (B) **$6 \mu\text{F}$**
- (C) $30 \mu\text{F}$
- (D) $70 \mu\text{F}$

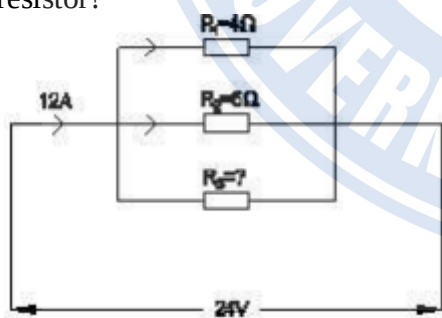
Correct Answer : B

30). What is the formula to find the Electro Motive Force (EMF)?

- (A) EMF = Potential difference – voltage drop
- (B) EMF = Potential difference + voltage drop
- (C) EMF = Potential difference + voltage drop/2
- (D) EMF = Potential difference + 2 x voltage drop

Correct Answer : B

31). Calculate the resistance value in R3 resistor?



- (A) 4 Ohm
- (B) 6 Ohm
- (C) 8 Ohm
- (D) **12 Ohm**

Correct Answer: D

32). Which type of effect occur if current is passed through a spirally wound coil?

- (A) Heating effect

(B) **Magnetic effect**

(C) Chemical effect

(D) Thermal effect

Correct Answer: B

33). 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

Correct Answer: B

34). Which is an application of the series circuit?

(A) Voltmeter connection

(B) Lighting circuits in home

(C) Shunt resistor in ammeter

(D) **Multiplier resistor of a voltmeter**

Correct Answer: D

35). What is the similar term in magnetic circuit for "conductance" in electrical circuit?

(A) Reluctivity

(B) **Permeance**

(C) Reluctance

(D) Permeability

Correct Answer: B

36). 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

Correct Answer: A

37). What is the unit of permeance?

(A) Ampere - turns

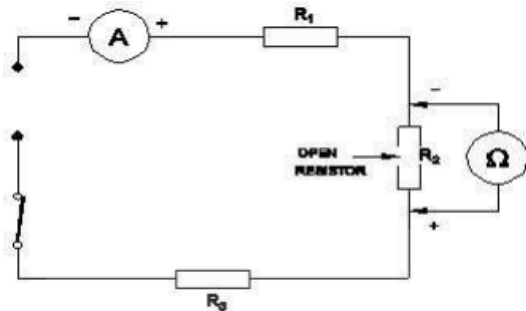
(B) **Weber / Ampere turns**

(C) Ampere turns / Weber

(D) Weber / Square metre

Correct Answer: B

38). What is the reading of the ohmmeter connected across the opened '\$R_2\$' resistor as shown in the circuit? **



- (A) Indicate zero reading
- (B) **Indicate infinite resistance**
- (C) Difference in the value of the resistance of '\$R_1\$' and '\$R_3\$' only
- (D) Sum of the resistance of '\$R_1\$' and '\$R_3\$' only

Correct Answer: B

39). Which method is used for measuring 1 Ohm to 1 megohm range resistance? **

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

Correct Answer: C

40).

40). 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) $L_T = \frac{1}{L_1 + L_2 + L_3}$

Correct Answer: B

41). Which is a paramagnetic substance?

- (A) **Air**
- (B) Steel
- (C) Glass
- (D) Water

Correct Answer : A

42). Which factor changes the permeability of a material?

- (A) Length
- (B) **Flux density**
- (C) Diameter
- (D) Cross sectional area

Correct Answer : B

43). 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

Correct Answer : A

44). 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) $C = \sqrt{VQ}$

Correct Answer : A

45). 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

Correct Answer : B

46). Which factor is determining the value of capacitance in capacitor?

- (A) **Area of the plates**
- (B) Weight of the plates
- (C) Volume of the plates
- (D) Thickness of the plates

Correct Answer : A

47). Which defines that the flux density is always lagging behind the magnetising force?

- (A) **Hysteresis**
- (B) Magnetic intensity
- (C) Magnetic induction
- (D) Residual magnetism

Correct Answer : A

48). What is the value of resistance of an open circuit?

- (A) Zero
- (B) Low
- (C) Medium
- (D) **Infinity**

Correct Answer : D

49). Where the air capacitors are used?

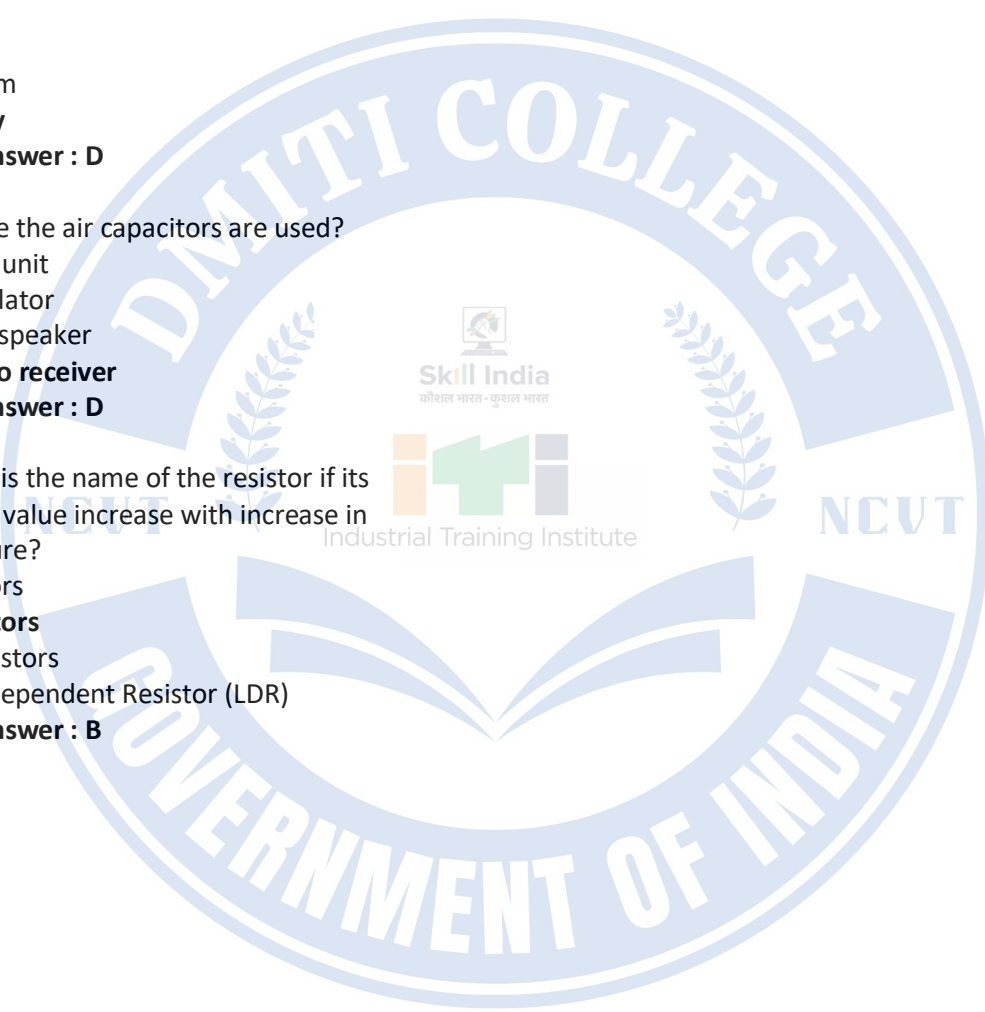
- (A) In VHF unit
- (B) In oscillator
- (C) In loudspeaker
- (D) **In radio receiver**

Correct Answer : D

50). What is the name of the resistor if its resistance value increase with increase in temperature?

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

Correct Answer : B



Electrical and Magnetic circuits

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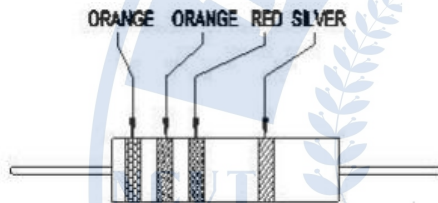
Correct Answer: C

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- (C) **Null deflection**
- (D) Oscillate

Correct Answer: C

3. What is the value of resistance of the resistor?



- (A) $330 \pm 5\% \text{ Ohm}$
- (B) **$3300 \pm 10\% \text{ Ohm}$**
- (C) $3300 \pm 5\% \text{ Ohm}$
- (D) $33000 \pm 10\% \text{ Ohm}$

4. Which is the diamagnetic substance?

- (A) **Wood**
- (B) Nickel
- (C) Platinum
- (D) Manganese

Correct Answer: A

5. 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

Correct Answer: C

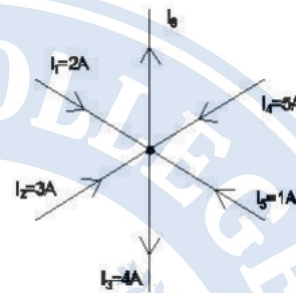
6. Which rule is applied to find the direction of magnetic fields in a solenoid coil?

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

Correct Answer: B

7.

7). What is the value of current in the I_6 ?



(A) 8 A

(B) **7 A**

(C) 5 A

(D) 3 A

Correct Answer: B

8. Which is inversely proportional to the resistance of a conductor?

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

Correct Answer: D

9. What electrical quantities are related with the Ohm's law?

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

Correct Answer: C

10. Which is an application of series circuit?

- (A) **Fuse in circuit**
- (B) Voltmeter connection

- (C) Electrical lamp in homes
(D) Shunt resistor in ammeter

Correct Answer: A

11). Calculate the hot resistance of 200W / 250V rated lamp.

- (A) 31.25Ω
(B) 62.5Ω
(C) **312.5Ω**
(D) 625Ω

Correct Answer : C

12). 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

Correct Answer : B

13). When the no current will flow through the galvanometer in the wheat stone bridge?

- (A) In balanced condition
(B) In unbalanced condition
(C) In short- circuited condition
(D) In open- circuited condition

Correct Answer : A

14). 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

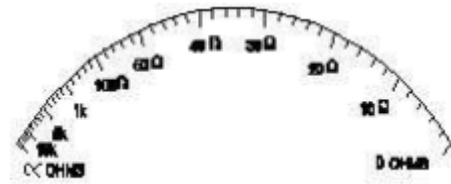
Correct Answer : A

15). What is the effect of inductance if the distance between the turns increases?

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

Correct Answer : B

16). 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

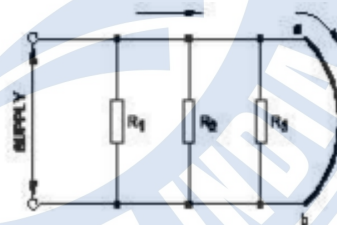
Correct Answer : B

17). What is the effect on the surrounding metal placed in an alternating magnetic field?

- (A) Hysteresis
(B) Skin effect
(C) Eddy current
(D) Dielectric stress

Correct Answer : C

18). What is the effect of the circuit, if points 'ab' are shorted as shown in the figure?



(A) Circuit

- resistance will become zero
(B) Same current will flow in all branches
(C) Supply voltage will increase in each branch
(D) Each branch current is equal to total current

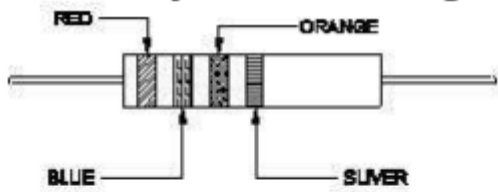
Correct Answer : A

19). Which material is the paramagnetic substance?

- (A) Water
(B) Copper
(C) Bismuth
(D) Graphite

Correct Answer : B

20). Calculate the resistance value of the resistor by colour coding method.



- (A) $23 \times 10^3 \Omega \pm 5\%$
- (B) $26 \times 10^3 \Omega \pm 10\%$
- (C) $32 \times 10^4 \Omega \pm 10\%$
- (D) $37 \times 10^4 \Omega \pm 5\%$

Correct Answer : B

21). Calculate the value of resistance by colour coding method.

[Diagram of a resistor with color bands: Green, Red, Orange, Gold]

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

Correct Answer : C

22). What is the unit of capacitance?

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

Correct Answer : C

23). 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

Correct Answer : B

24). Which type of capacitor is used for space electronics?

- (A) Plastic film type
- (B) Ceramic disc type
- (C) Electrolytic-Aluminium type

(D) Electrolytic-Tantalum type

Correct Answer : D

26). What will happen if a resistor is opened in a series circuit?

- (A) More power loss in the opened resistor
- (B) Full current will flow through the opened resistor
- (C) Total supply voltage will appear across the opened resistor
- (D) No voltage will appear across the opened resistor

Correct Answer : C

27). 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

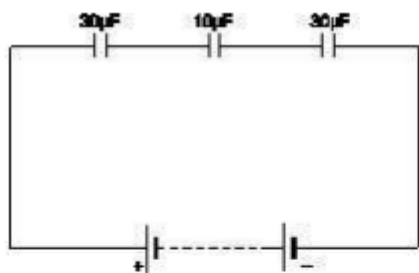
Correct Answer : D

28). How the value of capacitance can be decreased?

- (A) Increasing the plate area
- (B) Decreasing the resistance of the plates
- (C) Increasing the distance between the plates
- (D) Using high dielectric constant material

Correct Answer : C

29). Calculate the total capacitance value in the circuit.



- (A) $0.16 \mu\text{F}$
- (B) **$6 \mu\text{F}$**
- (C) $30 \mu\text{F}$
- (D) $70 \mu\text{F}$

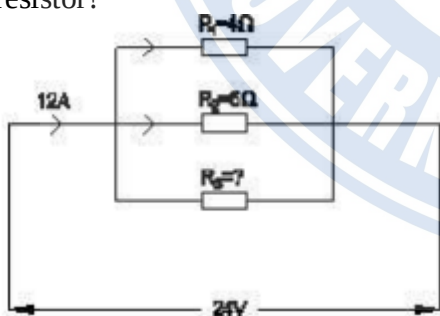
Correct Answer : B

30). What is the formula to find the Electro Motive Force (EMF)?

- (A) EMF = Potential difference – voltage drop
- (B) EMF = Potential difference + voltage drop
- (C) EMF = Potential difference + voltage drop/2
- (D) EMF = Potential difference + 2 x voltage drop

Correct Answer : B

31). Calculate the resistance value in R3 resistor?



- (A) 4 Ohm
- (B) 6 Ohm
- (C) 8 Ohm
- (D) **12 Ohm**

Correct Answer: D

32). Which type of effect occur if current is passed through a spirally wound coil?

- (A) Heating effect

(B) **Magnetic effect**

(C) Chemical effect

(D) Thermal effect

Correct Answer: B

33). 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

Correct Answer: B

34). Which is an application of the series circuit?

(A) Voltmeter connection

(B) Lighting circuits in home

(C) Shunt resistor in ammeter

(D) **Multiplier resistor of a voltmeter**

Correct Answer: D

35). What is the similar term in magnetic circuit for "conductance" in electrical circuit?

(A) Reluctivity

(B) **Permeance**

(C) Reluctance

(D) Permeability

Correct Answer: B

36). 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

Correct Answer: A

37). What is the unit of permeance?

(A) Ampere - turns

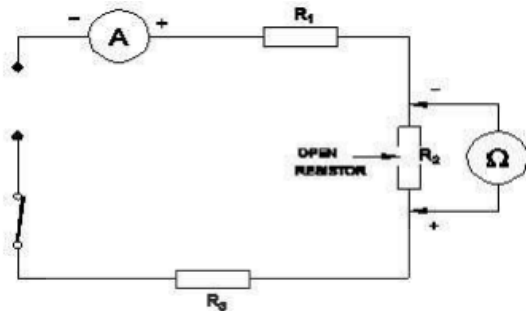
(B) **Weber / Ampere turns**

(C) Ampere turns / Weber

(D) Weber / Square metre

Correct Answer: B

38). What is the reading of the ohmmeter connected across the opened '\$R_2\$' resistor as shown in the circuit? **



- (A) Indicate zero reading
- (B) **Indicate infinite resistance**
- (C) Difference in the value of the resistance of '\$R_1\$' and '\$R_3\$' only
- (D) Sum of the resistance of '\$R_1\$' and '\$R_3\$' only

Correct Answer: B

39). Which method is used for measuring 1 Ohm to 1 megohm range resistance? **

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

Correct Answer: C

40).

40). 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) $L_T = \frac{1}{L_1 + L_2 + L_3}$

Correct Answer: B

41). Which is a paramagnetic substance?

- (A) **Air**
- (B) Steel
- (C) Glass
- (D) Water

Correct Answer : A

42). Which factor changes the permeability of a material?

- (A) Length
- (B) **Flux density**
- (C) Diameter
- (D) Cross sectional area

Correct Answer : B

43). 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

Correct Answer : A

44). 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) $C = \sqrt{VQ}$

Correct Answer : A

45). 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

Correct Answer : B

46). Which factor is determining the value of capacitance in capacitor?

- (A) **Area of the plates**
- (B) Weight of the plates
- (C) Volume of the plates
- (D) Thickness of the plates

Correct Answer : A

47). Which defines that the flux density is always lagging behind the magnetising force?

- (A) **Hysteresis**
- (B) Magnetic intensity
- (C) Magnetic induction
- (D) Residual magnetism

Correct Answer : A

48). What is the value of resistance of an open circuit?

- (A) Zero
- (B) Low
- (C) Medium
- (D) **Infinity**

Correct Answer : D

49). Where the air capacitors are used?

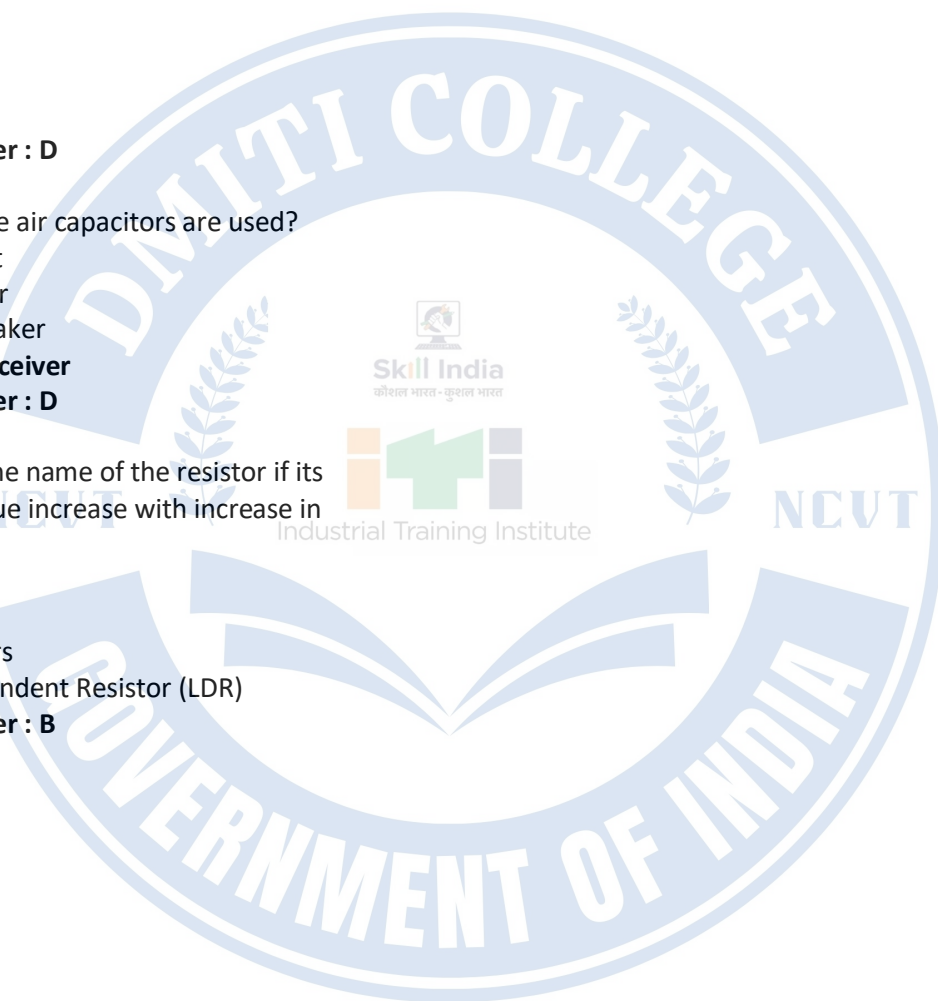
- (A) In VHF unit
- (B) In oscillator
- (C) In loudspeaker
- (D) **In radio receiver**

Correct Answer : D

50). What is the name of the resistor if its resistance value increase with increase in temperature?

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

Correct Answer : B



Single phase and 3 phase AC circuits

1). How will you obtain the positive reading in the wattmeter if it gives negative reading during 3 phase two wattmeter method?

- (A) By interchanging the connections of 3 phase supply
- (B) By disconnecting the connection of current coil of the wattmeter
- (C) **By reversing the connection of pressure coil of the wattmeter**
- (D) By reversing the connection of both pressure coil and current coil of the wattmeter

Correct Answer : C

2). What will be the readings of two watt meters (W_1 the power factor is zero?

- (A) W_1 & W_2 both are positive reading
- (B) W_1 & W_2 both are negative reading
- (C) **W_1 is equal to W_2 but with opposite signs**
- (D) W_1 is unequal to W_2 but with opposite signs

Correct Answer : C

3). What is the formula to calculate the resonance frequency?

- (A) $2\pi\sqrt{LC}$
- (B) $\frac{1}{2\sqrt{LC}}$
- (C) $\frac{1}{2\pi LC}$
- (D) $\frac{1}{2\pi\sqrt{LC}}$

Correct Answer : D

4). What is the reciprocal of reactance in an AC parallel circuit?

- (A) Impedance
- (B) Admittance
- (C) Conductance
- (D) **Susceptance**

Correct Answer : D

5). What is the reactive power in a 3 phase system, if the active power is 4 KW and the apparent power is 5 KVA?

- (A) 1 KVAR

(B) 2 KVAR

(C) **3 KVAR**

(D) 4 KVAR

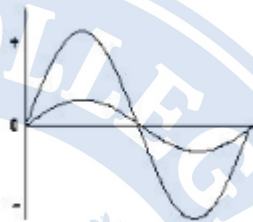
Correct Answer : C

6). 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

Correct Answer : A

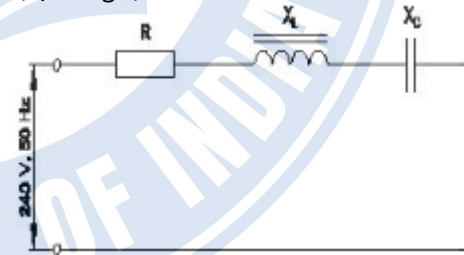
7). What relationship is illustrated in the figure between the current and voltage wave?



- (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

Correct Answer : A

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



(A) 69Ω

(B) 65Ω

(C) **13Ω**

(D) 12Ω

Correct Answer : C

9). What is the ratio between the peak value and RMS value?

- (A) Form factor
- (B) RMS factor
- (C) **Peak factor**
- (D) Effective value

Correct Answer : C

10). What is the main cause for very low 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

Correct Answer : C

11). What is the formula to calculate the three phase power (P) if the line voltage is (VL), line current is (IL) and phase angle is ('θ')?

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

(
Correct Answer : D

12). What is the relation between the line current (IL) and phase current (IP) in delta connected system?

- (A) $I_L = I_P$
- (B) $I_L = 3 I_P$
- (C) **$I_L = \sqrt{3} I_P$**
- (D) $I_L = I_P / \sqrt{3}$

Correct Answer : C

13). How much time is required for a 50 Hz AC supply to complete one cycle?

- (A) 0.1 second
- (B) 0.02 second
- (C) 0.15 second
- (D) 0.45 second

Correct Answer : B

14). What is the condition for resonance in RLC series circuit? (Inductive reactance = 'XL', Capacitive reactance = 'XC')

- (A) $X_L > X_C$
- (B) $X_L < X_C$
- (C) **$X_L = X_C$**
- (D) $X_L > \sqrt{2} X_C$

Correct Answer : C

15). What is the value of the current in neutral conductor in 3 phase star connected unbalanced load?

- (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) The vector sum of current in 3 phases

Correct Answer : D

16). What is the relation between the line voltage (VL) and phase voltage (VP) in star connected system?

- (A) $V_L = \sqrt{3} V_P$
- (B) $V_L = 3 V_P$
- (C) $V_L = V_P / \sqrt{3}$
- (D) $V_L = V_P / 3$

Correct Answer : A

17). Which formula is used to calculate the impedance (Z) of a RLC series circuit?

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

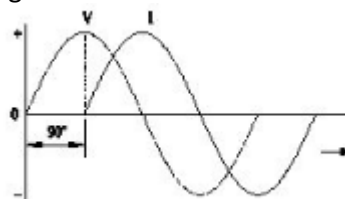
Correct Answer : D

18). When the resonance will occur in R-L-C series circuit?

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

Correct Answer : B

19). Which AC circuit contains the phase relation between voltage (V) and current (I) as shown in figure?



- (A) Pure resistive circuit
 - (B) Pure inductive circuit
 - (C) Resistance and capacitance circuit
 - (D) Pure capacitive circuit
- Correct Answer : B

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

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

Correct Answer : C

Question 21 : Which power measurement method is used for both balanced and unbalanced loads?

Options:

- (A) 2 wattmeter method
- (B) Energy meter method
- (C) Single wattmeter method
- (D) Voltmeter and Ammeter method

Correct Answer: A

Question 22

Question: Calculate the value of admittance (Y) of the RLC parallel circuit connected across 240volts/50Hz AC supply and current of 8 Amps is passed through it?

Options:

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

Correct Answer: C

Question 23

Question: Which 3 phase system requires the artificial neutral to measure the phase voltage?

Options:

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

Correct Answer: C

Question 24

Question: Which load condition the phase currents of a 3 phase system are different?

Options:

- (A) At balanced resistive load
- (B) At balanced inductive load
- (C) At balanced RLC load
- (D) At unbalanced load

Correct Answer: D

Question 25

Question: What is the rated AC voltage for single phase domestic supply in India?

Options:

- (A) 110 V
- (B) 240 V
- (C) 415 V
- (D) 440 V

Correct Answer: B

Question 26

Question: Which conductors are used for the overhead distribution lines?

Options:

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

Correct Answer: C

Question 27

Question: 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.

Options:

- (A) 12.45 KVA
- (B) 57.50 KVA
- (C) 5.75 KVA
- (D) 7.188 KVA

Correct Answer: D

Question 28

Question: When the neutral current is zero in 3 phase system?

Options:

- (A) Balanced star system
- (B) Unbalanced star system
- (C) 3 phase domestic load
- (D) 3 phase commercial load

Correct Answer: A

Question 29

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

Options:

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

Correct Answer: B

Question 30

Question: What is the phase angle difference between any two phases in a 3 phase system?

Options:

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

Correct Answer: B

Question

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

- (A) 0.8
 - (B) 0.5
 - (C) Unity
 - (D) Less than 0.5
- Correct Answer: D

32). What is the formula for the reactive power (Pr) in an AC circuit?

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

Correct Answer : D

Question

33). Which formula is used to calculate the form factor (Kf) in an AC circuit?

- (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) $K_f = \frac{\text{Average value}}{\text{Maximum value}}$

Correct Answer : A

Question

34). What is the value of phase current if the line current is 20 Amp in delta connection?

- (A) 20 A
- (B) 15.6 A
- (C) 11.55 A
- (D) 10 A

Correct Answer: C

Question 27

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

- (A) 0.5 unit
- (B) 1.0 unit
- (C) 1.5 unit

(D) 2.5 unit

Correct Answer: D

Question

36). What is the value of line current if phase current is 20 Amp in star connection?

- (A) 20 A
- (B) 17.3 A
- (C) 11.56 A
- (D) 10 A

Correct Answer: A

Question

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

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

Correct Answer : D

Question

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

- (A) 15.2 KVA
- (B) 11.5 KVA
- (C) 9.2 KVA
- (D) 6.64 KVA

Correct Answer: B

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

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

Correct Answer : C

Question

40). What is the power factor in a 3 phase power measurement, if two wattmeters are showing equal and positive readings?

- (A) 0
- (B) 1
- (C) 0.5
- (D) 0.8

Correct Answer: B

41). 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

Correct Answer : C

42). 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

Correct Answer : B

43). What is the formula to find the 3 phase reactive power (PR) if the line voltage is 'VL' and line current is 'IL'?

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

Correct Answer : C

44). How the resonance frequency (fr) 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

Correct Answer : B

45). What is the form factor (Kf) for the sinusoidal AC?

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

Correct Answer : B

46). What is the standard frequency of AC supply in India?

- (A) 25 Hz
- (B) 60 Hz
- (C) 50 Hz
- (D) 75 Hz

Correct Answer : C

47). Which load condition the phase currents of a 3 phase circuit are same?

- (A) At balanced load
- (B) At unbalanced resistive load
- (C) At unbalanced inductive load
- (D) At unbalanced RLC load

Correct Answer : A

48). What is the phase displacement in a single phase AC circuit?

- (A) 90°
- (B) 120°
- (C) 180°
- (D) 270°

Correct Answer : A

49). How the lagging 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

Correct Answer : D

50). What is the total power by two wattmeter (W₁ & W₂) method, if one of the wattmeter (W₂) reading is taken after reversing?

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

Correct Answer : C

Batteries and Solar Cells

1). Which material is used to make negative plates in lead acid battery?

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

Correct Answer : B

2). Which is used as a top layer of a solar cell?

- (A) Silver
- (B) Silicon
- (C) Copper
- (D) Aluminium

Correct Answer : B

3). How the capacity of the batteries are specified?

- (A) Volt
- (B) Watt
- (C) Volt Ampere
- (D) Ampere hour

Correct Answer : D

4). Which device converts the sunlight into electrical energy?

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

Correct Answer : A

5). What is the effect of buckling defect in a lead acid battery?

- (A) Bending of the electrodes
- (B) Reducing the density of electrolyte
- (C) Increasing the density of electrolyte
- (D) Increasing the internal resistance

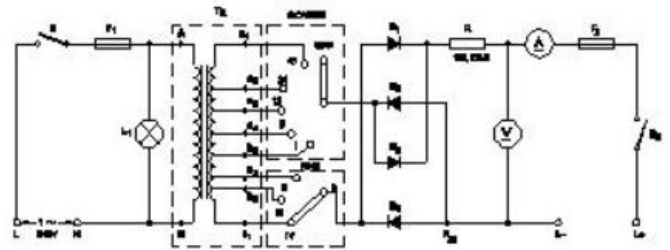
Correct Answer : A

6). 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

Correct Answer : A

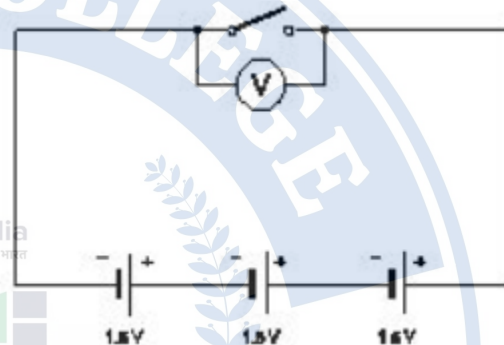
7). What is the function of fine selector switch in battery charger?



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

Correct Answer : A

8). What is the total output voltage of the circuit as shown in the figure?



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

Correct Answer : D

9). Which is used as a positive electrode in a dry cell?

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

Correct Answer : B

10). What is the name of the defect that leads to bending of plates in secondary cells?

- (A) Buckling
- (B) Local action
- (C) Partial short
- (D) Hard sulphation

Correct Answer : A

11). What is the purpose of the 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 circuit between the positive and negative plates

(D) To keep the positive and negative plate in a sequence array

Correct Answer : C

12). What is the reaction that takes place in negative plate of lead acid battery after complete discharging?

- (A) Become sponge lead(P)
- b) (B) Become lead peroxide (PbO_2)
- (C) Become lead sulphate (PbSO_4)
- (D) Water

Correct Answer : C

13). Which electrolyte used in carbon zinc dry cells?

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

Correct Answer : B

14). What is the Electro Chemical Equivalent (ECE) of silver?

- (A) 0.001182 mg/coulomb
- (B) 0.01182 mg/coulomb
- (C) 0.1182 mg/coulomb
- (D) 1.1182 mg/coulomb

Correct Answer : D

15). Which part is losing its weight during the electrolysis?

- (A) Cathode
- (B) Anode
- (C) Electrolyte
- (D) Separator

Correct Answer : B

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

- (A) Barometer
- (B) Hydrometer
- (C) Anemometer
- (D) High rate discharge tester

Correct Answer : B

17). What will be 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

Correct Answer : C

18). What is the effect on output power with respect to the temperature of solar cells?

- (A) No effect due to change in temperature
- (B) Increases with increase in temperature

(C) Decreases with increase in temperature

(D) Decreases with decrease in temperature

Correct Answer : C

19). Which cell is most often used in digital watches?

- (A) Voltaic cell
- (B) Lithium cell
- (C) Mercury cell
- (D) Lead acid cell

Correct Answer : C

20). 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

Correct Answer : A

21). How the positive plate changes, after the complete charging of lead acid battery?

- (A) Sponge lead (Pb)
- (B) Lead peroxide (PbO_2)
- (C) Lead sulphate (PbSO_4)
- (D) Water

Correct Answer : B

22). What happen if battery is wrongly connected during the charging?

- (A) Draws very high current
- (B) Draws very low current
- (C) No current flow
- (D) Works normally

Correct Answer : A

23). What is the Electro Chemical Equivalent (ECE) of copper?

- (A) 0.329 mg/coulomb
- (B) 0.329 g/coulomb
- (C) 1.1182 mg/coulomb
- (D) 1.1182 g/coulomb

Correct Answer : A

24). What is the purpose of the hydrometer is used during charging of battery?

- (A) To determine the AH capacity
- (B) To measure the battery voltage
- (C) To measure the battery current
- (D) To measure the specific gravity of electrolyte

Correct Answer : D

25). What is the unit of electric charge?

- (A) Volt
- (B) Watt
- (C) Ampere

(D) Coulomb
Correct Answer : D



IE rules on electrical system and Wiring accessories

1). Where the Iron Clad Double Pole (ICDP) main switch is used?

- (A) Large industrial installations
- (B) Large commercial installations
- (C) Single phase domestic installations
- (D) Three phase power circuit installations

Correct Answer : C

2). Which type of circuit breaker is used above 200 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)

Correct Answer : C

3). Which type of accessories, does the fuse comes under?

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

Correct Answer : C

4). What is an application of 'L' series type MCB's?

- (A) Geysers
- (B) Locomotives
- (C) Halogen lamps
- (D) Air conditioners

Correct Answer : A

5). How many two way switches along with intermediate switch are used to control one lamp from three different places?

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

Correct Answer : B

6). Which electrical accessory belongs to general classification of accessories?

- (A) Fuse
- (B) Ceiling rose
- (C) Intermediate switch
- (D) Pendent lamp holder

Correct Answer : B

7). 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

Correct Answer : C

8). Where the flexible cords are used in the domestic installation?

- (A) In concealed wiring

(B) In switch box wiring

(C) In DB box wiring

(D) In portable appliances

Correct Answer : D

9). What is the expansion of MCCB?

- (A) Moulded Case Circuit Breaker
- (B) Miniature Case Circuit Breaker
- (C) Mini Case Circuit Breaker
- (D) Micro Case Circuit Breaker

Correct Answer : A

10). What is the maximum PVC conduit size to make safe cold bending?

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

Correct Answer : C

11). Which type of relay can be operated on both A.C and D.C supply?

- (A) Ferred relay
- (B) Thermal relay
- (C) Impulse relay
- (D) Dry reed relay

Correct Answer : C

12). What is the name of the BIS symbol as shown in the figure?



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

Correct Answer : C

13). Which type of conduit is used for gas tight explosive installation?

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

Correct Answer : B

14). What is the maximum load on each power sub-circuit as per BIS?

- (A) 2000 W
- (B) 3000 W
- (C) 5000 W
- (D) 6000 W

Correct Answer : B

15). What is the name of the conduit accessory as shown in the figure?



- (A) Solid bend
- (B) Solid elbow
- (C) Inspection Bend
- (D) Inspection junction box

Correct Answer : C

Answer : D Suggestion 16). How many two way switches minimum required in godown wiring circuit to control four lamps?

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

Correct Answer : B

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

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

Correct Answer : B

18). What is the name of the accessory used in electrical appliances as shown in the figure?



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

Correct Answer : C

19). What is the function of circuit breaker?

- (A) Connects the circuit automatically at abnormal condition
- (B) Makes the circuit automatically at abnormal condition
- (C) Breaks the circuit automatically at abnormal condition
- (D) Breaks the circuit automatically at normal condition

Correct Answer : C

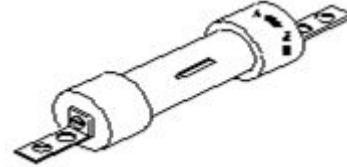
20). Which type of insulation tape is used for domestic wiring?

- (A) Rubber tape
- (B) Friction tape
- (C) PVC tape
- (D) Varnished cambric tape

Correct Answer : C

21). What is the type of the fuse as shown in the figure?

- (A) Rewirable kit-kat fuses



(B)

- (B) High rupturing capacity fuse
- (C) Ferrule contact cartridge fuse
- (D) Diazed screw type cartridge fuse

Correct Answer : B

22). What is the effect on the low current rated cable used to connect the higher load?

- (A) Power loss decreases
- (B) Voltage drop remains same
- (C) Voltage drop decreases
- (D) Cable damage due to heat

Correct Answer : D

23). Why separate wiring is recommended for home theatre wiring and power wiring?

- (A) To avoid the mechanical vibration
- (B) To reduce the power loss
- (C) To avoid the electrical interference
- (D) To maintain the voltage level constant

Correct Answer : C

24). Which type of lamp holder is used for the incandescent lamps of above 300 watts?

- (A) Edison screw type holder
- (B) Goliath Edison screw type holder
- (C) Porcelain angle holder
- (D) Porcelain batten holder

Correct Answer : B

25). 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

Correct Answer : D

26). Which types of accessories are used to tap the supply for a portable appliance?

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

Correct Answer : C

27). What is the disadvantage of the tree system of wiring of Multistoried building?

- (A) Easy load balancing
- (B) Constant voltage distribution
- (C) Offers minimum voltage drop
- (D) Difficult in fault finding with many fuses

Correct Answer : D

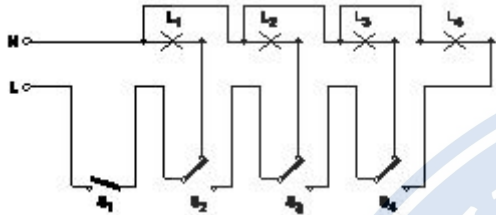
28). What is the name of the symbol indicates as shown in the figure?



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

Correct Answer :

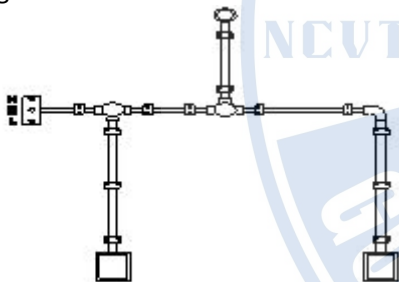
29). What is the name of the circuit as shown in the figure?



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

Correct Answer : C

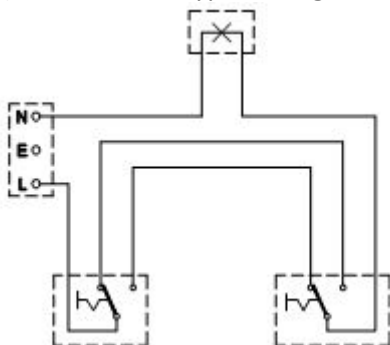
30). What is the name of the diagram as shown in the figure?



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

Correct Answer : C

31). What is the type of diagram as shown in the figure?



- (A) Wiring diagram
- (B) Circuit diagram
- (C) Installation plan

(D) Layout diagram

Correct Answer : A

32). Which is employed in circuit breaker for the thermal over load protection?

- (A) Bimetallic strip
- (B) No volt coil
- (C) Mechanical vibration
- (D) Magnetic repulsion

Correct Answer : A

33). Which electrical equipment can be connected with 'L' series MCB?

- (A) General lighting
- (B) Motors
- (C) Air conditioner
- (D) Halogen lamp

Correct Answer : A

34). What is the purpose of tin coating on the copper fuse wire?

- (A) Withstand high temperature
- (B) Increase the fusing factor
- (C) Prevent the oxidation of copper wire
- (D) Increase the mechanical strength

Correct Answer : C

35). 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

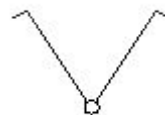
Correct Answer : A

36). Which type of protection the ELCB can provide?

- (A) Short circuit
- (B) Ground fault
- (C) Open circuit
- (D) Over load

Correct Answer : B

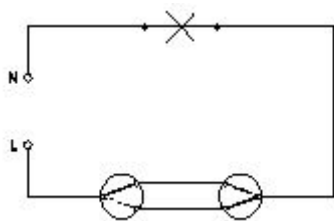
37). What is the name of the symbol as shown in the figure?



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

Correct Answer : D

38). What is the name of the wiring diagram?



- (A) Staircase wiring
- (B) Godown wiring
- (C) Hostel wiring
- (D) Tunnel wiring

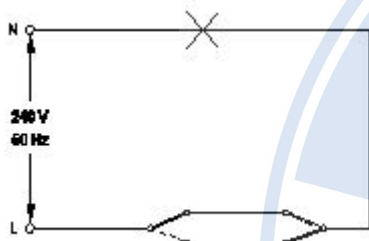
Correct Answer : A

39). What is the megger reading in a dead short wiring installation?

- (A) 0 MW
- (B) 1 MW
- (C) 500 MW
- (D) Infinity

Correct Answer : A

40). Which type of switch is used in the circuit as shown in the figure?



- (A) One way switch
- (B) Two way switch
- (C) Intermediate switch
- (D) Multiposition switch

Correct Answer : B

41). Which is the application of DC series MCB?

- (A) AC motor
- (B) Synchronous motor
- (C) Locomotives
- (D) Air conditioners

Correct Answer : C

42). What is the expansion of AWG?

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

Correct Answer : A

43). What is the advantage of the concealed wiring?

- (A) Easy to maintain
- (B) Less voltage drop
- (C) High insulation resistance
- (D) Protection against moisture

Correct Answer : D

44). Which electrical device is the coarse excess current protection?

- (A) Cartridge fuses
- (B) Rewirable fuses
- (C) Miniature Circuit Breaker (MCB)
- (D) High Rupturing Capacity (HR) Fuses

Correct Answer : B

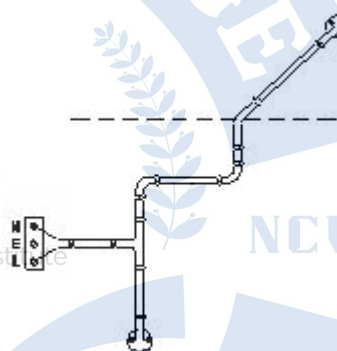
45). What is the name of the symbol as shown in the figure?



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

Correct Answer : D

46). What is the type of wiring as shown in the figure?



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

Correct Answer : B

47). What protection offered by residual current circuit breaker?

- (A) Protection from the electric shock
- (B) Protection from the over load
- (C) Protection from the short circuit
- (D) Protection from the over voltage

Correct Answer : A

48). Which classification of accessory the ceiling rose is classified?

- (A) Outlet accessories
- (B) Safety accessories
- (C) Holding accessories
- (D) General accessories

Correct Answer : D

49). What is the tool used to bend the metal conduits?

- (A) Hickey

- (B) Coupler
- (C) Combination pliers
- (D) Bench vice

Correct Answer : A

50). What is the purpose of the ELCB?

- (A) Protects the equipment from over current
- (B) Protects the equipment from leakage current
- (C) Protects the equipment from short circuit
- (D) Protects the equipment from over voltage

Correct Answer : B



Wiring System and Estimation

1). What is the type of test conducted in the wiring installation as shown in the figure?

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

Correct Answer : D

2). Which factor decides the thickness of insulation of the cables?

- (A) Current
- (B) Temperature
- (C) Power factor
- (D) Voltage

Correct Answer : D

3). What is the minimum cross- sectional area of copper conductor for flexible cord as per BIS?

- (A) 2.5 mm²
- (B) 1.5 mm²
- (C) 1 mm²
- (D) 0.5 mm²

Correct Answer : D

4). Which instrument is used to test the insulation of new domestic wiring installation?

- (A) Multimeter
- (B) Megger
- (C) Shunt type ohmmeter
- (D) Series type ohmmeter

Correct Answer : B

5). Where the service mains are to be connected in the domestic installation?

- (A) IC cut out
- (B) Main switch
- (C) Energy meter
- (D) Distribution board

Correct Answer : C

6). Which switch is used to control one lamp from three different places?

- (A) Pull switch
- (B) Intermediate switch
- (C) Bell push switch
- (D) Toggle switch

Correct Answer : B

7). What is the reason of the lamps are glowing dim and motor running slow in a domestic wiring circuit?

- (A) Open circuit in the neutral line
- (B) Short circuit between conductors
- (C) Low voltage fault
- (D) Open circuit in the earth conductor

Correct Answer : C

8). Where the pipe jumper is used in the wiring?

- (A) To make holes on wooden board
- (B) To make pilot holes on the wall for fixing accessories
- (C) To make through holes on the wall
- (D) To chip the wall for fixing switch boxes

Correct Answer : C

9). What is the formula to find voltage drop of a A.C single phase wiring circuit?

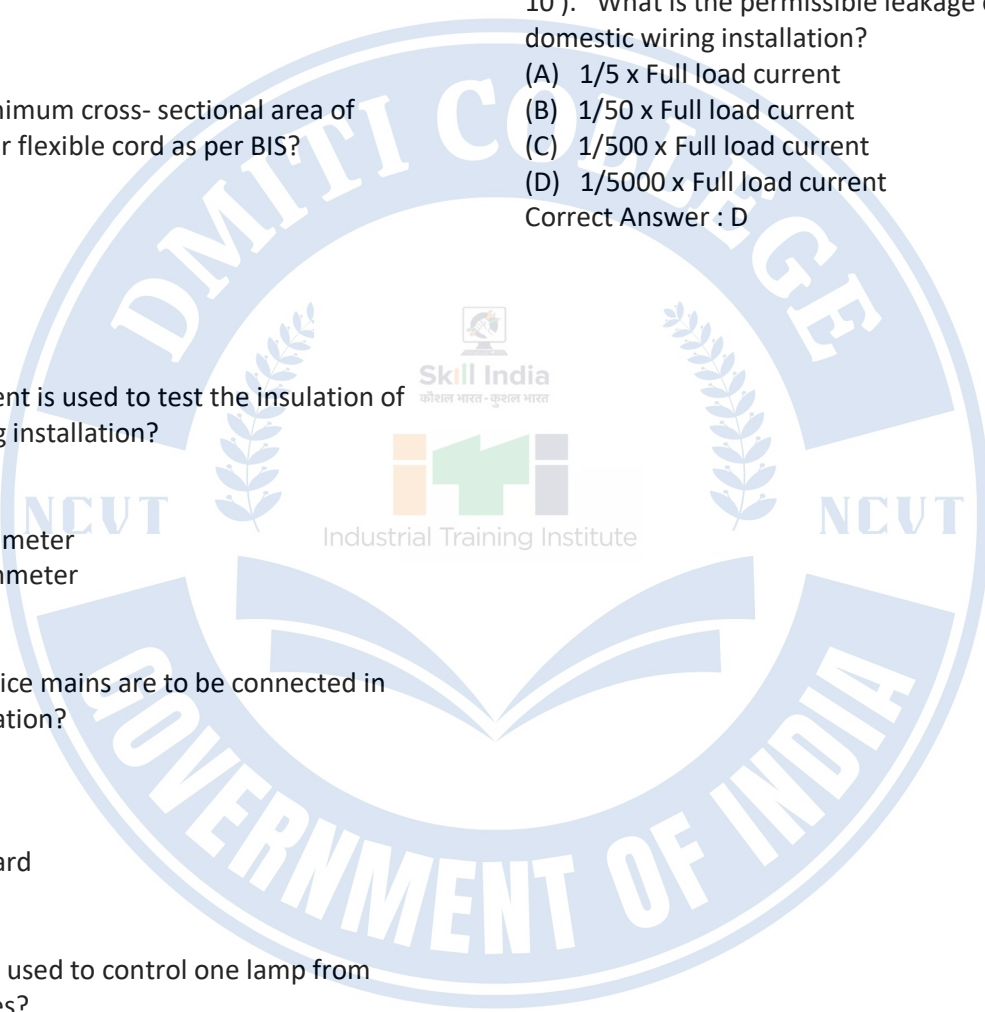
- (A) Voltage drop = IR volt
- (B) Voltage drop = I²R volt
- (C) Voltage drop = I/R volt
- (D) Voltage drop=IR/2 volt

Correct Answer : A

10). 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

Correct Answer : D



Earthing and Illumination system

1). Why the A.C is used in electrodes of earth resistance tester to measure the earth resistance?

- (A) Regulate the current
- (B) Increase the voltage drop
- (C) Decrease the voltage drop
- (D) Avoid electrolytic emf interference

Correct Answer : D

2). 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

Correct Answer : B

3). What is the purpose of ignitor in high pressure sodium vapour lamp circuit?

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

Correct Answer : D

4). Which method is used to reduce the value of earth resistance?

- (A) By reducing the size of earth electrode
- (B) By decreasing the depth of earth electrodes
- (C) By pouring water in the earth pit at repeated intervals
- (D) By connecting a number of earth electrodes in series

Correct Answer : C

5). What happens if the starter of a glowing tube light is removed?

- (A) Switch off immediately
- (B) Glow continuously
- (C) Gives low light output
- (D) Glow intermittently

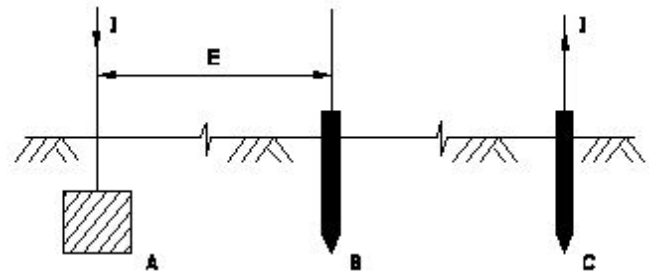
Correct Answer : B

6). 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

Correct Answer : A

7). Which method of earth resistance measurement is illustrated as shown in the figure?



- (A) Fall of current
- (B) Fall of potential
- (C) Current dividing
- (D) Rise of current

Correct Answer : B

8). Why the pointer is anywhere on the scale as the megger is kept idle?

- (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

Correct Answer : A

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

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

Correct Answer : D

10). Which type of light fitting has glare effect?

- (A) Semi direct type
- (B) Semi indirect type
- (C) Direct lighting type
- (D) Indirect lighting type

Correct Answer : C

11). What is the function of leak transformer in high pressure sodium vapour lamp circuit?

- (A) Reduce the starting current
- (B) Increase the working current
- (C) Increase the working voltage
- (D) Ignite the high voltage initially

Correct Answer : D

12). What is the purpose of choke used in fluorescent lamp circuit?

- (A) Stepdown the voltage at the starting and increase the current
- (B) Stepup the voltage at the starting and increase the frequency
- (C) Stepup the voltage at the starting and regulate the current
- (D) Stepdown the voltage at the starting and regulate the current Correct

Answer : C

13). Which term refers that the luminous flux reaching a plane surface perpendicularly per unit area?

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

Correct Answer : B

14). 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

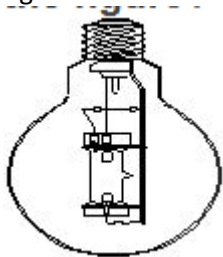
Correct Answer : A

15). What is the S.I unit of luminous intensity?

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

Correct Answer : C

16). What is the name of the lamp as shown in the figure?



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

Correct Answer : D

17). Which method is used to reduce the earth resistance value of a existing earth electrode?

- (A) Increasing the length of electrode
- (B) Keeping the earth pits in wet condition always
- (C) Adding more sand and charcoal in earth pits
- (D) Increasing the diameter of earth electrode

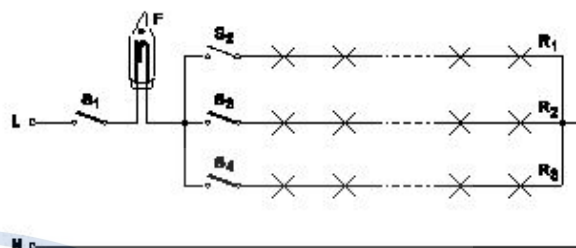
Correct Answer : B

18). What is the working temperature of tungsten filament vacuum lamp?

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

Correct Answer : D

19). 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

Correct Answer : D

20). What is the expansion of ECC?

- (A) Earth Conductor Continuity
- (B) Earth Continuity Conductor
- (C) Earth Carrying Conductor
- (D) Earth Continuity Cable Correct

Answer : B

21). Why the system earthing is different from the equipment earthing?

- (A) It protects human only
- (B) It protects equipment only
- (C) It is associated with current carrying conductors
- (D) It is associated with non-current carrying conductors

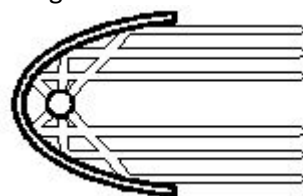
Correct Answer : C

22). What is the unit of luminous flux?

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

Correct Answer : B

23). What is the name of the reflector as shown in the figure?



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

Correct Answer : C

24). Which device provides the ignition voltage and act as choke in a HPSV lamp?

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

Correct Answer : C

25). Which is proportional for the deflection of ohmmeter needle in earth resistance tester?

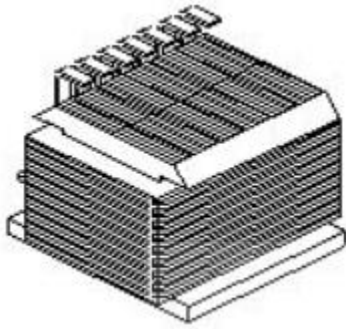
- (A) Current in current coil
- (B) Current in potential coil
- (C) Speed of the handle rotation
- (D) Ratio of the current in two coils

Correct Answer : D



Measuring instruments, Testing and Calibration

1). What is the type of frequency meter as shown in the figure?



- (A) Weston type
- (B) Ratio meter type
- (C) Electro dynamic type
- (D) Mechanical resonance type

Correct Answer : D

2). How the creeping error is controlled in energy meter?

- (A) By reducing rated voltage
- (B) By increasing the inductive load
- (C) By removing the brake magnet
- (D) By drilling two holes diametrically opposite on disc

Correct Answer : D

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

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

Correct Answer : B

4). 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

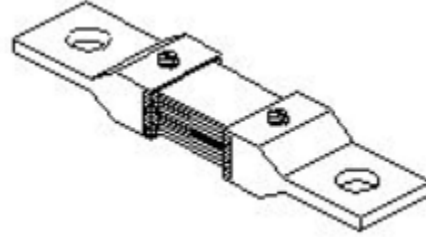
Correct Answer : B

5). Which quantity is measured by an electrodynamic type instrument?

- (A) Power
- (B) Speed
- (C) Capacitance
- (D) Resistance

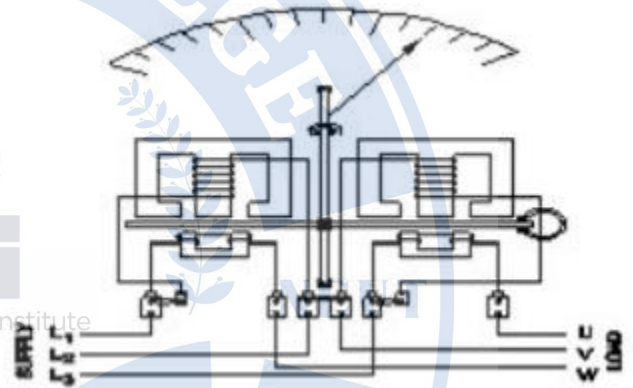
Correct Answer : A

6). What is the name of the shunt resistance material as shown in the figure?



- (A) Copper
 - (B) Eureka
 - (C) Nichrome
 - (D) Manganin
- Correct Answer : D

7). What is the type of wattmeter as shown in the figure?



- (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
- Correct Answer : B

8). Which material is used to make the control spring in measuring instruments?

- (A) Steel
- (B) Silver
- (C) Tinned copper
- (D) Phosphor bronze

Correct Answer : D

9). 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

Correct Answer : B

10). Which factor is affected due to the loading effect on measuring instruments?

- (A) High influence error
- (B) High sensitivity
- (C) Low sensitivity
- (D) Low influence error

Correct Answer : C

11). What is the type of the instrument as shown in the figure?



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

Correct Answer : A

12). Which power of AC supply is measured by the wattmeter?

- (A) Instantaneous power
- (B) True power
- (C) Apparent power
- (D) Reactive power

Correct Answer : B

13). 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

Correct Answer : A

14). What is the unit of sensitivity in voltmeter?

- (A) Volt / ohm
- (B) Ohm / volt
- (C) Ohm metre
- (D) Ohm / metre

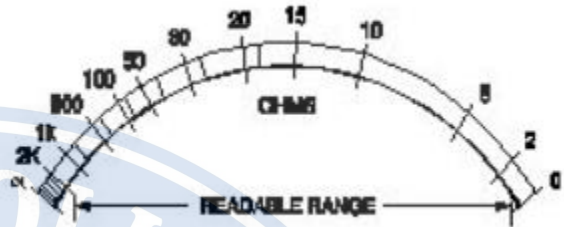
Correct Answer : B

15). Why two diagonally opposite 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

Correct Answer : D

16). What is the name of the scale as shown in the figure?



- (A) Linear scale
- (B) Fine scale
- (C) Extended scale
- (D) Non-linear scale

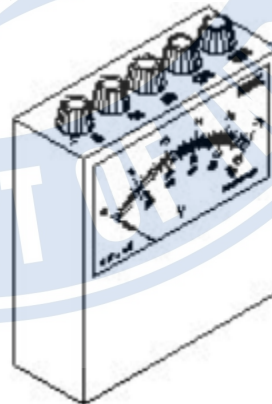
Correct Answer : D

17). Which instrument is an example of an integrating instrument?

- (A) AC voltmeter
- (B) DC voltmeter
- (C) Energy meter
- (D) Tangent galvanometer

Correct Answer : C

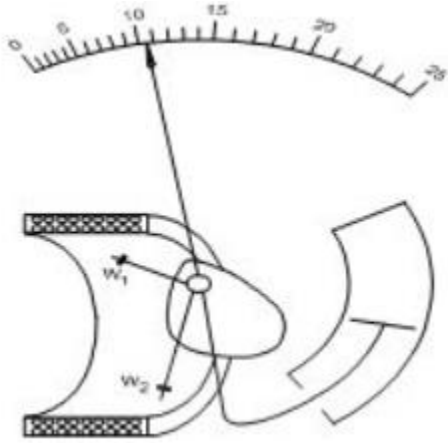
18). What is the name of meter as shown in the figure?



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

Correct Answer : D

19). What is the type of instrument as shown in the figure?



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

Correct Answer : C

Answer : A User
 Answer : A Suggestion 20). What is the name of the error if the energy meter disc rotating continuously on no load?

- (A) Speed error
- (B) Phase error
- (C) Friction error
- (D) Creeping error

Correct Answer : D

21). Which force is required to move the pointer from the zero position in an indicating instrument?

- (A) Controlling force
- (B) Deflecting force
- (C) Air friction damping
- (D) Eddy current damping

Correct Answer : B

22). Which type of energy meter works with neutral connection?

- (A) Three phase two element
- (B) Three phase three element
- (C) Single phase single element
- (D) Three phase two element with CT & PT

Correct Answer : C

23). Which electrical quantity is unable to measure directly by the multimeter?

- (A) AC voltage
- (B) Resistance
- (C) Power
- (D) DC voltage

Correct Answer : C

24). Why the scale of the moving iron instrument is having non-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

Correct Answer : C

25). Which is an absolute instrument?

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

Correct Answer : D

Domestic Appliances

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

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

Correct Answer : A

2). Which electrical effect works on electric bells?

- (A) Heating effect
- (B) Magnetic effect
- (C) Chemical effect
- (D) Gas ionization effect

Correct Answer : B

3). Calculate the heat generated in a electric heater of 1000 watt, 240 volt, worked for 5 minutes.

- (A) 0.5 Kilo calories
- (B) 1.0 Kilo calories
- (C) 1.6 Kilo calories
- (D) 2.1 Kilo calories

Correct Answer : C

4). What is the reason for the AC table fan runs very hot?

- (A) Defective starting winding
- (B) Defective centrifugal switch
- (C) Defective regulator
- (D) Wornout bushes

Correct Answer : A

5). Which material is used to make the heating element of cooking range?

- (A) Silver
- (B) Copper
- (C) Nichrome
- (D) Aluminium

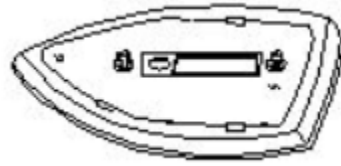
Correct Answer : C

6). What is the function of stirrer motor in micro wave oven?

- (A) Draws cooling air inside
- (B) Spreads the heat uniformly
- (C) Exhausts the hot air outside
- (D) Revolves and reflects the electromagnetic energy

Correct Answer : D

7). What is the name of the part of electric iron as shown in the figure?



- (A) Sole plate
- (B) Pressure plate
- (C) Mica insulation
- (D) Asbestos sheet

Correct Answer : A

8) 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 the cooking frequency
- (D) Converts the microwave energy to electrical energy

Correct Answer : C

9). 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

Correct Answer : D

10). What is the temperature range, maintained by thermostat in geyser?

- (A) 60° C to 65° C
- (B) 10° C to 150° C
- (C) 0° C to 130° C
- (D) 0° C to 50° C

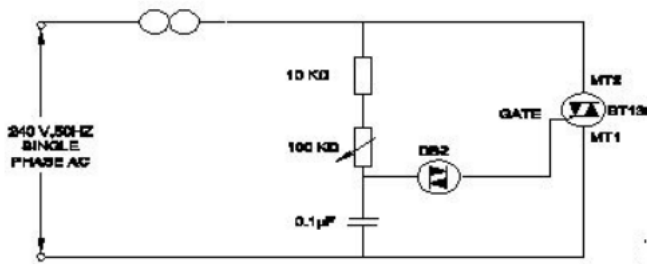
Correct Answer : A

11). What is the fault in a food mixer if it runs intermittently?

- (A) Worn out brushes
- (B) Armature winding open
- (C) Field winding open
- (D) Field winding partially short

Correct Answer : A

12). What is the name of the circuit as shown in the figure?



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

Correct Answer : A

13). What is the function of the neutral conductor in AC supply system?

- (A) Provides the return current path
- (B) Increases the voltage level
- (C) Reduces the voltage drop in wiring
- (D) Maintains the load current constant

Correct Answer : A

14). Which material is used as heat insulator in between the outer casing and inner tank of a geyser?

- (A) Plastic
- (B) Glass wool
- (C) Paper
- (D) PVC

Correct Answer : B

15). Which type of motor is used in the wet grinder?

- (A) Universal motor
- (B) Repulsion motor
- (C) Capacitor start induction run motor
- (D) Shaded pole motor

Correct Answer : C

16). Which formula is used to calculate the heat generated as per Joules law?

- (A) Heat generated = $IRT / J \text{ cal}$
- (B) Heat generated = $I^2RT / J \text{ cal}$
- (C) Heat generated = $IR^2T / J \text{ cal}$
- (D) Heat generated = $(IR)^2 T / J \text{ cal}$

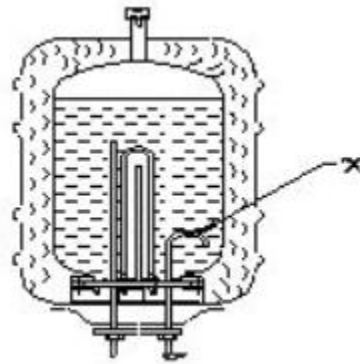
Correct Answer : B

17). Which effect of electric current takes places in the cooking range?

- (A) Magnetic effect
- (B) Heating effect
- (C) Gas ionization effect
- (D) Chemical effect

Correct Answer : B

18). What is the purpose of U bend marked as 'X' in geyser as shown in the figure?



- (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

Correct Answer : A

19). What is the defect in a single phase capacitor start pump motor if it runs with slow speed?

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

Correct Answer : A

20). What is the function of the rotary switch in food mixer?

- (A) Over load protection
- (B) For reverse rotation
- (C) Over current protection
- (D) Speed selection

Correct Answer : D

Transformers

- 1). What is the function of conservator tank in a 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
- Correct Answer : D

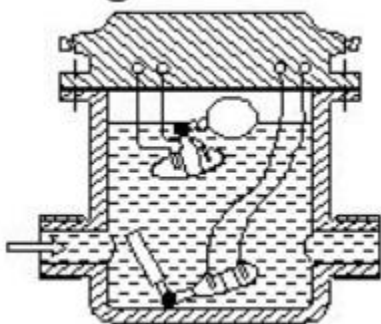
- 2). Which is determined by the crackle test of transformer oil?
- (A) Acidity
 - (B) Moisture
 - (C) Viscosity
 - (D) Dielectric strength
- Correct Answer : B

- 3). Which loss of the transformer is determined by the short circuit test?
- (A) Copper loss
 - (B) Windage loss
 - (C) Hysteresis loss
 - (D) Eddy current loss
- Correct Answer : A

- 4). What is the purpose of tap changer in the power transformers?
- (A) Maintain the primary voltage constant
 - (B) Maintain the voltage ratio constant
 - (C) Maintain the secondary voltage constant
 - (D) Load the transformer for maximum efficiency
- Correct Answer : C

- 5). How to determine the core loss in a transformer?
- (A) By ratio test
 - (B) By impulse test
 - (C) By short circuit test
 - (D) By open circuit test
- Correct Answer : D

- 6). What is the name of the part in power transformer as shown in the figure?

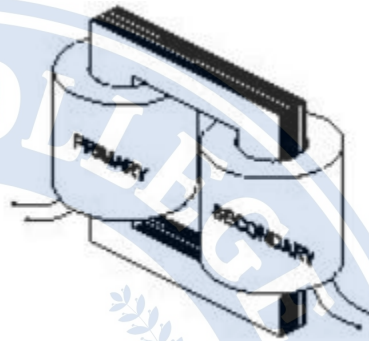


- (A) Breather
- (B) Tap charger

- (C) Explosion vent
 - (D) Buchholz relay
- Correct Answer : D

- 7). What is the disadvantage of auto transformer?
- (A) More losses
 - (B) Heavier in weight
 - (C) Poor voltage regulation
 - (D) Cannot isolate the secondary winding
- Correct Answer : D

- 8). What is the name of the transformer as shown in the figure?



- (A) Auto transformer
 - (B) Core type transformer
 - (C) Shell type transformer
 - (D) Audio frequency transformer
- Correct Answer : B

- 9). Why the primary of a distribution transformers are connected in delta and the secondary in star?
- (A) To avoid the over loading
 - (B) To maintain the constant load
 - (C) To reduce the transformer losses
 - (D) To distribute the 3 phase 4 wire system
- Correct Answer : D

- 10). What is the advantage of stepped core arrangement in the larger transformers?
- (A) Minimizes the copper use
 - (B) Reduces the hysteresis loss
 - (C) Reduces the eddy current loss
 - (D) Reduces the space for core
- Correct Answer : A

- 11). Why the core of the current transformer is having low reactance and low core loss?
- (A) To maximise the burden
 - (B) To maintain the constant output voltage
 - (C) To prevent the high static shield
 - (D) To minimise the error in the reading
- Correct Answer : D

12). Which method of cooling is used for distribution transformer up to 100 KVA?

- (A) Forced oil cooling
- (B) Oil natural water forced cooling
- (C) Forced circulation of oil
- (D) Natural air cooling

Correct Answer : D

13). Calculate the voltage regulation of the transformer in percentage if the no load voltage is 240 volt and full load voltage is 220 volt?

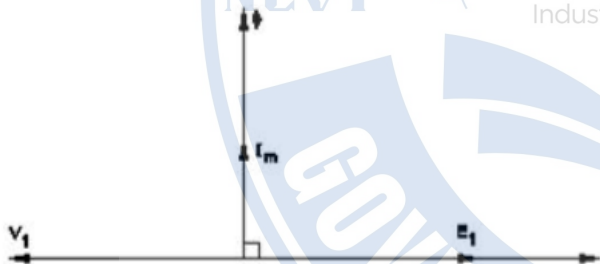
- (A) 0.072
- (B) 0.083
- (C) 0.0871
- (D) 0.0909

Correct Answer : D

14). What is the function of top float switch of buchholz relay in the transformer?

- (A) Activate in moisture presence
 - (B) Activate at overloading condition
 - (C) Activate at open circuit condition
 - (D) Activate at low temperature condition
- Correct Answer : B

15). What is the relationship between the 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 $E_2 = V_1$

Correct Answer : A

16). Which type of the 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

Correct Answer : B

17). Which construction technique is used to reduce the copper loss in the large transformers?

- (A) By using of solid core
- (B) By increasing core thickness

(C) By using hot rolled steel core

(D) By using stepped core arrangement

Correct Answer : D

18). Why the load of a power transformer 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 the heavy sparking at the contact points
- (D) To provide an electrical isolation for the windings

Correct Answer : C

19). Why the ferrite core is used in radio receivers?

- (A) To reduce the constant losses
- (B) To reduce the electric interference
- (C) To increase the quality of sound
- (D) To decrease the efficiency of receivers

Correct Answer : A

20). Which material is used to make the core of power transformer?

- (A) Soft iron
- (B) Hot rolled steel
- (C) Copper alloy
- (D) Cold rolled grain oriented steel

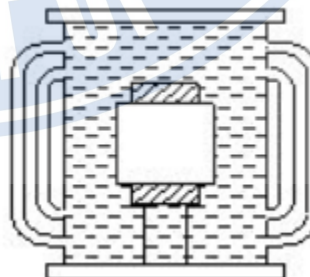
Correct Answer : D

21). 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

Correct Answer : D

22). What is the cooling method of the transformer as shown in the figure?



- (A) Oil natural cooling
- (B) Oil natural air forced cooling
- (C) Oil forced air forced cooling
- (D) Oil natural water forced cooling

Correct Answer : A

23). Which condition is to be satisfied if two single phase transformers are connected in parallel?

- (A) Same capacity
- (B) Same polarity
- (C) Same cooling method
- (D) Same type

Correct Answer : B

24). Which type of emf is induced in an auto transformer?

- (A) Self induced emf
- (B) Mutually induced emf
- (C) Eddy current emf
- (D) Dynamically induced emf

Correct Answer : A

25). How the error in the readings of the potential transformer can be reduced?

- (A) Using thick laminated core
- (B) Providing long magnetic path
- (C) Using low flux density material
- (D) Providing low quality core material

Correct Answer : C



Introduction to Employability Skill

1: Jobs that have become outdated in the past 5 years _____.

- (A) STD booth
- (B) Ola
- (C) Uber
- (D) Swiggy

Correct Answer: (A)

2.To be in a job or work is _____.

- (A) employ
- (B) skill
- (C) knowledge
- (D) aptitude

Correct Answer : A

3: A person with a growth mindset is always willing to _____.

- (A) relax
- (B) grow, change, learn
- (C) keep quiet
- (D) become rich

Correct Answer: B



Constitutional Values : Citizenship

1. Ethics means _____.

- (A) decide what is right and wrong for a human conduct
- (B) name of a city
- (C) employability skills
- (D) not relevant to society

Correct Answer : A

2. Identify the improper term.

- (A) Green pollution
- (B) Water pollution
- (C) Air pollution (D) Sound pollution

Correct Answer : A

3. Values are _____.

- (A) not punctual
- (B) motivates our attitude and action
- (C) very costly
- (D) all have same value

Correct Answer : B

4. _____ is a brief statement about purpose and principles of the constitution.

- (A) Syllabus
- (B) Module
- (C) The preamble
- (D) Unit

Correct Answer : C



Becoming a professional in the 21st century

1. Hard skill _____ .

- (A) quick learner
- (B) time management
- (C) 60 WPM typing speed
- (D) spoken english

Correct Answer : C

2. Time management _____ .

- (A) complete your task on time
- (B) managing time
- (C) hard skill
- (D) problem solving

Correct Answer : A

3. To grow yourself you must _____ .

- (A) know your office
- (B) know yourself
- (C) know your institute
- (D) know your country

Correct Answer : B

4. 1st industrial revolution started in _____ .

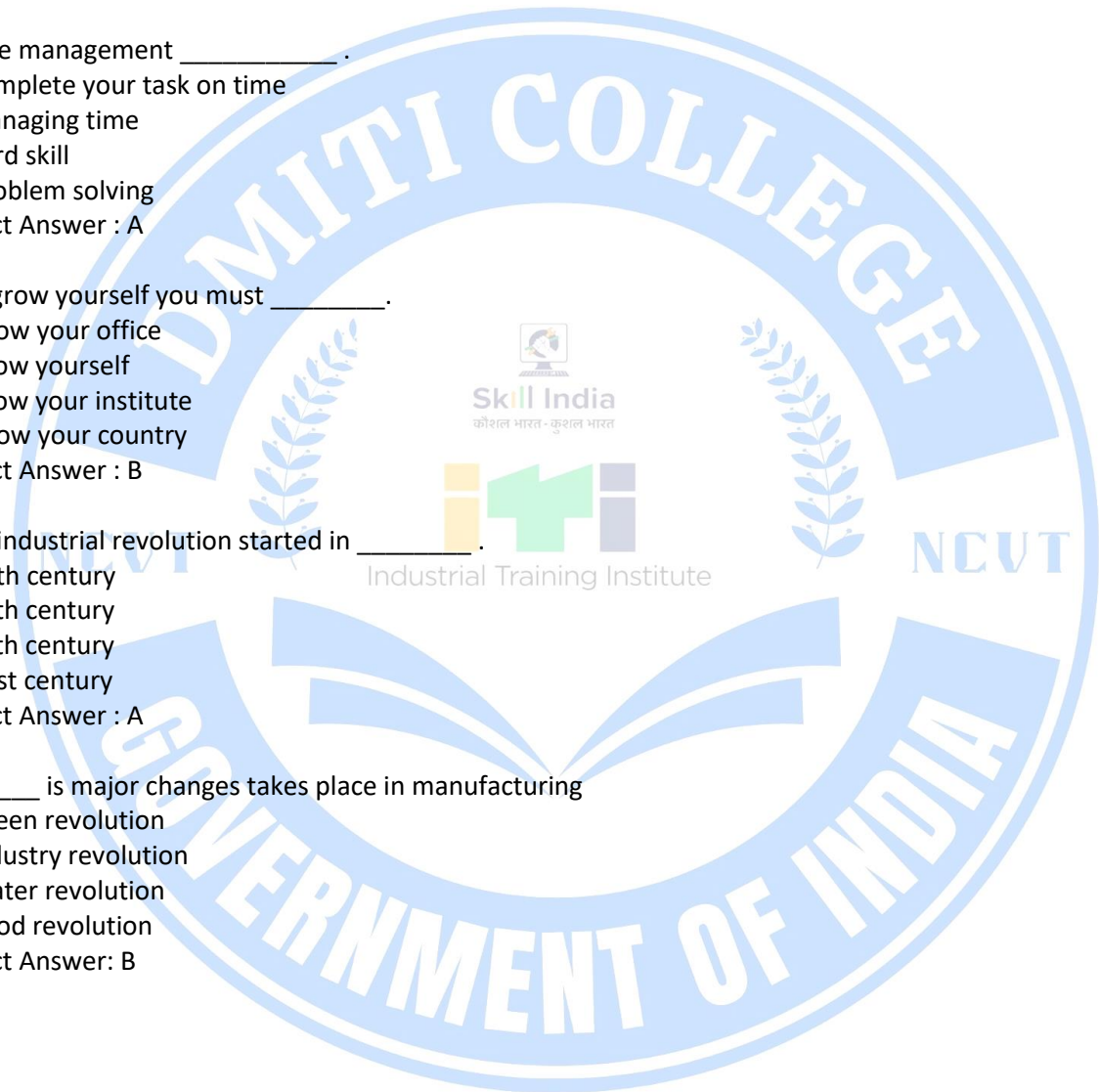
- (A) 18th century
- (B) 19th century
- (C) 20th century
- (D) 21st century

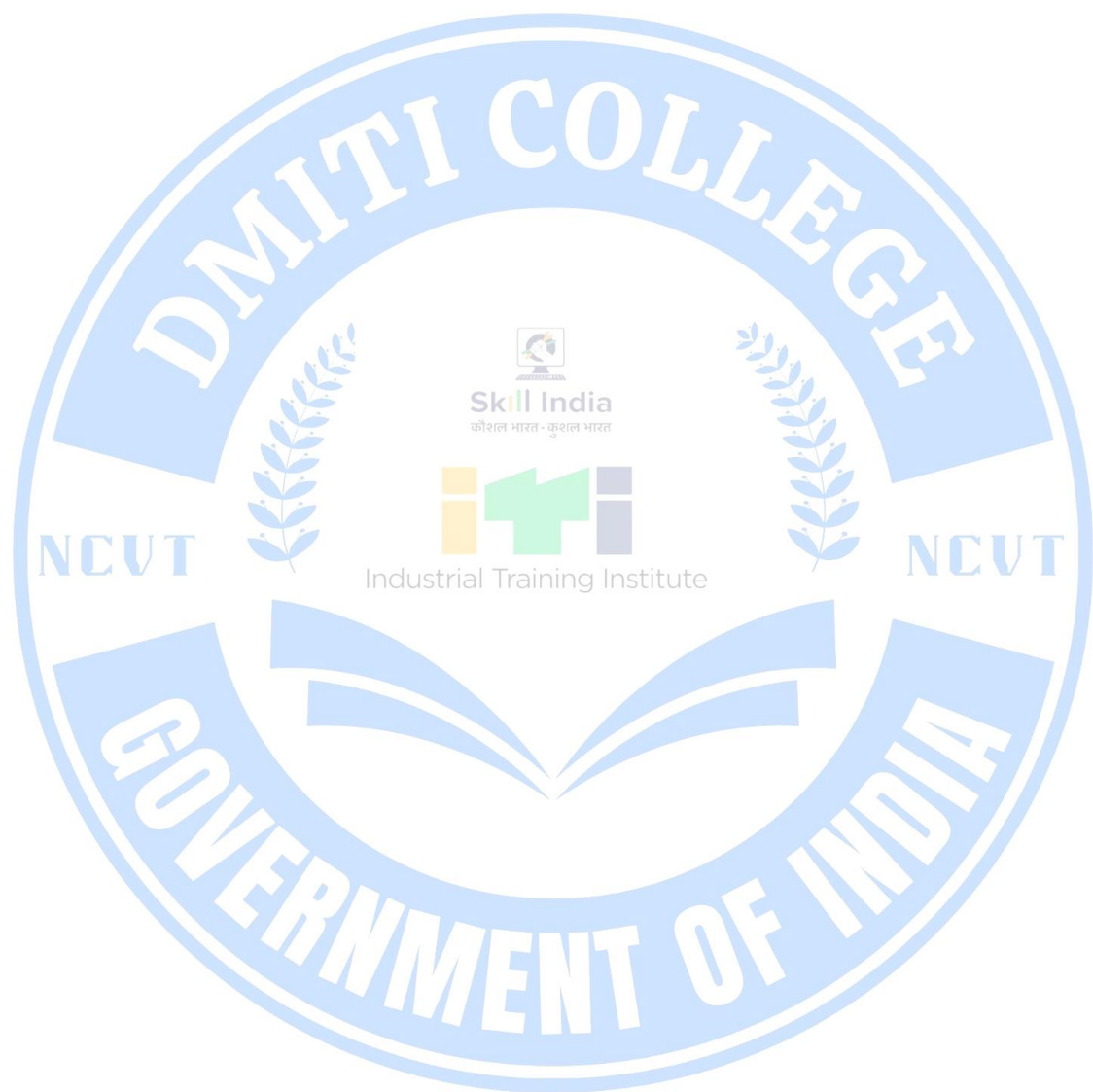
Correct Answer : A

5. _____ is major changes takes place in manufacturing

- (A) Green revolution
- (B) Industry revolution
- (C) Water revolution
- (D) Food revolution

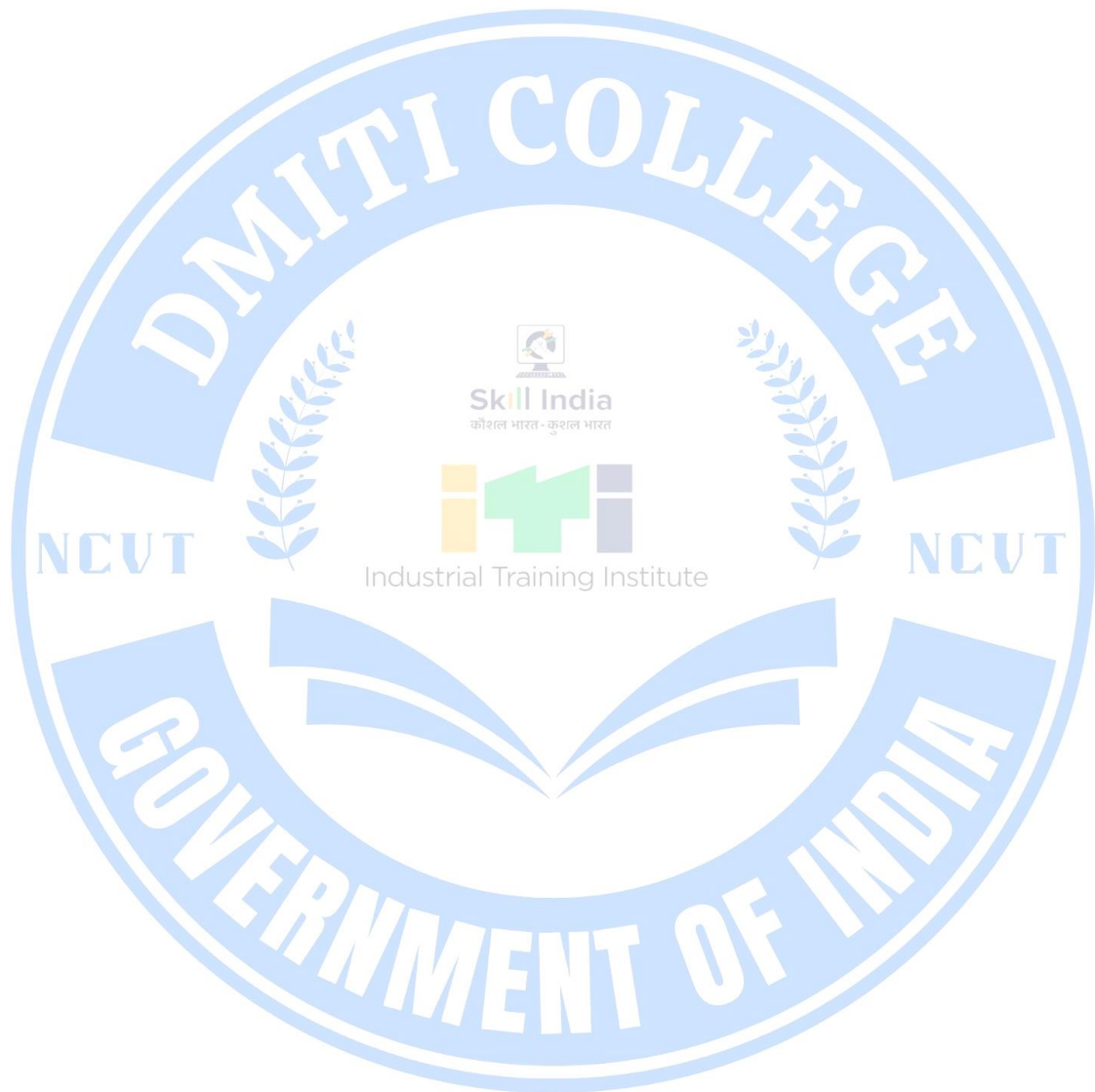
Correct Answer: B





5. _____ is major changes takes place in manufacturing(A) Green revolution (B) Industry revolution (C) Water revolution(D) Food revolution

Correct Answer: B



Basic English Skills

1). Which one is a “Don’t” of discussion etiquette?

- (A) Be open minded
- (B) Use moderate tone
- (C) Listen to others
- (D) Argue unnecessary

Correct Answer : D

2). Today's weather is going to be _____.

- (A) hopeful
- (B) warm
- (C) blue
- (D) urgent

Correct Answer : B

3). Fill in the blank with correct word. “They _____ good friends”.

- (A) is
- (B) am
- (C) are
- (D) was

Correct Answer : C

4). Which punctuation mark should be used in the following sentence? Is there any site engineer here.

- (A) ? (question mark)
- (B) , (comma)
- (C) . (full stop)
- (D) ! (exclamation)

Correct Answer : A

5). When is capital letter used?

- (A) Beginning of a sentence
- (B) Names of persons
- (C) Names of places
- (D) All the above

Correct Answer : D

6). Which one of the following is a good office etiquette?

- (A) One should dress formally
- (B) One should not be punctual to work
- (C) One should have fancy mobile ring tone
- (D) One should litter one’s work place

Correct Answer : A

7). Choose suitable “wh” word for the given sentence. “_____ animal do you like?”

- (A) Which
- (B) Why
- (C) Where

(D) When

Correct Answer : A

8). Fill in the blank with suitable place preposition. "My house is _____ the third floor".

Options: (A) at

(B) in

(C) on

(D) under

Correct Answer: (C)

9). Which one is a "Do's" of discussion etiquettes?

(A) Loose your temper

(B) Listen to others

(C) Talk about irrelevant details

(D) Use impolite or rude language

Correct Answer: (B)

10). Choose the correct response for the given question. "How have you been"?

(A) Very well, And you?

(B) Thank you_ And you?

(C) Same to you

(D) On vacation_ And you?

Correct Answer : A

11). Which one is NOT a conjunction?

(A) And

(B) Or

(C) But

(D) On

Correct Answer : D

12). Which one is NOT a vowel?

(A) a

(B) e

(C) f

(D) i

Correct Answer : C

13). Fill in the blank with proper interrogative adjective. _____ are you going

(A) Who

(B) Where

(C) Which

(D) What

Correct Answer : B

14). Fill in the blank with proper pronoun. "I made this cake _____"

(A) myself

(B) yourself

(C) himself

(D) itself

Correct Answer : A

15). Which one is a brain of computer?

- (A) Keyboard
- (B) CPU
- (C) Monitor
- (D) Hard disk

Correct Answer : B

16). Which one of the following is a describing word?

- (A) Eat
- (B) Repair
- (C) Hot
- (D) Soup

Correct Answer : C

17). When someone says 'Thank you' we should reply and say _____

- (A) Thank you.
- (B) You're welcome.
- (C) Bye-bye
- (D) How are you?

Correct Answer : B

18). Which one is NOT a benefit of the role playing?

- (A) Builds confidence
- (B) Develops listening skill
- (C) Develops creative problem-solving skill
- (D) Develops boredom

Correct Answer : D

19). When you greet higher official's such as Teacher, Instructor or Supervisor, you should use _____

- (A) Good morning
- (B) Hello
- (C) Hey
- (D) Hi

Correct Answer : A

20). Fill in the blank with proper reflexive pronoun. "She has hurt _____"

- (A) myself
- (B) herself
- (C) himself
- (D) itself

Correct Answer : B

21). The word 'when' denotes _____

- (A) place
- (B) thing
- (C) person
- (D) time

Correct Answer : D

22). Re-arrange the following set of words into meaningful sentence. "teacher / school / worked / she / a / as"

- (A) school worked as a she teacher
(B) **she worked as a school teacher**
(C) she teacher worked as a school
(D) worked she as a school teacher
Correct Answer : B

23). Which one is an exclamatory sentence?

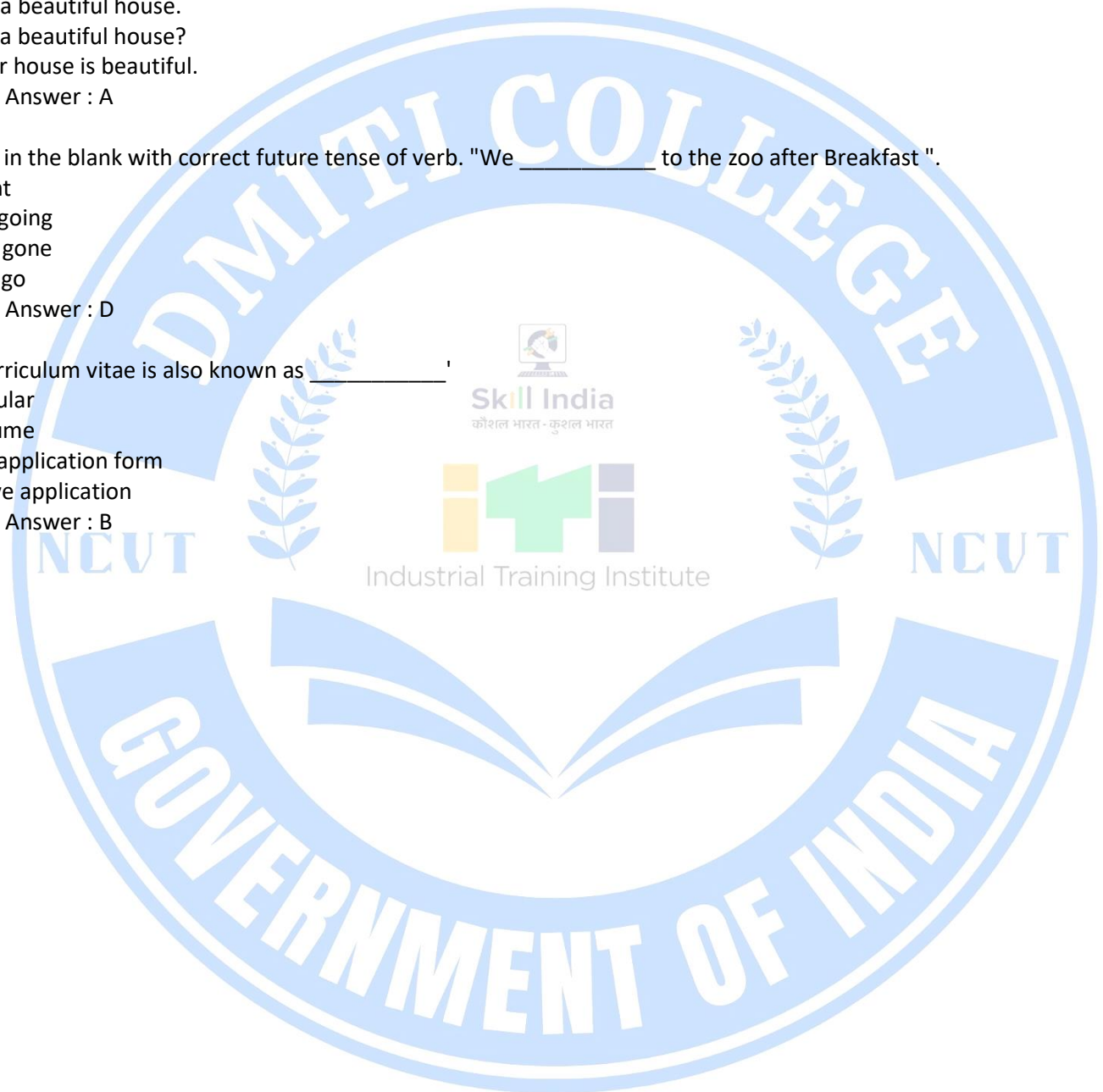
- (A) What a beautiful house it is!
(B) It is a beautiful house.
(C) Is it a beautiful house?
(D) Your house is beautiful.
Correct Answer : A

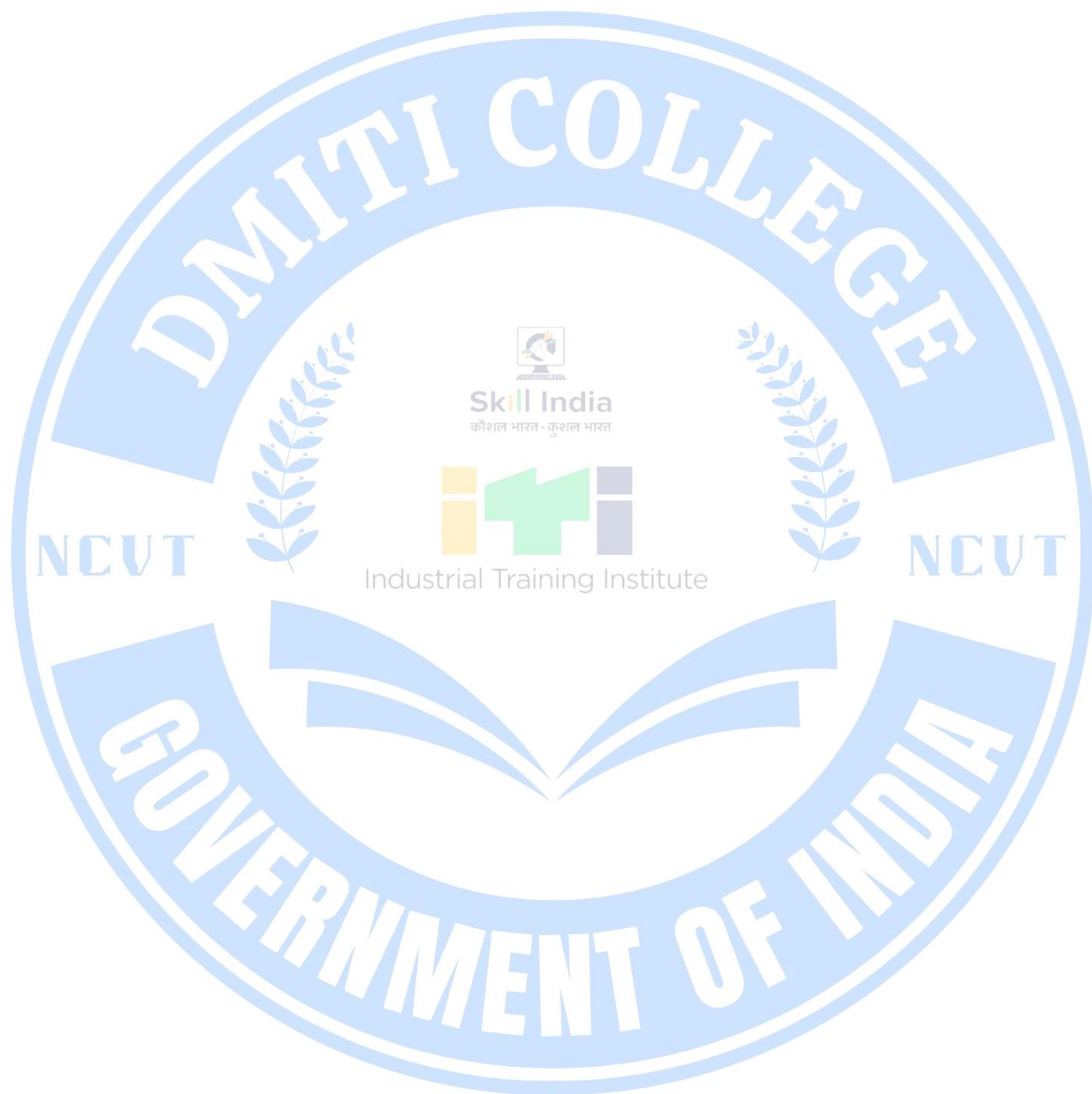
24). Fill in the blank with correct future tense of verb. "We _____ to the zoo after Breakfast".

- (A) went
(B) are going
(C) had gone
(D) will go
Correct Answer : D

25). Curriculum vitae is also known as _____.

- (A) circular
(B) **resume**
(C) job application form
(D) leave application
Correct Answer : B





Career Development and Goal Setting

1). Which of these statements is true?

- (A) All jobs are available in all cities
 - (B) Some cities have more opportunities than others for certain job roles
 - (C) Salary in metro cities is always higher than small towns
 - (D) Only a few cities have job opportunities
- Correct Answer : B

2). Which among these are not good manners while travelling by public transport?

- (A) Push back our seat without checking with the person on the back seat
- (B) Be polite to fellow passengers and staff
- (C) Follow the instructions of the cabin manager
- (D) Speak in a low voice

Correct Answer : A

3). What is mindfulness?

- (A) It is the technique of not minding anything
- (B) It is about sharpening your brain
- (C) It is the ability to be fully present in a moment
- (D) It is the word used to describe people who are full of thoughts

Correct Answer : C

4). What is a comfort zone?

- (A) It is a place where we go to sleep
- (B) It is a place where children live
- (C) Our familiar lifestyle and behavior is our comfort zone
- (D) A place designed in airport for resting

Correct Answer : C

5). Which of these is a sign of good stress?

- (A) It prevents you from pursuing your goals
- (B) It makes you doubt yourself
- (C) Does not lead to long-term tension, loss of sleep
- (D) Makes you physically ill or causes pain

Correct Answer : C

6). _____ are the qualities that are considered negative, and need to be worked on.

- (A) Personal strengths
- (B) Personal weaknesses
- (C) Opportunities
- (D) Threats

Correct Answer : B

7). Which of the following statements is true?

- (A) Only experts can solve any problem
- (B) The more problems you solve, the better you will get at problem solving!
- (C) We need to pursue a course to even solve a simple problem
- (D) It is not important to solve any problem

Correct Answer : B

8). Which of the following is true about stress?

- (A) Stress can be managed
- (B) Stress cannot be controlled
- (C) Stress can not be decreased
- (D) All of the above

Correct Answer : A

9). Which of these documents are not compulsorily required for international travel?

- (A) Passport
- (B) Visa
- (C) Personal identification (eg. Aadhaar Card)
- (D) Electricity bill

Correct Answer : D

10). An activity that stops or reduces stress is called a stress buster. Which of the following according to you is not a stress buster?

- (A) Spending long hours thinking about the problem
- (B) Going to bed on time
- (C) Listening to music
- (D) Gardening

Correct Answer : A

11). Goals are of 2 types _____ .

- (A) good and bad goals
- (B) long-term and short-term goals
- (C) rich and poor goals

(D) fixed-term and non-fixed term goals

Correct Answer : B

12). Which of these should be considered while making decisions?

(A) Your mood

(B) The choices of your friends

(C) The rules of your community

(D) Your personal priorities

Correct Answer : D

13). Which of these is the full form of SWOT?

(A) Special Wellness Organization Theme

(B) Speak Work Openly Together

(C) Strong World Olympic Team

(D) Strength Weakness Opportunity Threat

Correct Answer : D

14). Which of the following is an example of personal weakness?

(A) Confidence

(B) Being lazy

(C) Hard working

(D) Active

Correct Answer : B

15). Which of these expenses are incurred when we move to a new city?

(A) Buying new clothes

(B) Buying books

(C) Buying shoes

(D) Rent of an accommodation

Correct Answer : D



Communication Skills

1). Choose the correct context of the given expression in group discussion. "Excuse me, I would _____".

- (A) interrupting
- (B) agreeing
- (C) summarizing
- (D) emphasizing a point

Correct Answer : A

2). Which one is NOT a part of Triple 'A' listening?

- (A) Anxiety
- (B) Attitude
- (C) Attention
- (D) Adjustment

Correct Answer : A

3). Noise, physical discomfort of hotness or coldness comes under _____.

- (A) culture barrier
- (B) language barrier
- (C) perception barrier
- (D) environment barrier

Correct Answer : D

4). Which one is a Do's in interview etiquette?

- (A) Dress too casually
- (B) Lie about abilities to get job
- (C) Be confident
- (D) Too excessive in gesture

Correct Answer : C

5). When you send your resume through email, you are sending it in the form of _____.

- (A) drive
- (B) attachment
- (C) marked text
- (D) cookie advertisement

Correct Answer : B

6). Goals are categorized as _____.

- (A) good and bad
- (B) inner and outer
- (C) intrinsic and extrinsic
- (D) short-term and long-term

Correct Answer : D

7). Gesture "biting nails" shows _____.

- (A) boredom
- (B) insecurity
- (C) confidence
- (D) defensiveness

Correct Answer : B

8). Which of these is not an online job search platform?

- (A) Indeed
- (B) Glassdoor
- (C) Snapchat
- (D) LinkedIn

Correct Answer : C

9). A good way to respond to the question 'Shall we start the discussion?' is _____.

- (A) To conclude
- (B) But, don't you think?
- (C) Yes, let's start.
- (D) To sum up

Correct Answer : C

10). Listening to Railway or Flight announcement, teacher's lecture comes under _____.

- (A) critical listening
- (B) appreciative listening
- (C) therapeutic listening
- (D) comprehensive listening

Correct Answer : D

11). For "SMART" Goal, S stands for _____.

- (A) Social
- (B) Scientific
- (C) Specific
- (D) Strength

Correct Answer : C

12). Which one is a "Do's" for interview etiquette?

- (A) Nervousness
- (B) Informal dress
- (C) Calm approach

(D) Excessive gesture

Correct Answer : C

13). Which one is NOT a benefit of oral communication?

(A) It is quick

(B) It is for record

(C) It is direct

(D) Feedback is immediate

Correct Answer : B

14). Which one is a "don't" in interview etiquette?

(A) Be confident

(B) Dress appropriately

(C) Proper eye contact

(D) Lie about your abilities to get job

Correct Answer : D

15). Which one is a barrier to speaking?

(A) Poor listening

(B) Lack of time

(C) Nervousness

(D) Reluctant to read

Correct Answer : C

16). Intrinsic motivation is _____.

(A) short lived

(B) long lasting

(C) for money or reward

(D) to gain social acceptance

Correct Answer : B

17). An angry person's body language will be _____.

(A) calm

(B) friendly

(C) aggressive

(D) relaxed and soothing

Correct Answer : C

18). Communication that involves exchanging information without use of words is called _____.

(A) verbal communication

(B) pictorial communication

(C) written communication

(D) non verbal communication

Correct Answer : D

19). Which one of these phrases is not related to a telephone call?

(A) Make up

(B) Pick up

(C) Hold on

(D) Call back

Correct Answer : A

20). Which one is NOT an element of 3P's of public speaking?

(A) Prepare

(B) Practice

(C) Posses

(D) Perform

Correct Answer : C

21). Which one is 3P's of public speaking?

(A) Possess, Present, Practice

(B) Prepare, Practice, Perform

(C) Publish, Pleasant, Perfect

(D) Perfection, Performance, Painsstaking

Correct Answer : B

22). The study of right and wrong in human endeavors is called _____.

(A) motivation

(B) self awareness

(C) ethics

(D) goal

Correct Answer : C

23). Which one is NOT a part of Triple 'A' listening?

(A) Anxiety

(B) Attitude

(C) Attention

(D) Adjustment

Correct Answer : A

24). Noise, physical discomfort of hotness or coldness comes under _____.

(A) culture barrier

(B) language barrier

(C) perception barrier

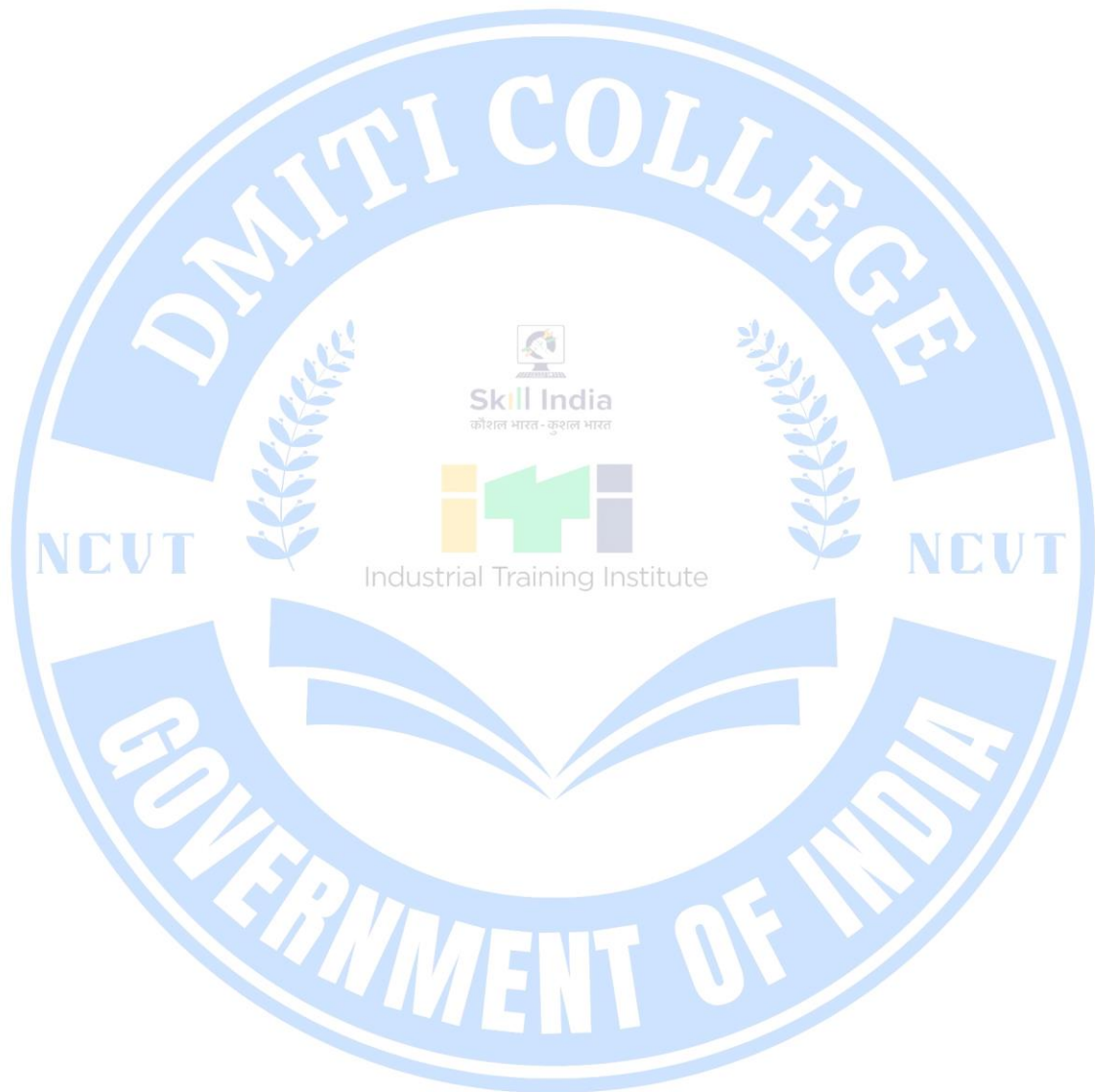
(D) environment barrier

Correct Answer : D

25). Which one is a good communication?

- (A) Message is clear and direct
- (B) Message is ambiguous
- (C) Sender attacks receiver
- (D) Receiver doesn't listen to sender

Correct Answer : A



Diversity and Inclusion

1). Someone is treated differently on their skin colour, income _____ .

- (A) nature
- (B) correct
- (C) discrimination
- (D) unity

Correct Answer : C

2). Gender stereotypes can be _____ .

- (A) personality development
- (B) harmful and hurtful
- (C) playful
- (D) cheerful

Correct Answer : B

3). Women are soft-spoken and forgiving _____ .

- (A) gender stereotype
- (B) always true
- (C) always false
- (D) sometimes

Correct Answer : A

4). Something is made of different types of units _____ .

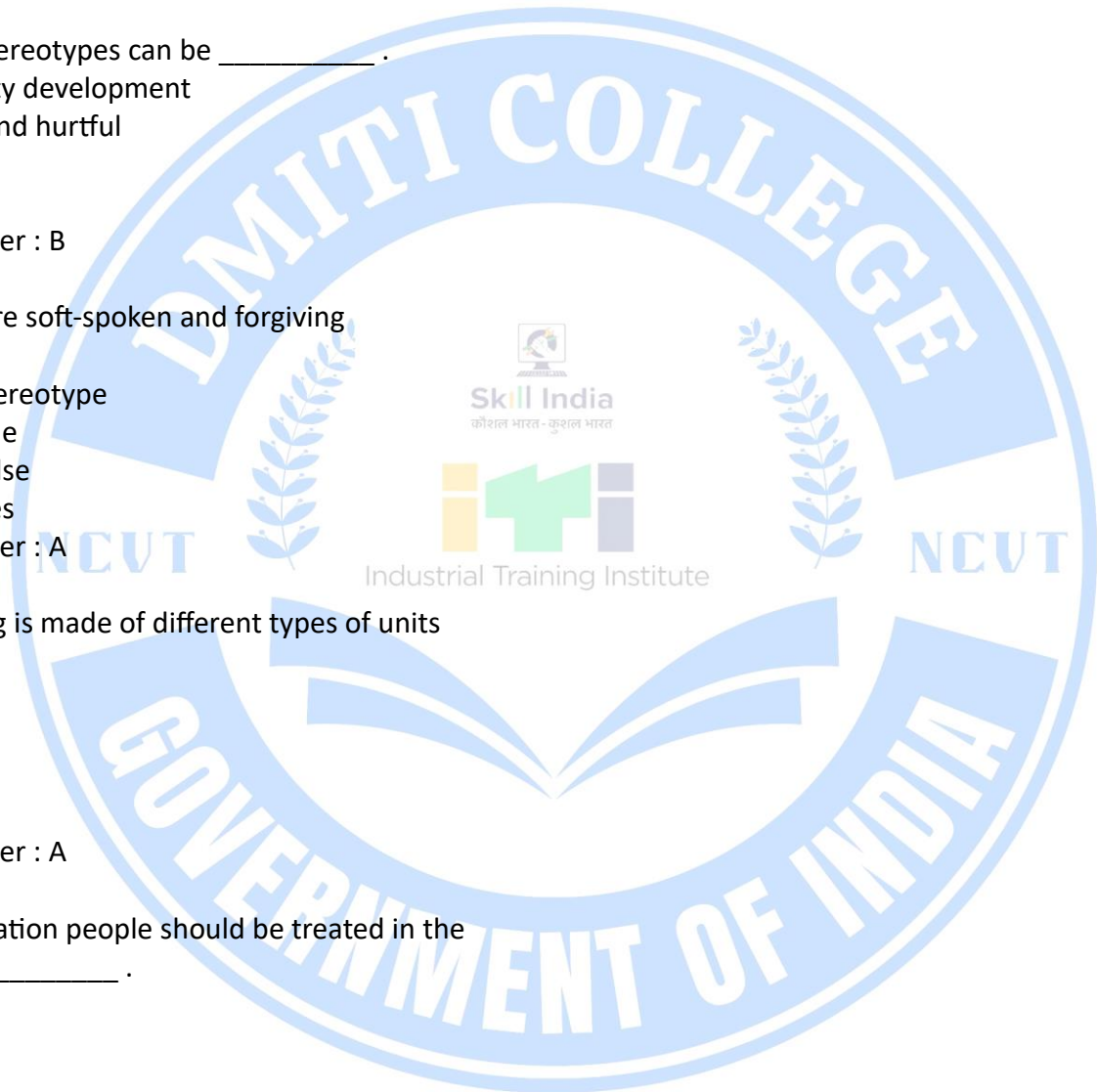
- (A) diversity
- (B) society
- (C) unity
- (D) equality

Correct Answer : A

5). Same situation people should be treated in the same way _____ .

- (A) status
- (B) society
- (C) unity
- (D) equality

Correct Answer : D



Finalcial and Legal Litarity

1). Which is not the online payment App?

- (A) PhonePe
- (B) India Pay
- (C) Google Pay
- (D) Paytm

Correct Answer : B

2). The way money is saved, spent and invested _____.

- (A) income
- (B) financial literacy
- (C) salary
- (D) banking

Correct Answer : B

3). Debit card will have how many digit numbers?

- (A) 12
- (B) 14
- (C) 16
- (D) 18

Correct Answer : C

4). Needs, wants, luxury correct examples are _____.

- (A) i) need-eating out ii) want-house to live iii) luxury-costly phone
- (B) i) need-house to live ii) want-eating out iii) luxury-costly phone
- (C) i) need-costly phone ii) want- house to live iii) luxury-eating out
- (D) i) need- costly phone ii) want- eating out iii) luxury- house to live

Correct Answer : B

5). PIN is _____.

- (A) Personal Identification Number
- (B) Professional Income Number
- (C) Personal Income Number
- (D) Professional Identification Number

Correct Answer : A

Essential Digital Skills

1). Which one is an input device?

- (A) Speaker
- (B) Joystick
- (C) Monitor
- (D) Printer

Correct Answer : B

2). An illegal activity committed on the internet is called _____.

- (A) virus
- (B) cyber crime
- (C) search engine
- (D) social networking

Correct Answer : B

3). A computer system consists of _____.

- (A) software and program
- (B) hardware and software
- (C) mouse and keyboard
- (D) circuit diagram

Correct Answer : B

4). Which one is a social networking site?

- (A) Outlook express
- (B) Face book
- (C) Lotus notes
- (D) Mozilla

Correct Answer : B

5). The expansion of RAM is _____.

- (A) Read Octet Machine
- (B) Random Access Memory
- (C) Read Access Memory
- (D) Random Access Machine

Correct Answer : B

6). In Excel, the intersection of a row and column is called a _____.

- (A) cell
- (B) label
- (C) square
- (D) worksheet

Correct Answer : A

7). Which shortcut is used to save a word file in MS-Word?

- (A) Ctrl + N
- (B) Ctrl + B
- (C) Alt + S
- (D) Ctrl + S

Correct Answer : D

8). Spread sheets are saved with extension _____.

- (A) .pdf
- (B) .doc
- (C) .xls
- (D) .mp3

Correct Answer : C

9). What is the cell address of 4th row and 4th column?

- (A) 4D
- (B) E4
- (C) D4
- (D) B4

Correct Answer : C

10). What is a shortcut key for "Cut" command?

- (A) Ctrl + C
- (B) Ctrl + V
- (C) Ctrl + A
- (D) Ctrl + X

Correct Answer : D

11). Which one is the disadvantage of social networking sites?

- (A) Instant communication
- (B) Make addictive
- (C) Access to information
- (D) Online marketing for business

Correct Answer : B

12). In an email, where will you add the recipient email address whom you want to send the copy of an email?

- (A) To
- (B) CC

- (C) Bcc
- (D) Subject

Correct Answer : B

13). _____ tab is used to insert charts, graphs, images and page number into a word file.

- (A) Standard tab
- (B) Formatting tab
- (C) Insert tab
- (D) Review pane

Correct Answer : C

14). The expansion of LAN is _____.

- (A) Local Area Name
- (B) Local Area Network
- (C) Logical Area Network
- (D) Legal Area Network

Correct Answer : B

15). Which one is NOT a storage device?

- (A) Printer
- (B) Video tape
- (C) USB flash drive
- (D) Memory card

Correct Answer : A

16). _____ is the brain of the computer.

- (A) Desktop
- (B) Window
- (C) Central Processing unit (CPU)
- (D) Keyboard

Correct Answer : C

17). In MS Excel, to insert a formula in cell, we must begin the entry with an operator _____.

- (A) =
- (B) \$
- (C) @
- (D) #

Correct Answer : A

18). In which orientation, the text is printed length wise?

- (A) Landscape
- (B) Margin
- (C) Portrait
- (D) Width

Correct Answer : C

19). What does 'ASAP' stand for, in SMS language?

- (A) As Silent As Probable
- (B) As Soon As Probable
- (C) As Soon As Possible
- (D) As Simple As Possible

Correct Answer : C

20). Which one is an output device of the computer?

- (A) Printer
- (B) MIC
- (C) Mouse
- (D) Keyboard

Correct Answer : A

21). Which one of the following options shows the synonyms for a word, we type in MS word?

- (A) Thesaurus
- (B) Spell check
- (C) Hyperlink
- (D) Style

Correct Answer : A

22). What is a shortcut key for "Copy" command?

- (A) Ctrl + C
- (B) Ctrl + V
- (C) Ctrl + A
- (D) Ctrl + X

Correct Answer : A

23). A software application used to enable computer users to locate and access web page is called _____.

- (A) web browser
- (B) web server
- (C) website
- (D) email

Correct Answer : A

24). What is the expansion of "FYI" SMS?

- (A) For Your Information
- (B) For Your Identification
- (C) For Your Internet
- (D) For Your Innocence

Correct Answer : A

25). A program that infects other program by modifying them is called _____ .

- (A) virus
- (B) antivirus
- (C) web page
- (D) note pad

Correct Answer : A

26). You withdraw Rs.500/- from an ATM. The ATM machine gives out Rs.5000/-. Which of the following would be ethically correct?

- (A) Make a complaint
- (B) Take the money
- (C) Drop the money near ATM
- (D) Give the money to the poor

Correct Answer : A

27). Computer network that spans a regional, national or global area is called _____ .

- (A) LAN
- (B) MAN
- (C) WAN
- (D) CAN

Correct Answer : C

28). A wireless technology that connects a laptop to the internet is called _____ .

- (A) Bluetooth
- (B) WiFi
- (C) Source Network
- (D) Desktop

Correct Answer : B

29). What is the default name of newly created folder in windows?

- (A) Folder
- (B) New
- (C) New folder
- (D) Blank

Correct Answer : C

30). 1 Byte = _____ .

- (A) 2 bits
- (B) 4 bits
- (C) 8 bits
- (D) 16 bits

Correct Answer : C

31). The expansion of ROM is _____ .

- (A) Read Octet Machine
- (B) Read Only Memory
- (C) Random Only Memory
- (D) Rewrite Octet Machine

Correct Answer : B

32). Which shortcut key is used to underline the main headings of your resume?

- (A) Ctrl + U
- (B) Ctrl + B
- (C) Ctrl + L
- (D) Ctrl + X

Correct Answer : A

33). Which one is a cybercrime?

- (A) Sending email
- (B) Online purchasing
- (C) Online gambling
- (D) Chatting with friends

Correct Answer : C

34). In MS Paint, which extension is not supported?

- (A) .jpeg
- (B) .doc
- (C) .gif
- (D) .png

Correct Answer : B

35). In MS Excel, collection of work sheet is known as _____ .

- (A) worksheet
- (B) workbook
- (C) excel book
- (D) sheet work

Correct Answer : B

36). Which among the following is not an Online payment application?

- (A) Google pay
- (B) BHIM UPI
- (C) Banking applications
- (D) Instagram

Correct Answer : D

37). Which one is a file management tool that comes with windows?

- (A) Control panel

- (B) Window explorer
- (C) Desktop
- (D) Notepad

Correct Answer : B

38). What is shortcut key for "Paste" command?

- (A) Ctrl + C
- (B) Ctrl + V
- (C) Ctrl + A
- (D) Ctrl + X

Correct Answer : B

39). For short distance, which network type should be used?

- (A) LAN
- (B) MAN
- (C) WAN
- (D) CAN

Correct Answer : A

40). Which one is a web browser?

- (A) Face book
- (B) Hot mail
- (C) Internet explorer
- (D) Outlook express

Correct Answer : C

41). The expansion of WAN is _____.

- (A) Wide Area Name
- (B) Web Assigned Name
- (C) Wide Area Network
- (D) Web Aided Network

Correct Answer : C

42). In which orientation, the text is printed width wise?

- (A) Width
- (B) Margin
- (C) Portrait
- (D) Landscape

Correct Answer : D

43). Which one is a "Don't" of information security?

- (A) Use hard to guess passwords
- (B) Disclose password to anyone
- (C) Take backup data of your PC periodically
- (D) Encrypt laptop hard drive and mobile devices

Correct Answer : B

44). Which one is a search engine?

- (A) Flicker
- (B) Hotmail
- (C) Face book
- (D) Google

Correct Answer : D

45). _____ contains one or more worksheets.

- (A) Workbook
- (B) Workfile
- (C) Address bar
- (D) Document

Correct Answer : A

46). Where all deleted files will be stored?

- (A) CD
- (B) Official folder
- (C) Personal folder
- (D) Recycle bin

Correct Answer : D

47). Which function key allows you to rename a file?

- (A) F1
- (B) F2
- (C) F3
- (D) F4

Correct Answer : B

48). Which device is used to connect telephone line to a PC?

- (A) Modem
- (B) Monitor
- (C) Printer
- (D) Hard disk

Correct Answer : A

49). What is a shortcut key for "Select all" command?

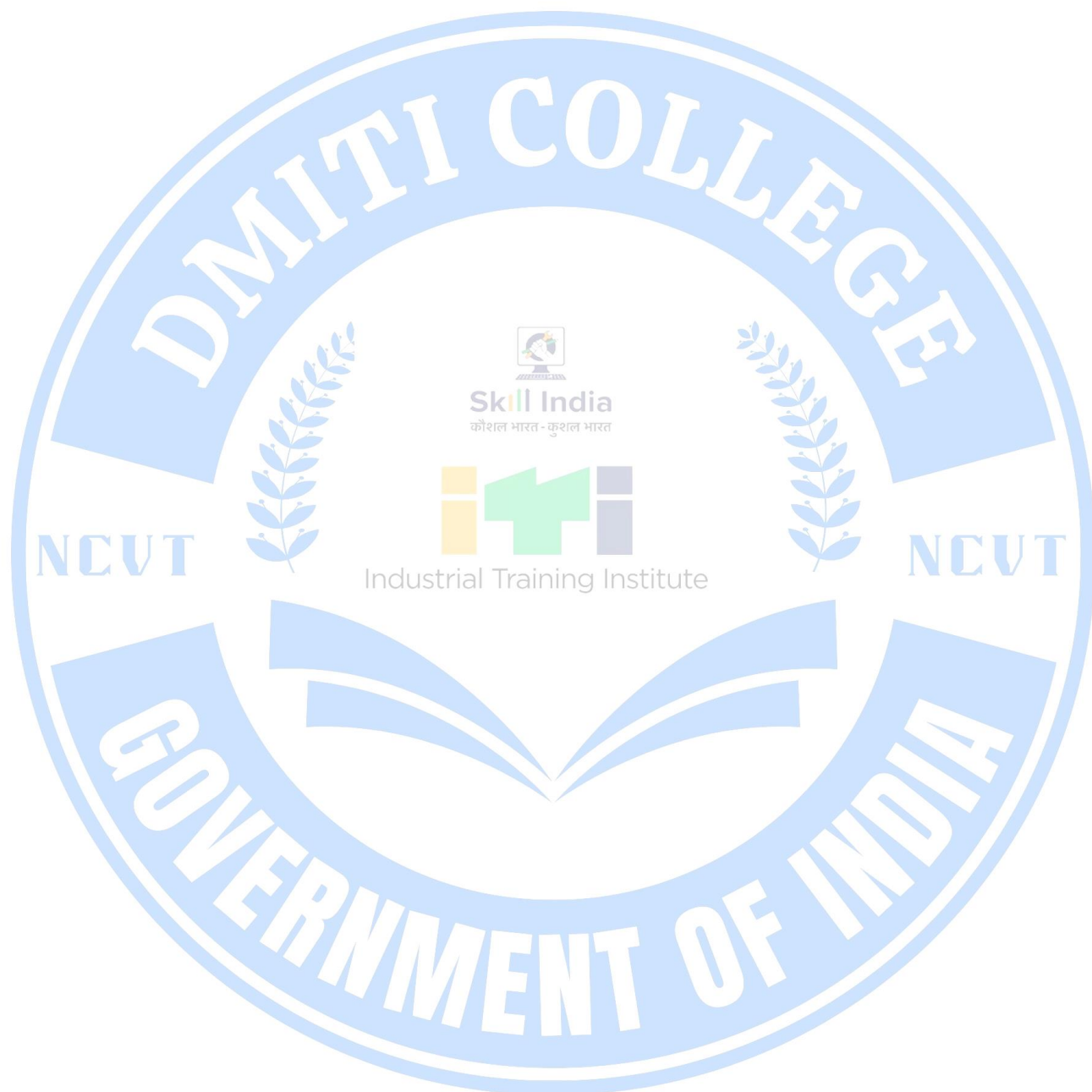
- (A) Ctrl + C
- (B) Ctrl + V
- (C) Ctrl + A
- (D) Ctrl + X

Correct Answer : C

50). CPU stands for _____

- (A) Central Programming Unit
- (B) Central Processing Unit
- (C) Central Planning Unit
- (D) Central Progress Unit

Correct Answer : B



Entrepreneurship

1). Money invested in purchasing of raw materials, payment of wages and salaries, rental, electricity etc. comes under _____.

- (A) working capital
- (B) fixed capital (C) long term capital
- (D) capital income

Correct Answer : A

2). In an economic growth, role of entrepreneur is to _____.

- (A) generate unemployment
- (B) stagnate standard of living
- (C) improve per capita income
- (D) unbalance the regional development

Correct Answer : C

3). As compared to small scale business, large scale business require _____.

- (A) less no. of persons
- (B) less no. of capital
- (C) more no. of person
- (D) small machines and tools

Correct Answer : C

4). Best way to identify customers needs is _____.

- (A) through 3rd person
- (B) by advertising on newspaper
- (C) by observation and message
- (D) by talking to them and survey

Correct Answer : D

5). A _____ person is someone who works for a person/organization and gets paid for that work.

- (A) Self employed
- (B) Wage employed
- (C) Entrepreneur
- (D) None of the above

Correct Answer : B

6). In SWOT analysis which pair is helpful?

- (A) Strengths, Weakness
- (B) Strengths, Opportunities
- (C) Threats, Weakness

(D) Threats, Opportunities

Correct Answer : B

7). The expansion of GDP is _____.

- (A) Gross Domestic Product
- (B) Godown Demand Product
- (C) Grand Demand Product
- (D) Giant Domestic Product

Correct Answer : A

8). Which one is a correct channel through which marketers can reach customers?

- (A) Manufacture ® Retailer ® Wholesaler ® Customer
- (B) Manufacturer ® Customer ® Retailer
- (C) Manufacturer ® Retailer ® Customer
- (D) Manufacturer ® Retailer ® Customer ® Wholesaler

Correct Answer : C

9). In "SWOT" analysis, "S" stands for _____.

- (A) Success
- (B) Strength
- (C) Survey
- (D) Service

Correct Answer : B

10). MSME stands for _____.

- (A) Micro, Scale and Medium Enterprises
- (B) Macro, Small and Medium Enterprises
- (C) Micro, Small and Medium Enterprises
- (D) Minor, Small and Medium Enterprises

Correct Answer : C

11). A person who is associated with the starting of business is called _____.

- (A) merchant
- (B) entrepreneur
- (C) businessman
- (D) sales executive

Correct Answer : B

12). The expansion of SIDO is _____.

- (A) Small Industries Development Organization

(B) Small Income Development Organization
(C) Small Investment Development Organization
(D) Standard Industry Development Organization
Correct Answer : A

13). What does 'A' in SMART stand for?

(A) Action
(B) Achievable
(C) Ambitious
(D) Awareness
Correct Answer : B

14). The enterprises engaged in the production of goods is known as _____.

(A) manufacturing enterprise
(B) service enterprises

(C) micro enterprises
(D) macro enterprises
Correct Answer : A

15). Which investment is considered for deciding the status of manufacturing enterprises?

(A) Working capital
(B) Building and land
(C) Plant and machinery
(D) Salary of employees
Correct Answer : C



Customer Service

1). Feedback helps to _____.

- (A) improve the service
- (B) modify the process or system
- (C) meet customer satisfaction better
- (D) all of the above

Correct Answer : D

2). Probing questions helps you _____.

- (A) to identify customer's specific needs
- (B) to learn customer's pain point
- (C) to introduce yourself well to the customer
- (D) building trust so you can receive honest feedback

Correct Answer : A

3). Which of the following should be avoided during probing?

- (A) Interrupting the customer
- (B) Listening carefully
- (C) Repeating
- (D) Summarizing

Correct Answer : A

4). It is best to ask _____ questions when asking questions.

- (A) open and close ended
- (B) rude
- (C) personal
- (D) sensitive

Correct Answer : A

5). What actions should be taken after getting to know customer suggestions/problems?

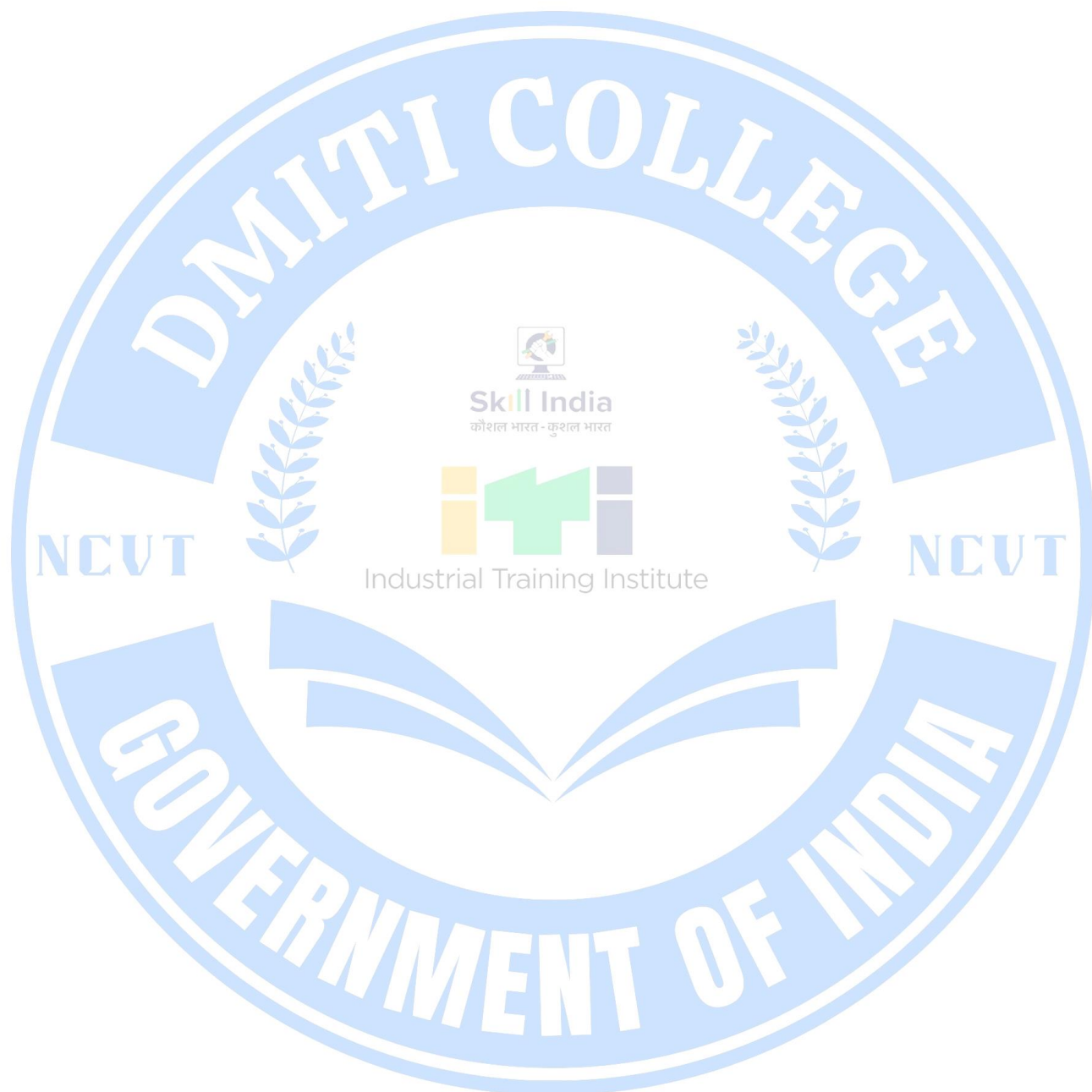
- (A) Ask, Solve
- (B) Ask, Act, Categorize
- (C) Ask, Categorize, Act, Followup
- (D) Ask, Followup

Correct Answer : C

6). Based on the information that you get through probing, you will be in a better position to make _____.

- (A) proper product suggestions
- (B) effective problem solving
- (C) build friendship
- (D) no progress

Correct Answer : A



Getting Ready for Apprenticeship and Jobs

1). What is the meaning of an entry level job?

- (A) It helps to enter the office
- (B) Junior interior designer
- (C) It is a starting or junior level job
- (D) Security guard

Correct Answer : C

2). What does 'M' stand for in SMART goal?

- (A) Meaningful
- (B) Memorable
- (C) Measurable
- (D) Manageable

Correct Answer : C

3). Information like date of birth, permanent address form a part of one's _____ in the resume.

- (A) Career objectives
- (B) Personal details
- (C) Achievements
- (D) Qualifications

Correct Answer : B

4). NAPS stands for _____ .

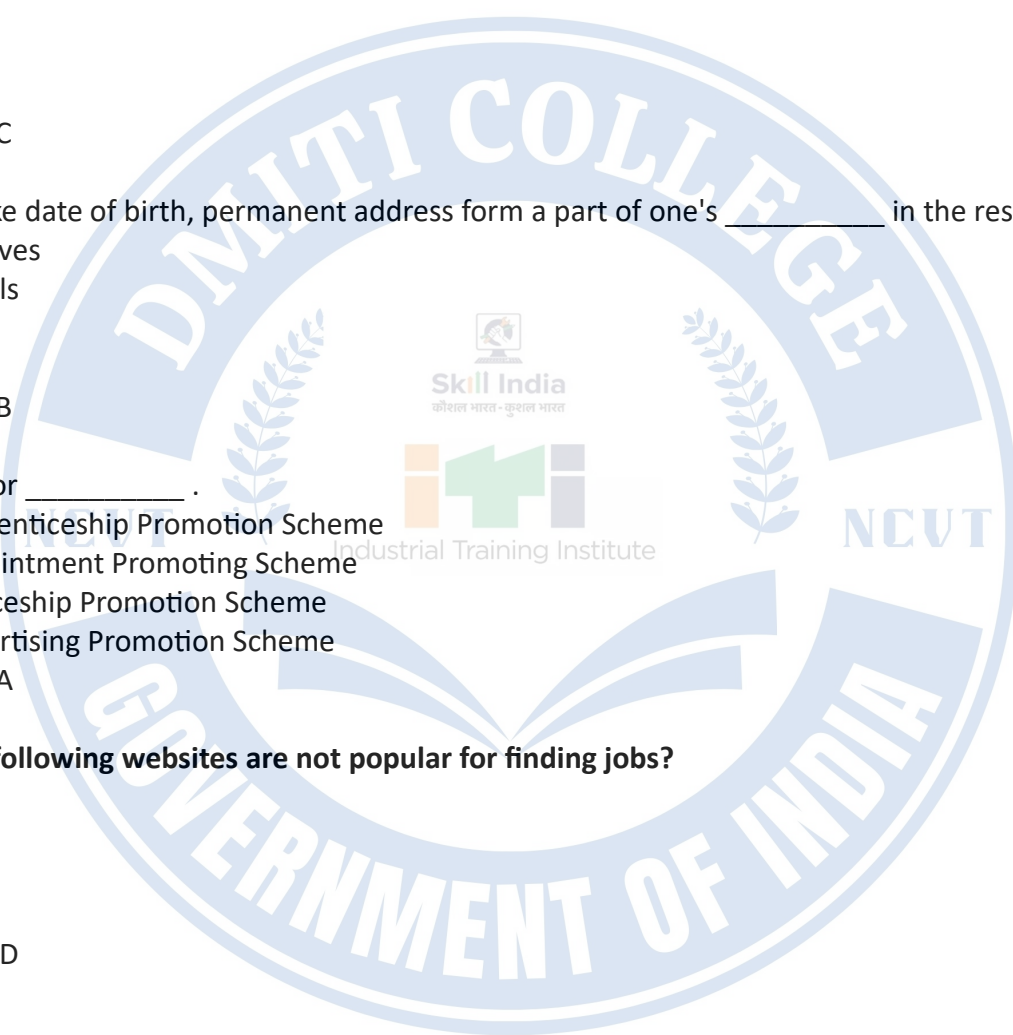
- (A) National Apprenticeship Promotion Scheme
- (B) National Appointment Promoting Scheme
- (C) Non Apprenticeship Promotion Scheme
- (D) National Advertising Promotion Scheme

Correct Answer : A

5). Which of the following websites are not popular for finding jobs?

- (A) LinkedIn.com
- (B) Sheroes.com
- (C) Naukri.com
- (D) **Twitter.com**

Correct Answer : D



Artificial Intelligence

1). Which tool can help make music?

- (A) Beatoven
- (B) Notepad
- (C) Paint
- (D) Gmail

Correct Answer : A

2). How can teachers use AI tools?

- (A) To close shops
- (B) To lock doors
- (C) To ring bells
- (D) To give feedback

Correct Answer : D

3). What should you do with fake profiles?

- (A) Report them
- (B) Ignore them
- (C) Share them
- (D) Save them

Correct Answer : A

4). What should you do with wrong AI output?

- (A) Paste it in book
- (B) Shut the PC
- (C) Call police
- (D) Try better prompt

Correct Answer : D

5). Why is data important for AI?

- (A) AI uses data to learn
- (B) It helps in drawing
- (C) To sleep well
- (D) To clean tools

Correct Answer : A

6). Why is Generative AI special?

- (A) It creates new things
- (B) It breaks items
- (C) It cleans tools
- (D) It draws lines only

Correct Answer : A

7). How does Gemini help users?

- (A) By generating content

(B) By storing food

(C) By building shelves

(D) By boiling water

Correct Answer : A

8). Why should we use follow-up prompts?

- (A) To confuse AI
- (B) To improve response
- (C) To slow AI
- (D) To stop AI

Correct Answer : B

9). Where has AI replaced cashiers?

- (A) Amazon Go
- (B) TV show
- (C) Cooking class
- (D) Bus stop

Correct Answer : A

10). Which prompt is best for job interview practice?

- (A) Can you ask interview questions?
- (B) Tell a joke
- (C) Play song
- (D) Give food

Correct Answer : A

11). Choose a prompt to make a story.

- (A) Say something
- (B) Write a story about a dog
- (C) Hello AI
- (D) I am bored

Correct Answer : B

12). What rule helps avoid harm from AI?

- (A) Use it with care
- (B) Avoid it always
- (C) Shout at it
- (D) Trust blindly

Correct Answer : A

13). Which of the following is AI?

- (A) A wall clock
- (B) A smart assistant

(C) A stapler
(D) A fan
Correct Answer : B

14). What does AI try to do?
(A) Cook food
(B) Build roads
(C) Copy human thinking
(D) Make shoes
Correct Answer : C

15). How does ML improve performance?
(A) By turning off
(B) By sleeping
(C) By guessing
(D) By learning from data
Correct Answer : D

16). Which is created by Generative AI?
(A) Nail cutter
(B) Poem
(C) Paint brush
(D) Fan cover
Correct Answer : B

17). What is a base prompt?
(A) First instruction to AI
(B) A drawing
(C) A note
(D) A box
Correct Answer : A

18). What makes General AI different from other types of AI?
(A) It is slow
(B) It does many tasks
(C) It sleeps
(D) It plays
Correct Answer : B

19). Where can AI spread fake news?
(A) Social media
(B) Offline books
(C) TV screen
(D) Pencil box
Correct Answer : A

20). What should you do if AI spreads lies?
(A) Ignore it
(B) Share it fast
(C) Report it
(D) Print it
Correct Answer : C

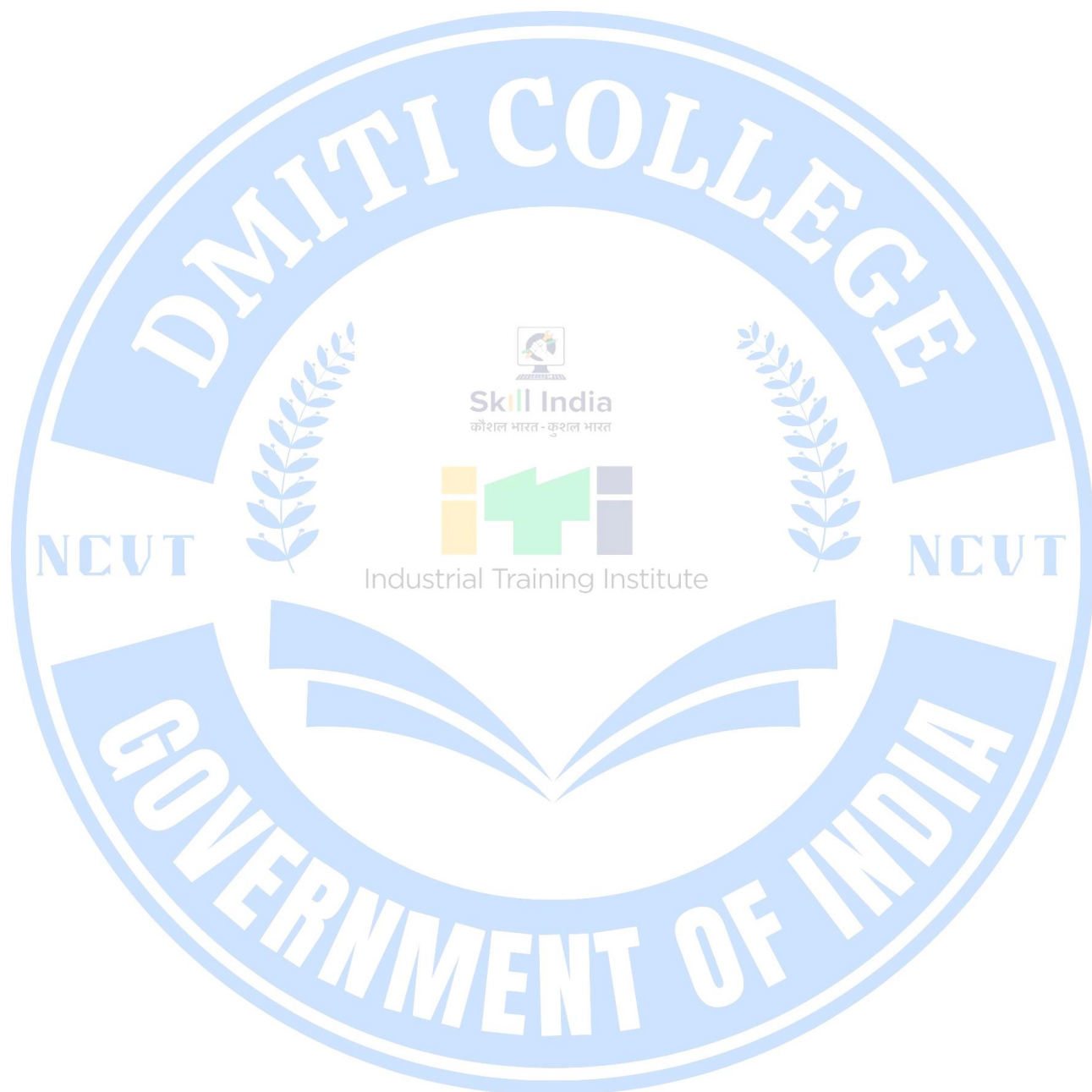
21). Which AI tool can explain grammar?
(A) Notepad
(B) MS Paint
(C) ChatGPT
(D) Recorder
Correct Answer : C

22). What helps YouTube suggest videos?
(A) Paper size
(B) Mouse clicks
(C) Bookmarks
(D) Watch history
Correct Answer : D

23). Choose a responsible AI action.
(A) Creating fake profiles
(B) Cheating in exams
(C) Getting homework help
(D) Spreading wrong news
Correct Answer : C

24). Why does AI need training data?
(A) To learn better
(B) To jump faster
(C) To walk faster
(D) To play better
Correct Answer : A

25). Which of the following is data?
(A) Image
(B) Screwdriver
(C) Chair
(D) Fan
Correct Answer : A



Unit, Fractions

1). What are fundamental units?

- (A) Length, Mass, Volume
- (B) Length, Mass, Time
- (C) Length, Mass, Area
- (D) Length, Pressure, Volume

Correct Answer : B

2). What denotes letter 'M' in MKS system?

- (A) Mile
- (B) Meter
- (C) Millimeter
- (D) Micron

Correct Answer : B

3). How many millimetres are there in 1 inch?

- (A) 2.54 mm
- (B) 25.4 mm
- (C) 24.5 mm
- (D) 2.45 mm

Correct Answer : B

Correct Answer : D

5). What are the two classifications of system of units?

- (A) British and Metric
- (B) Gravitational and non-gravitational
- (C) Fundamental and derived
- (D) Metric and International

Correct Answer : C

4). Convert decimal 0.000659 to fraction?

(A) $\frac{659}{1000}$

(B) $\frac{659}{10000}$

(C) $\frac{659}{100000}$

(D) $\frac{659}{1000000}$



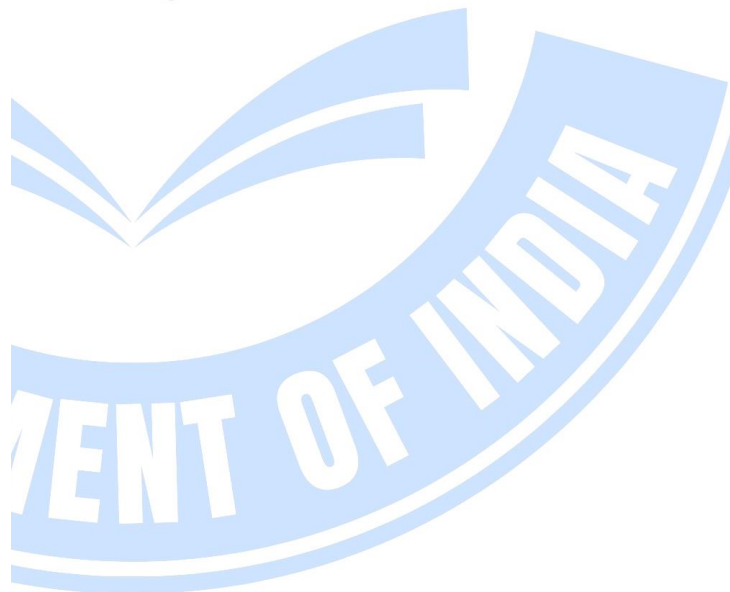
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Industrial Training Institute

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Square Root, Ratio and Proportion percentage

1). Convert 0.456 decimal fraction into percentage?

- (A) 45.6%
- (B) 0.0456
- (C) 0.456%
- (D) 0.0456%

Correct Answer : A

2). What is the square root of 529?

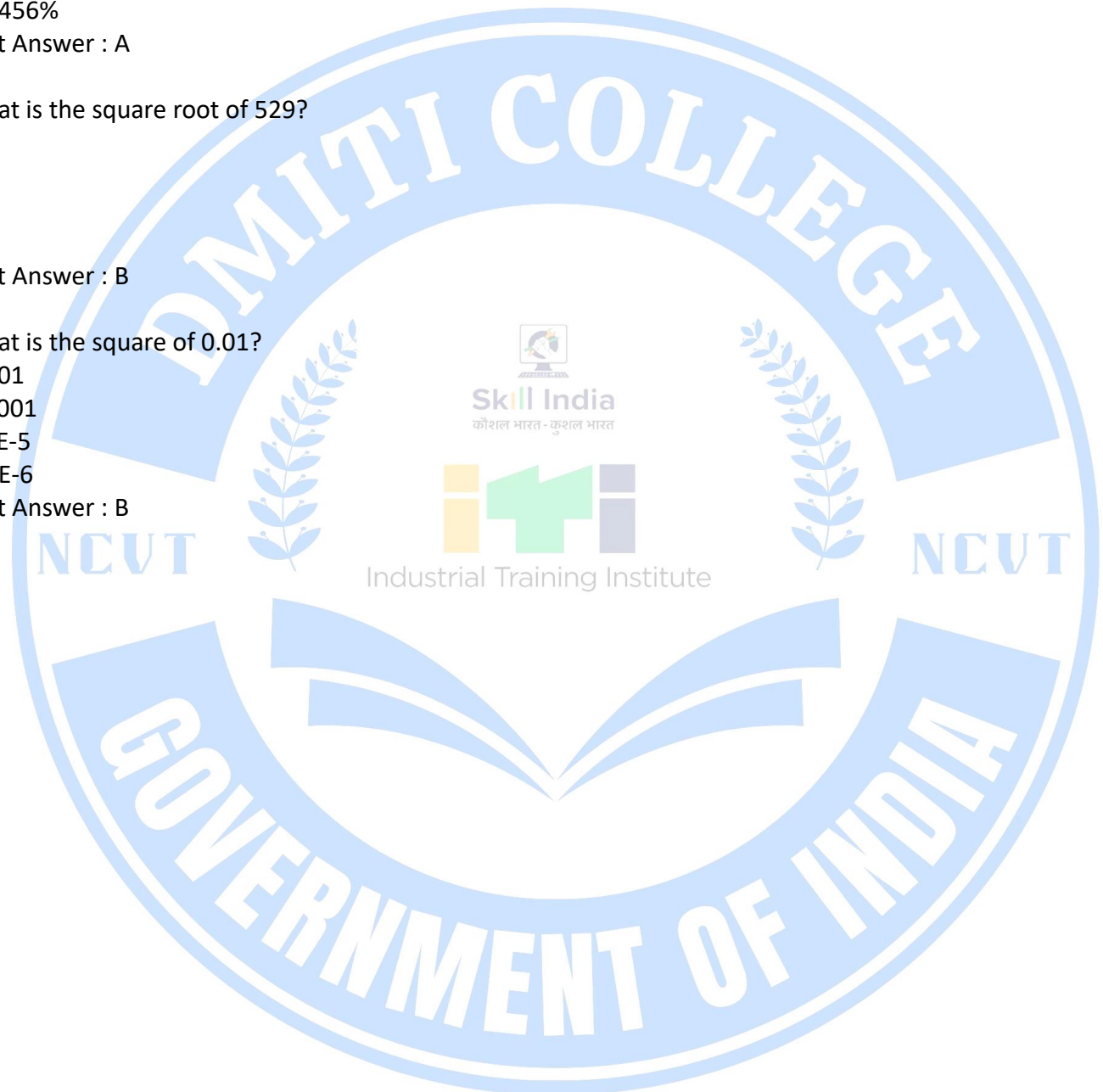
- (A) 13
- (B) 23
- (C) 33
- (D) 43

Correct Answer : B

3). What is the square of 0.01?

- (A) 0.001
- (B) 0.0001
- (C) 1.0E-5
- (D) 1.0E-6

Correct Answer : B

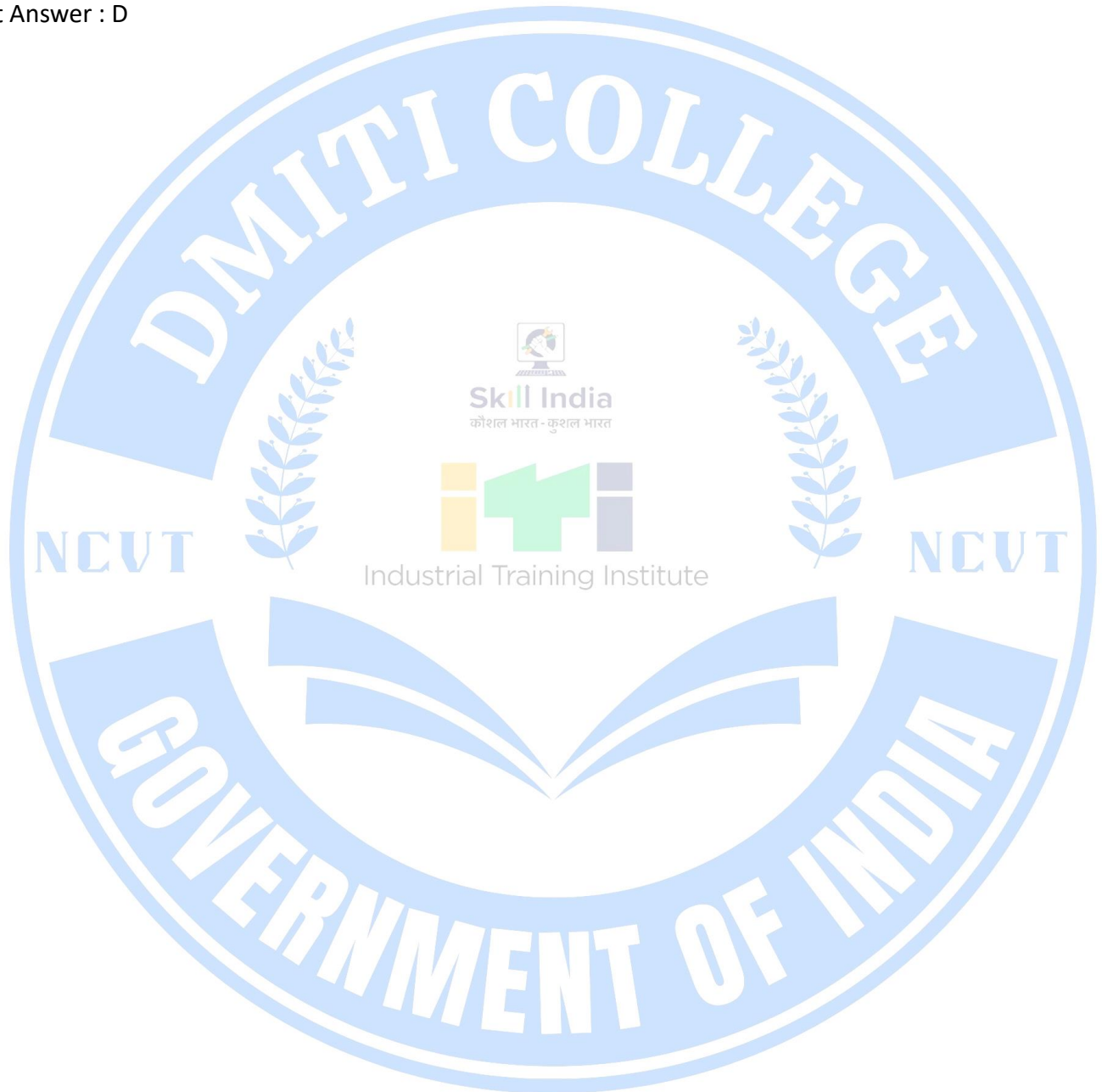


Material Science

1). Which metal contains iron as a major content?

- (A) Brass metal
- (B) Bronze metal
- (C) Zinc
- (D) Ferrous metal

Correct Answer : D



Mass, Weight, Volume and Density

1). What is called mass per unit volume of a substances?

- (A) Mass
- (B) Weight
- (C) Density
- (D) Volume

Correct Answer : C

2). What is termed as the quantity of matter contained in a body?

- (A) Density
- (B) Volume
- (C) Mass
- (D) Specific gravity

Correct Answer : C



Heat and Temperature and Pressure

1). What is the boiling point of water?

- (A) 0°C
- (B) 32°C
- (C) 100°C
- (D) 212°C

Correct Answer : C

2). What is the S.I unit of heat?

- (A) Calorie
- (B) Joule
- (C) Centigrade heat unit
- (D) British thermal unit

Correct Answer : B

3). What is the value for specific heat of water?

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

Correct Answer : D



Mensuration

1). What is the perimeter of a rectangle whose length and breadth are 20 cm and 18 cm?

- (A) 56 cm
- (B) 66 cm
- (C) 76 cm
- (D) 86 cm

Correct Answer : C

2). What is the side of a square whose area is 625 mm^2 ?

- (A) 15 mm
- (B) 20 mm
- (C) 25 mm
- (D) 30 mm

Correct Answer : C



Levers and Simple Machines

1). Which is example for third order lever?

- (A) Common balance
- (B) Forceps
- (C) A pair of scissors
- (D) Lime squeezer

Correct Answer : B

2). Which is example for first order lever?

- (A) A wheel barrow
- (B) A pair of scissors
- (C) Fire tongs
- (D) Lime squeezer

Correct Answer : B

3). Which is example for second order lever?

- (A) Common balance
- (B) A pair of scissors
- (C) Bottle opener
- (D) Human forearm

Correct Answer : C



Trigonometry

1). Which is equal to $\sin$?

(A) Opposite side/ Hypotenuse

(B) Hypotenuse /Opposite side

(C) Adjacent side/Hypotenuse

(D) Hypotenuse/Adjacent side

Correct Answer : A

