



Zeal Education Society's
ZEAL POLYTECHNIC, PUNE

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DEPARTMENT OF ELECTRICAL ENGINEERING

FIRST YEAR (FY)

SCHEME: I

SEMESTER: II

**NAME OF SUBJECT: ELEMENTS OF
ELECTRICAL ENGINEERING
SUBJECT CODE: 22215**

**UNIT WISE MULTIPLE CHOICE
QUESTIONS BANK**



Question Bank for Multiple Choice Questions

Program: Diploma in Comp/E & TC engineering	Program Code:- CO/EJ
Scheme:-I	Semester:- 2
Course:- Elements of Electrical Engineering	Course Code:- 22215

01 – Magnetic Circuits	Marks:-10
Content of Chapter:- 1.1. Magnetic lines of force, flux density, Magnetic flux density 1.2 MMF, magnetic force, permeability, Ampere turn (AT). 1.3 Electric & Magnetic circuit, series Magnetic & parallel magnetic circuit, 1.4 Magnetization Curve (B-H Curve) 1.5 Magnetic hysteresis loop & hysteresis loop Application.	

1. The Unit of Magnetic Flux is

- (A) Tesla
- (B) Weber
- (C) Weber - metre
- (D) None of the above

Answer: - Option B

2. EMF Stands for

- (A) Electromechanical force
- (B) Electromagnetic force
- (C) Electromotive force
- (D) None of the above

Answer: - Option C

3. Volt is equal to

- (A) Joule/Coulomb
- (B) Ampere/Seconds
- (C) Joule/Seconds
- (D) Coulomb/Seconds

Answer: - Option A

4. B in B-H curve is known as

- (A) Reluctance
- (B) Magnetizing Force
- (C) Magnetic flux density
- (D) Magnetic Intensity

Answer: - Option C

5. The Unit of Magnetic Flux Density is

- (A) Tesla
- (B) Weber
- (C) Weber - metre
- (D) None of the above

Answer: - Option A

6. MMF stands for

- (A) Magnetic Memory field
- (B) Magnetic Material Force
- (C) Magneto Motive Force
- (D) None of the above

Answer: - Option C

7. H in B-H curve is known as

- (A) Reluctance
- (B) Magnetizing Force
- (C) Magnetic flux density
- (D) Magnetic Intensity

Answer: - Option B

8. Watt is equal to

- (A) Joule/Coulomb
- (B) Ampere/Seconds
- (C) Joule/Seconds
- (D) Coulomb/Seconds

Answer: - Option C

9. Hysteresis in magnetic circuit is phenomenon of

- (A) Lagging of B behind H
- (B) Lagging of H behind B
- (C) Setting up constant flux
- (D) None of the above

Answer: - Option A

10. The SI Unit of Actual Permeability of free space is

- (A) Henry
- (B) Henry/Metre
- (C) Weber - metre
- (D) Farad/Metre

Answer: - Option B

11. Magnetic flux passes more readily through

- (A) Wood
- (B) Air
- (C) Iron
- (D) Vacuum

Answer: - Option C

12. MMF in magnetic circuit corresponds to _____ in electric circuit

- (A) Potential Difference
- (B) EMF
- (C) Current
- (D) Resistance

Answer: - Option B

13. The B-H curve of _____ will not be a straight line

- (A) Wood
- (B) Air
- (C) Soft Iron
- (D) Copper

Answer: - Option C

14. Direction of induced EMF can be found out from

- (A) Faradays law
- (B) Amperes law
- (C) Fleming left hand Rule
- (D) Lenz's law

Answer: - Option D

15. Which of the following material has least area of Hysteresis loop

- (A) Wrought Iron
- (B) Hard Steel
- (C) Soft Iron
- (D) Silicon Steel

Answer: - Option D

16. Ampere is equal to

- (A) Joule/Coulomb
- (B) Ampere/Seconds
- (C) Joule/Seconds
- (D) Coulomb/Seconds

Answer: - Option D

17. Flux in magnetic circuit corresponds to _____ in electric circuit

- (A) Potential Difference
- (B) EMF
- (C) Current
- (D) Resistance

Answer: - Option C

18. Reluctance in magnetic circuit corresponds to _____ in electric circuit

- (A) Potential Difference
- (B) EMF
- (C) Current
- (D) Resistance

Answer: - Option D

19. Magnitude of induced EMF is found out from

- (A) Faradays law
- (B) Amperes law
- (C) Fleming left hand Rule
- (D) Lenz's law

Answer: - Option A

20. Direction of induced EMF can be found out from

- (A) Faradays law
- (B) Fleming right hand Rule
- (C) Lenz's law
- (D) Both B & C

Answer: - Option D

21. If charge Q is 4 coulombs and time t is 1 seconds then current I is

- (A) 1 Ampere
- (B) 5 Ampere
- (C) 3 Ampere
- (D) 4 Ampere

Answer: - Option D

Explanation: - $I = Q/t$

22. If 3 joules work is done to charge a body to one coulomb Q then voltage V is

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

Answer: - Option C

Explanation: - $V = J/Q$

23. If current I is 7 amperes and time is 1 seconds then charge Q is

- (A) 6 coulombs
- (B) 7 coulombs
- (C) 8 coulombs
- (D) 1 coulombs

Answer: - Option B

Explanation: - $Q = I*t$

24. If charge Q is 8 coulombs and time t is 8 seconds then current I is

- (A) 1 Ampere
- (B) 5 Ampere
- (C) 3 Ampere
- (D) 4 Ampere

Answer: - Option A

Explanation: - $I = Q/t$

25. If current I is 2 amperes and time t is 4 seconds then charge Q is

- (A) 6 coulombs
- (B) 7 coulombs
- (C) 8 coulombs
- (D) 1 coulombs

Answer: - Option B

Explanation: - $Q = I*t$

26. If energy is 5 joules and time t is 1 seconds then power W is

- (A) 5 Watts
- (B) 4 Watts
- (C) 6 Watts
- (D) 1 Watt

Answer: - Option A

Explanation: - Energy = Power * time

27. If energy is 5 joules and time t is 5 seconds then power W is

- (A) 5 Watts
- (B) 4 Watts
- (C) 6 Watts
- (D) 1 Watt

Answer: - Option D

Explanation: - Energy = Power * time

28. The MMF of 75 turn coil of wire carrying 4 ampere current is

- (A) 71 At
- (B) 79 At
- (C) 300 At
- (D) 75 At

Answer: - Option C

Explanation: - MMF = Ampere-turns

29. The number of turns coil of wire carrying 2 ampere current having MMF of 100 At are

- (A) 98
- (B) 102
- (C) 50
- (D) 2

Answer: - Option C

Explanation: - MMF = Ampere-turns

30. The current through the wire having 200 number of turns and MMF of 200 At is

- (A) 1 A
- (B) 0 A
- (C) 400 A
- (D) 200 A

Answer: - Option C

Explanation: - MMF = Ampere-turns

31. The magnetic flux density in a magnetic field in which flux is 600 Microweber and area is 0.1 m²

- (A) 6000 microtesla
- (B) 600 microtesla
- (C) 6 tesla
- (D) 0.6 tesla

Answer: - Option A

Explanation: - $B = \text{Flux}/\text{Area}$

32. The flux in a magnetic field in which magnetic flux density is 0.003 Tesla and area is 0.4 m²

- (A) 1.2 miliweber
- (B) 1.2 weber
- (C) 0.0012 miliweber
- (D) 0.003 miliweber

Answer: - Option A

Explanation: - $B = \text{Flux}/\text{Area}$

33. When the length of the material increases reluctance

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

Answer: - Option A

34. The area of a magnetic field in which magnetic flux density is 0.008 Tesla and flux is 1.4 miliweber

- (A) 0.175 m²
- (B) 0.005 m²
- (C) 0.75 m²
- (D) 1.75 m²

Answer: - Option A

Explanation: - $B = \text{Flux}/\text{Area}$

35. The MMF of 50 turn coil of wire carrying 4 ampere current is

- (A) 71 At
- (B) 79 At
- (C) 200 At
- (D) 75 At

Answer: - Option C

Explanation: - $\text{MMF} = \text{Ampere-turn}$

Prepared By Mr. Mandale R. K.	Verified By Mr. Lavhate V. J. Module Coordinator	Re-Verified By Mr. Patil S. S. Academic Coordinator	Approved By Mr. Mandale R.K. HoD EE



02 – AC Fundamentals	Marks:-10
Content of Chapter:- 2.1 AC & DC 2.2 Generation of alternating voltage, phasor representation of sinusoidal quantities. 2.3 R, L, C circuit elements its voltage and current response. 2.4 R-L,R-C,R-L-C combination of A.C series circuit, impedance, reactance, impedance triangle, power factor, active power, apparent power, power triangle and vector diagram. 2.5 Resonance, Bandwidth, Quality factor and voltage magnification in series R-L, R-C, R-L-C circuit.	

1. All definitions of power factor of a series R-L-C circuit are correct except

- (A) Ratio of net reactance and impedance (B) Ratio of kW and kVA
(C) Ratio of J and Z (D) Ratio of W and VA

Answer: - Option A

Explanation: - Power factor = $\cos \phi = R/Z = \text{Active power} / \text{Apparent Power}$

2. Ohm is unit of all of the following except

- (A) Inductive reactance (B) Capacitive reactance
(C) Resistance (D) Capacitance

Answer: - Option C

Explanation: - unit of capacitance is farads

3. If two sinusoids of the same frequency but of different amplitudes and phase angles are subtracted, the resultant is

- (A) A sinusoid of the same frequency (B) A sinusoid of half the original frequency
(C) A sinusoid of double the frequency (D) Not a sinusoid

Answer: - Option A

Explanation: - sinusoidal quantities with same frequency can be added or subtracted

4. Form factor for a sine wave is

- (A) 1.414. (B) 0.707
(C) 1.11. (D) 0.637

Answer: - Option C

Explanation: - form factor = $\text{RMS Value} / \text{Average Value} = 1.11$

5. All the rules and laws of D.C. circuit also apply to A.C. circuit containing

- (A) Capacitance only (B) Inductance only
(C) Resistance only (D) All above

Answer: - Option C

Explanation: - Resistance is not charge or energy storing element of electrical circuit.

6. In R-L-C series resonant circuit magnitude of resonance frequency can be changed by changing the value of

- (A) R only (B) L only
(C) C only (D) L or C

Answer: - Option D

Explanation:-

$$f_o = \frac{1}{2\pi\sqrt{LC}}$$

7. In an A.C. circuit power is dissipated in

- (A) Resistance only (B) Inductance only
(C) Capacitance only (D) None of the above

Answer: - Option A

Explanation: - Resistance in a circuit that has a voltage drops across it and dissipates power

8. The R.M.S. value of half wave rectified sine wave is 200 V. The r.m.s. value of full wave rectified AC. will be

- (A) 282.8 V (B) 141.4 V
(C) 111 V (D) 100 V

Answer:-Option A

Explanation:-

Given,

$$V_{rms} = 200V$$

$$\text{We know the formula } V_{rms} = \frac{V_{applied}}{\sqrt{2}}$$

$$\text{So, } V_{applied} = 200\sqrt{2}$$

$$\Rightarrow 282.8V$$

9. The voltage of domestic supply is 220 V. This figure represents

- (A) Mean value (B) r.m.s. value
(C) Peak value (D) Average value

Answer: - Option A

10. The transient currents are associated with the

- (A) Changes in the stored energy in the inductors and capacitors (B) Impedance of the circuit
(C) Applied voltage to the circuit (D) Resistance of the circuit

Answer: Option A

Explanation: - Oscillatory or aperiodic current that flows in a circuit for a short time following an electromagnetic disturbance is called transient current

11. The power consumed in a circuit element will be least when the phase difference between the current and voltage is

- (A) 180° (B) 90°
(C) 60° (D) 0°

Answer: - Option B

Explanation: -Power= $V*I*\cos \Phi=V*I*\cos(90)=0$

12. Form Factor is the ratio of

- (A) Average value/r.m.s. value (B) Average value/peak value
(C) r.m.s. value/average value (D) r.m.s. value/peak value

Answer: - Option C

Explanation: -form factor=RMS Value/Average Value=1.11

13. Capacitive reactance is more when

- (A) Capacitance and frequency of supply is less (B) Capacitance is less and frequency of supply is more
(C) Capacitance is more and frequency of supply is less (D) Capacitance and frequency of supply is more

Answer: - Option A

Explanation:-

$$X_C = \frac{1}{2\pi fC}$$

14. Pure inductive circuit

- (A) Consumes some power on average (B) Does not take power at all from a line
(C) Store energy in magnetic field and again return to source (D) None of the above

Answer: - Option C

Explanation: - No power is consumed in the circuit.

15. Power factor of the following pure circuit will be zero

- (A) Resistance (B) Inductance
(C) Capacitance (D) Both (B) and (C)

Answer: - Option D

Explanation: - Power= $V \cdot I \cdot \cos\phi = V \cdot I \cdot \cos(90) = 0$

16. The double energy transient occur in the

- (A) Purely inductive circuit (B) R-L circuit
(C) R-C circuit (D) R-L-C circuit

Answer: - Option D

17. in any A.C. circuit always

- (A) Apparent power is more than actual power (B) Reactive power is more than apparent power
(C) Actual power is more than reactive power (D) Reactive power is more than actual power

Answer: Option A

Explanation: - Apparent Power=Active Power + Reactive Power

18. Magnitude of current at resonance in R-L-C circuit

- (A) Depends upon the magnitude of R (B) Depends upon the magnitude of L
(C) Depends upon the magnitude of C (D) Depends upon the magnitude of R, L and C

Answer: - Option A

Explanation: - Current=Voltage/impedance but for resonance only resistance is considered not impedance

19. When a sinusoidal voltage is applied across R-L series circuit having $R = X_L$, the phase angle will be

- (A) Lag by 45° (B) Lag by 90°
(C) Lead by 0 to 90° (D) Lead by 90°

Answer: - Option C

20. What do you know about RL circuit?

- (A) An electric circuit composed of resistors and inductors in series and driven by a voltage or current source
- (B) Conductor
- (C) an device composed of resistors and inductors driven by a voltage or current source
- (D) None of the above

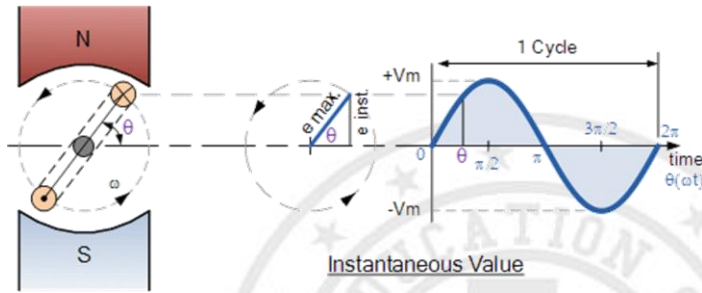
Answer: - Option A

21. Equation for induced emf is given by $e=BLV\sin\theta$ where θ represent

- (A) Angle made by coil with magnetic flux
- (B) Angle made by coil with external circuit
- (C) Length of coil
- (D) magnetic flux density

Answer: - Option A

22.

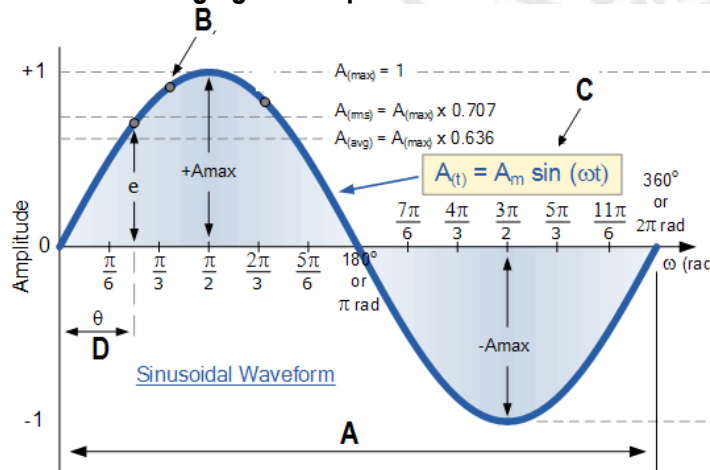


V_m represents.....

- (A) Time period
- (B) Amplitude
- (C) Cycle
- (D) Instantaneous Value

Answer: - Option B

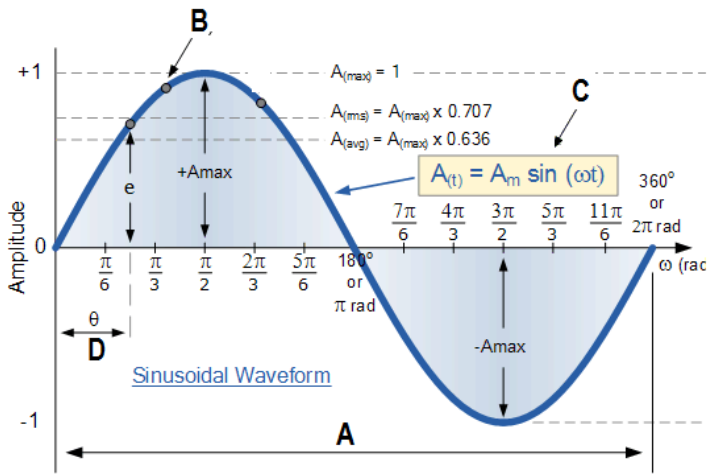
23. In following figure A represents.....



- (A) Time period
- (B) Amplitude
- (C) Cycle
- (D) Instantaneous Value

Answer: - Option A

24. In following figure B represents.....



(A) Time period

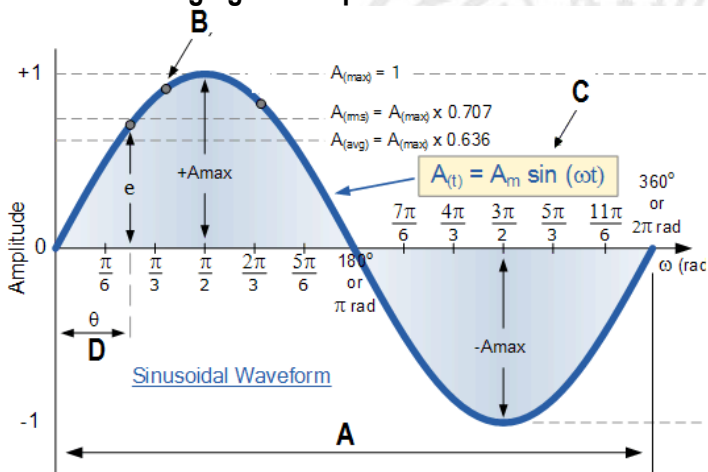
(B) Amplitude

(C) Cycle

(D) Instantaneous Value

Answer: - Option D

25. In following figure C represents.....



(A) Time period

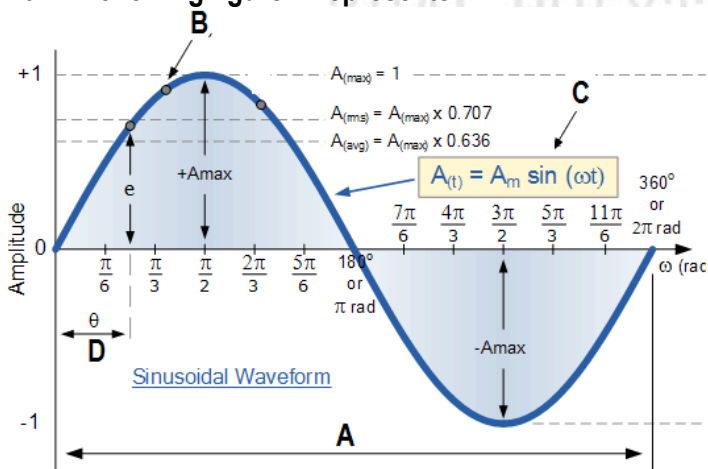
(B) Amplitude

(C) Cycle

(D) Equation for Instantaneous Value

Answer: - Option D

26. In following figure D represents.....



(A) Time period

(B) Amplitude

(C) Phase angle

(D) Equation for Instantaneous Value

Answer: - Option C

27. Unit of frequency is.....

- (A) Ohm
- (B) Hertz
- (C) Siemens
- (D) Second

Answer: - Option B

28. Unit of Resistance is.....

- (A) Ohm
- (B) Hertz
- (C) Siemens
- (D) Second

Answer: - Option A

29. Unit of inductive or capacitive Reactance is.....

- (A) Ohm
- (B) Hertz
- (C) Siemens
- (D) Second

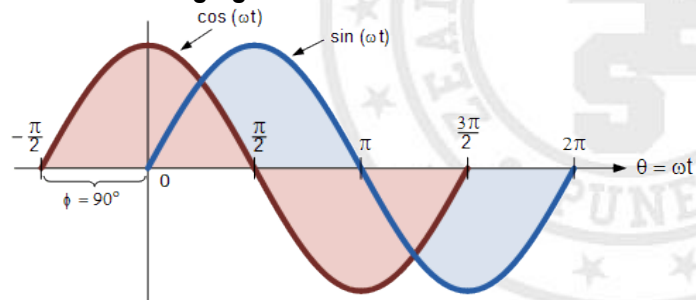
Answer: - Option A

30. Unit of Impedance is.....

- (A) Ohm
- (B) Hertz
- (C) Siemens
- (D) Second

Answer: - Option A

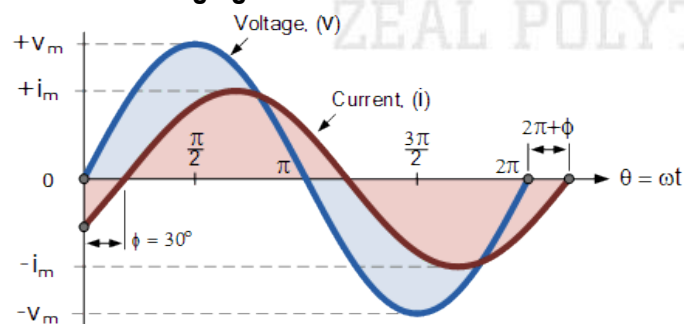
31. In following figure Phase difference is.....



- (A) 45°
- (B) 90°
- (C) 30°
- (D) 0°

Answer: - Option B

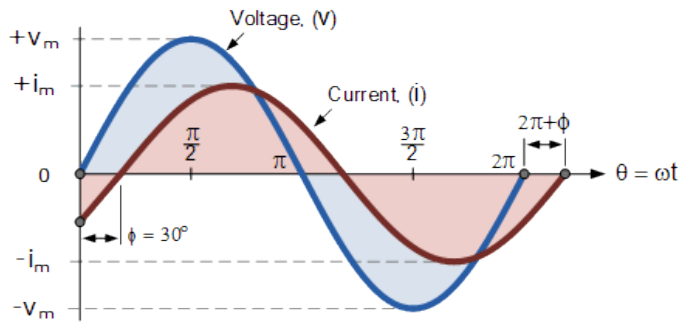
32. In following figure



- (A) Current leads voltage by 30°
- (B) Current lags voltage by 30°
- (C) Current leads voltage by 45°
- (D) Current lags voltage by 45°

Answer: - Option B

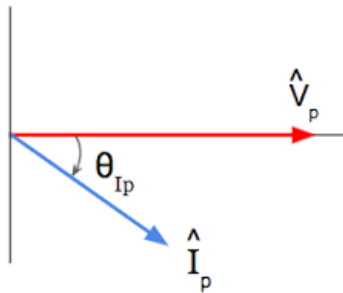
33. In following figure



- (A) Voltage leads current by 30°
- (B) Voltage lags current by 30°
- (C) Voltage leads current by 45°
- (D) Voltage lags current by 45°

Answer: - Option A

34. In following figure



- (A) Voltage lags current
- (B) Voltage leads current
- (C) Both are in Phase
- (D) none of these

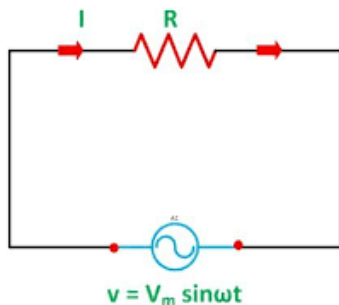
Answer: - Option B

35. Reactance means.....

- (A) Opposition to current by inductor
- (B) Opposition to current by capacitor
- (C) Both A & B
- (D) none of these

Answer: - Option C

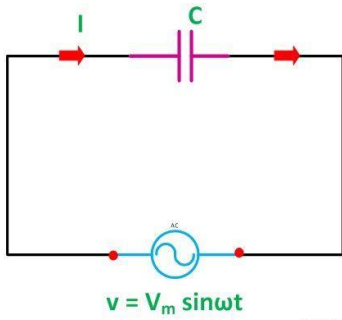
36. Following figure represents which type of AC Circuit.....



- (A) Pure Resistive
- (B) Pure capacitor
- (C) Pure Inductive
- (D) none of these

Answer: - Option A

37. Following figure represents which type of AC Circuit.....

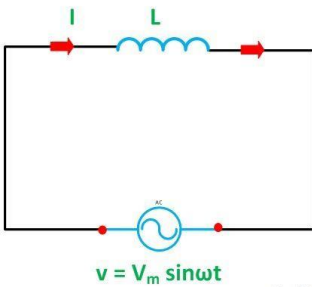


Circuit Globe

- (A) Pure Resistive
- (B) Pure capacitor
- (C) Pure inductive
- (D) none of these

Answer: - Option B

38. Following figure represents which type of AC Circuit.....

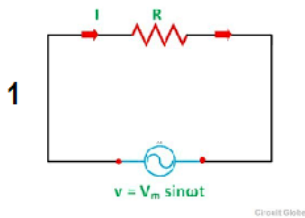


Circuit Globe

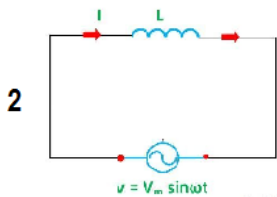
- (A) Pure Resistive
- (B) Pure capacitor
- (C) Pure inductive
- (D) none of these

Answer: - Option C

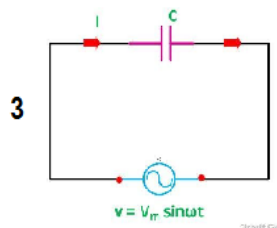
39. Which of following is correct sequence



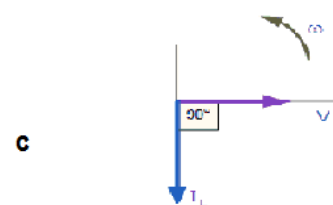
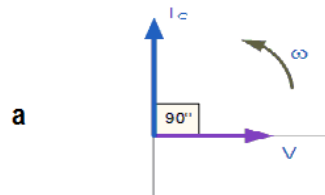
Circuit Globe



Circuit Globe



Circuit Globe



- (A) 1-a, 2-b, 3-c
- (B) 1-b, 2-a, 3-c
- (C) 1-b, 2-c, 3-a
- (D) None of these

Answer: - Option C

40. Impedance for Pure Resistive circuit is

- (A) $Z=X_L$ (B) $Z=X_C$
(C) $Z=0$ (D) $Z=R$

Answer: - Option D

41. Impedance for Pure Inductive circuit is

- (A) $Z=X_L$ (B) $Z=X_C$
(C) $Z=0$ (D) $Z=R$

Answer: - Option A

42. Impedance for Pure Capacitive circuit is

- (A) $Z=X_L$ (B) $Z=X_C$
(C) $Z=0$ (D) $Z=R$

Answer: - Option B

43. Identify type of circuit from voltage and current equation's

Voltage, $v = V_m \sin \omega t$

Current, $i = I_m \sin(\omega t + \frac{\pi}{2})$

- (A) Purely Resistive (B) Purely Inductive
(C) Purely Capacitive (D) None

Answer: - Option C

44. Identify type of circuit from voltage and current equation's

Applied Voltage, $v = V_m \sin \omega t$

Resultant Current, $i = I_m \sin \omega t$

- (A) Purely Resistive (B) Purely Inductive
(C) Purely Capacitive (D) None

Answer: - Option A

45. Identify type of circuit from voltage and current equation's

Applied Voltage, $v = V_m \sin \omega t$

Resultant Current, $i = I_m \sin(\omega t - \frac{\pi}{2})$

- (A) Purely Resistive (B) Purely Inductive
(C) Purely Capacitive (D) None

Answer: - Option B

46. Formula & Unit of Active Power is

- (A) $S=V*I$, VA (B) $Q=V*I*\sin\phi$, VAR
(C) $P=V*I*\cos\phi$, Watt (D) None

Answer: - Option C

47. Formula & Unit of Reactive Power is

- (A) $S=V*I$, VA (B) $Q=V*I*\sin\phi$, VAR
(C) $P=V*I*\cos\phi$, Watt (D) None

Answer: - Option B

48. Formula & Unit of apparent Power is

- (A) $S=V*I$, VA (B) $Q=V*I*\sin\phi$, VAR
(C) $P=V*I*\cos\phi$, Watt (D) None

Answer: - Option A

49. Which of following is correct sequence?

Sr.	Condition		Power Factor (Cos Φ)
1	$X_L > X_C$	a	Less than one and leading
2	$X_C > X_L$	b	Unity
3	$X_L = X_C$	c	Less than one and lagging

(A) 1-a, 2-b, 3-c

(B) 1-c, 2-a, 3-b

(C) 1-c, 2-b, 3-a

(D) None

Answer: - Option B

50. Formula for Q factor at resonance in RLC series circuit is?

A. $Q = \sqrt{\frac{L}{C}}$	B. $Q = \frac{1}{R} \sqrt{\frac{L}{C}}$
C. $Q = \frac{1}{R} \sqrt{\frac{C}{L}}$	D. $Q = \sqrt{\frac{C}{L}}$

Answer: - Option B

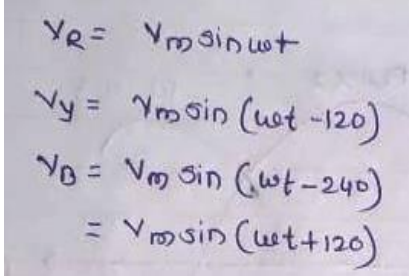
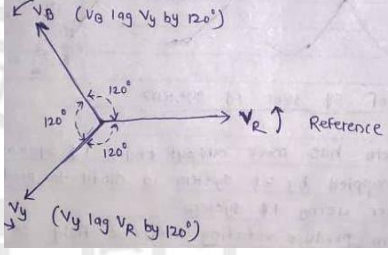
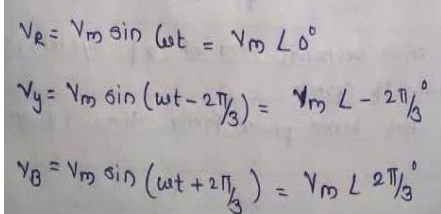
Prepared By Mr. Mandale R. K.	Verified By Mr. Lavhate V. J. Module Coordinator	Re-Verified By Mr. Patil S. S. Academic Coordinator	Approved By Mr. Mandale R.K. HoD EE

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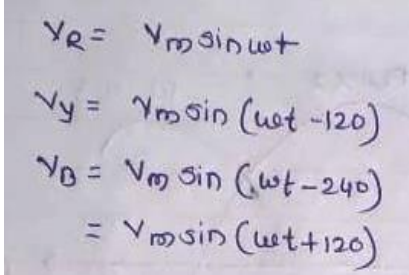
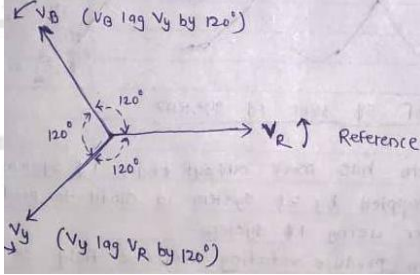
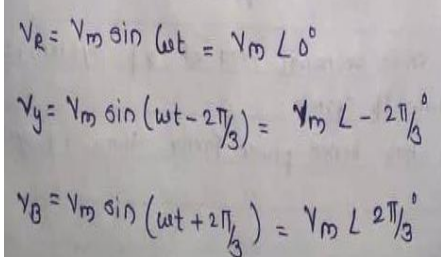
03 – Three phase AC Circuits	Marks:-13
Content of Chapter:- 3.1 Phasor and complex representation of three phase supply. 3.2 Phase sequence and polarity. 3.3 Types of three phase connections, phase and line quantities in three phase star and delta system. 3.4 Balanced and unbalanced load, neutral shift in unbalanced load. 3.5 Three phase power, active, reactive and apparent power in star and delta system.	

1. Which of following is mathematical representation of 3 phase voltages?

<p>(A)</p> 	<p>(B)</p> 
<p>(C)</p> 	<p>(D) None of these</p>

Answer: - Option A

2. Which of following is Phasor representation of 3 phase voltages?

<p>(A)</p> 	<p>(B)</p> 
<p>(C)</p> 	<p>(D) None of these</p>

Answer: - Option B

3. Which of following is complex representation of 3 phase voltages?

<p>(A)</p> $V_R = V_m \sin \omega t$ $V_Y = V_m \sin (\omega t - 120)$ $V_B = V_m \sin (\omega t - 240)$ $= V_m \sin (\omega t + 120)$	<p>(B)</p>
<p>(C)</p> $V_R = V_m \sin \omega t = V_m \angle 0^\circ$ $V_Y = V_m \sin (\omega t - 2\pi/3) = V_m \angle -2\pi/3^\circ$ $V_B = V_m \sin (\omega t + 2\pi/3) = V_m \angle 2\pi/3^\circ$	<p>(D)</p> <p>None of these</p>

Answer: - Option C

4. Which of following is advantage on 3 Phase AC over 1 Phase AC System?

- (A) More output power
- (B) Less space required to produce same power
- (C) Self-starting of machine is possible
- (D) All of them

Answer: - Option D

5. Phase Sequence is a sequence in which 3 phase voltages reach their Values

- (A) Minimum positive
- (B) Maximum Positive
- (C) Minimum Negative
- (D) Maximum Negative

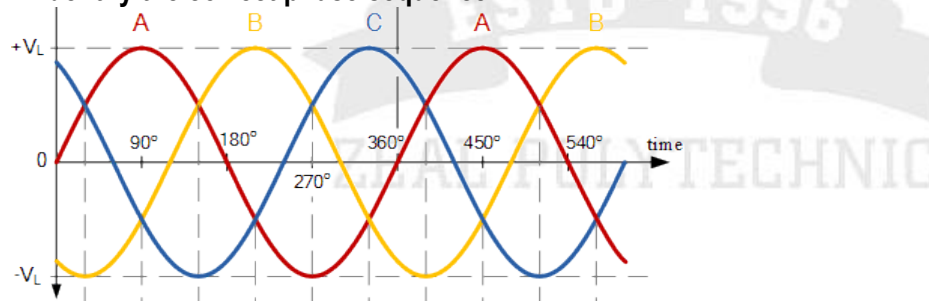
Answer: - Option B

6. What happens if Phase sequence is changed?

- (A) Motor takes large current
- (B) Motor rotation direction changes
- (C) Motor Stops
- (D) Motor continue rotation in same direction

Answer: - Option B

7. Identify the correct phase sequence?

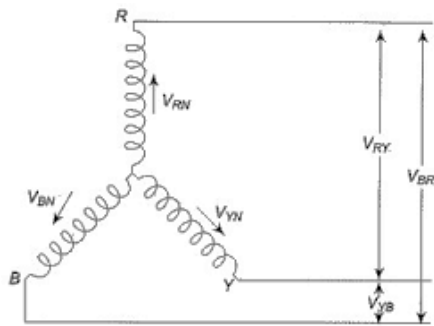


- (A) B-C-A
- (B) A-B-C
- (C) C-A-B
- (D) None of above

Answer: - Option B

Explanation: - Phase Sequence is a sequence in which 3 phase voltages reach their maximum positive values

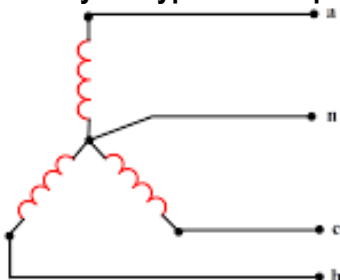
8. Identify the type of three phase connection?



- (A) Three Phase Three Wire Star Connected System
- (B) Three Phase Four Wire Star Connected System
- (C) Three Phase Three Wire Delta Connected System
- (D) None of above

Answer: - Option A

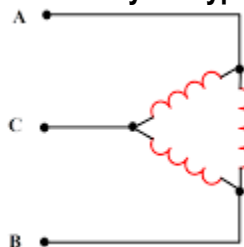
9. Identify the type of three phase connection?



- (A) Three Phase Three Wire Star Connected System
- (B) Three Phase Four Wire Star Connected System
- (C) Three Phase Three Wire Delta Connected System
- (D) None of above

Answer: - Option B

10. Identify the type of three phase connection?



- (A) Three Phase Three Wire Star Connected System
- (B) Three Phase Four Wire Star Connected System
- (C) Three Phase Three Wire Delta Connected System
- (D) None of above

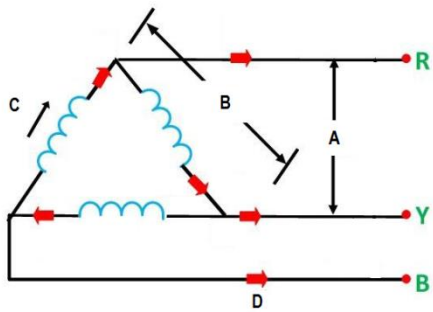
Answer: - Option C

11. Voltage across any phase is..... and voltage across any two lines is.....

- (A) Line Voltage, Phase voltage
- (B) Phase Voltage, Line voltage
- (C) 3 Phase Voltage
- (D) None of above

Answer: - Option B

12. What is A in fig. below

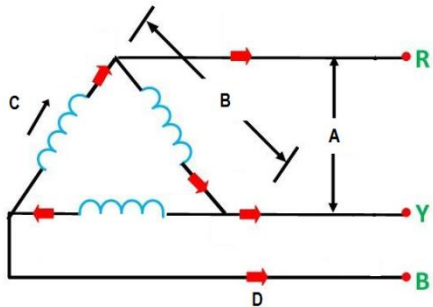


- (A) Line Voltage
- (C) Phase Current

- (B) Phase Voltage
- (D) Line Current

Answer: - Option A

13. What is B in fig. below?

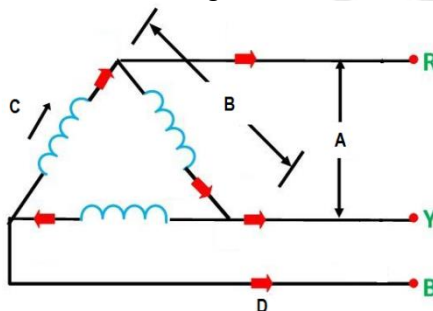


- (A) Line Voltage
- (C) Phase Current

- (B) Phase Voltage
- (D) Line Current

Answer: - Option B

14. What is C in fig. below?

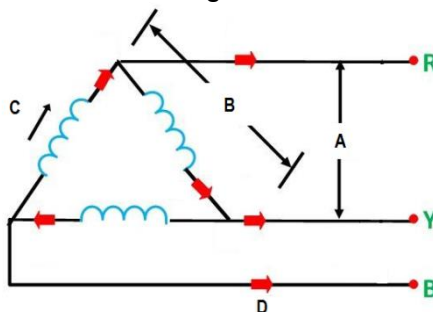


- (A) Line Voltage
- (C) Phase Current

- (B) Phase Voltage
- (D) Line Current

Answer: - Option C

15. What is D in fig. below?

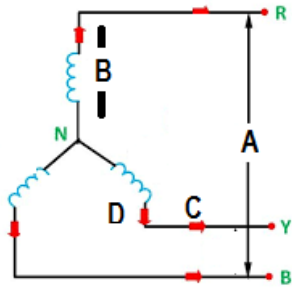


- (A) Line Voltage
- (C) Phase Current

- (B) Phase Voltage
- (D) Line Current

Answer: - Option D

16. What is A in fig. below?

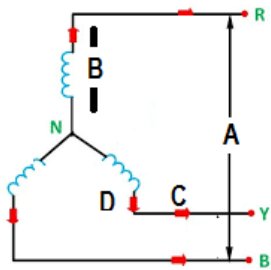


- (A) Line Voltage
- (C) Phase Current

- (B) Phase Voltage
- (D) Line Current

Answer: - Option A

17. What is B in fig. below?

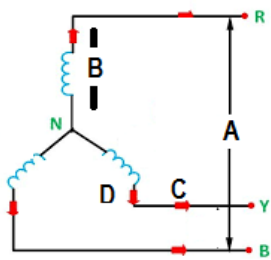


- (A) Line Voltage
- (C) Phase Current

- (B) Phase Voltage
- (D) Line Current

Answer: - Option B

18. What is C in fig. below?

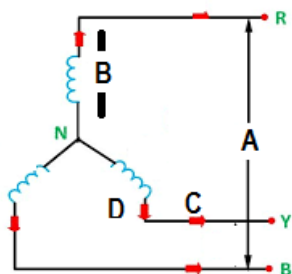


- (A) Line Voltage
- (C) Phase Current

- (B) Phase Voltage
- (D) Line Current

Answer: - Option C

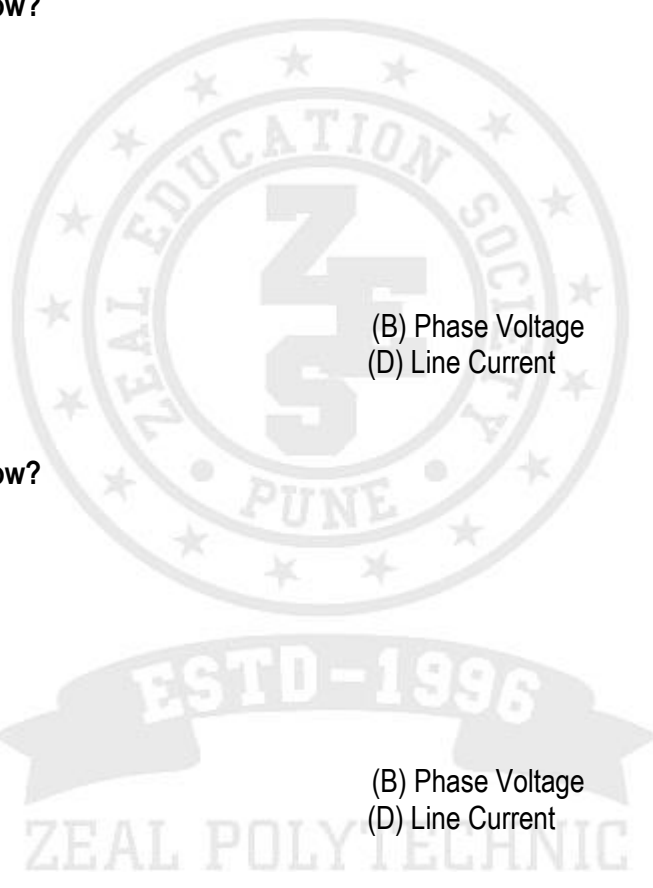
19. What is D in fig. below?



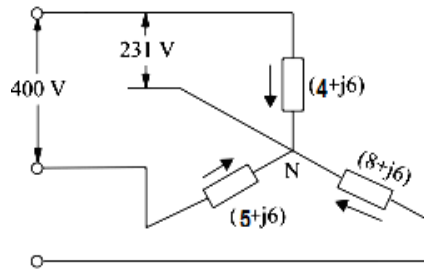
- (A) Line Voltage
- (C) Phase Current

- (B) Phase Voltage
- (D) Line Current

Answer: - Option D



20. Identify type of load

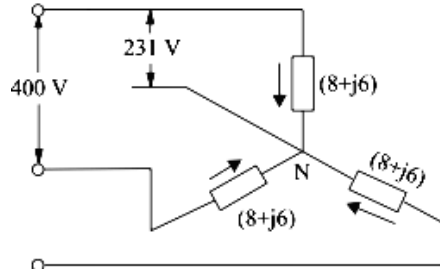


- (A) Unbalanced Star Load
 (B) Unbalanced Delta Load
 (C) Balanced Star Load
 (D) Balanced Delta Load

Answer: - Option A

Explanation: - All impedances are not equal

21. Identify type of load



- (A) Unbalanced Star Load
 (B) Unbalanced Delta Load
 (C) Balanced Star Load
 (D) Balanced Delta Load

Answer: - Option C

Explanation: - All impedances are equal

22. In balanced star or Delta connected load all phase and line values of current & voltage will be.....

- (A) Unequal
 (B) Depends on type of load
 (C) Equal
 (D) None of above

Answer: - Option C

Explanation: - All impedances are equal so all values will be equal

23. In Unbalanced star or Delta connected load all phase and line values of current & voltage will be.....

- (A) Unequal
 (B) Depends on type of load
 (C) Equal
 (D) None of above

Answer: - Option A

Explanation: - All impedances are unequal so all values will be unequal

24. For a star connected three phase AC circuit ———

- (A) Phase voltage is equal to line voltage and phase current is root three times the line current
 (B) Phase voltage is square root three times line voltage and phase current is equal to line current
 (C) Phase voltage is equal to line voltage and line current is equal to phase current
 (D) None of the above

Answer: - Option B

$$I_L = I_{ph.}$$

$$V_L = \sqrt{3}V_{ph}$$

Explanation: -

25. For a Delta connected three phase AC circuit ———

- (A) Phase voltage is equal to line voltage and phase current is three times the line current
- (B) Phase voltage is square root three times line voltage and phase current is equal to line current
- (C) Phase voltage is equal to line voltage and line current is equal to square root three times phase current
- (D) None of the above

Answer: - Option C

$$V_L = V_P$$

Explanation: - $I_L = \sqrt{3} \times I_P$

26. Active Power in a Three Phase Circuit = _____.

- (A) $P = 3 V_{Ph} I_{Ph} \cos\Phi$
- (B) $P = \sqrt{3} V_L I_L \cos\Phi$
- (C) Both 1 & 2
- (D) None of The Above

Answer: - Option B

27. Which of following is correct?

Sr. No.	Type of Power	Equation of Power	Unit of Power
1	Active Power	a- $Q = \sqrt{3} V_L I_L \sin\Phi$	i- VA
2	Reactive Power	b- $S = \sqrt{3} V_L I_L$	ii- Watt
3	Apparent Power	c- $P = \sqrt{3} V_L I_L \cos\Phi$	iii- VAR

- (A) 1-a-i
2-b-ii
3-c-iii
- (B) 1-c-i
2-a-ii
3-b-iii
- (C) 1-c-ii
2-a-iii
3-b-i
- (D) 1-c-ii
2-a-i
3-b-iii

Answer: - Option C

28. A three phase delta connected balanced load having resistance of 50 ohm/phase and capacitance of 50 microfarads/phase supplied by 440 V, 50 Hz AC supply. Capacitive reactance will be.

- (A) 60 ohm
- (B) 63.69 ohm
- (C) 80 Ohm
- (D) 100 ohms

Answer: - Option B

29. In problem no. 28 Total Impedance will be.

- (A) 60 ohm
- (B) 63.69 ohm
- (C) 80.97 Ohm
- (D) 100 ohms

Answer: - Option C

30. In problem no. 28 Phase Current will be.

- (A) 1 Ampere
- (B) 2.43 Ampere
- (C) 5.43 Ampere
- (D) 8 Ampere

Answer: - Option C

31. In problem no. 28 Line Current will be.

- (A) 1 Ampere
- (B) 2.43 Ampere
- (C) 5.43 Ampere
- (D) 9.41 Ampere

Answer: - Option D

32. In problem no. 28 Active power will be.

- (A) 4400 Watt (B) 4429.5 Watt
(C) 4400 VA (D) 4429.5 VA

Answer: - Option B

33. In problem no. 28 Reactive power will be.

- (A) 5682.5 VAR (B) 4429.5 VAR
(C) 4400 VAR (D) 5000 VAR

Answer: - Option A

33. In problem no. 28 Power factor will be.

- (A) 0.6 (B) 0.8
(C) 0.5 (D) 0.9

Answer: - Option A

34. A three phase Star connected balanced load having resistance of 6 ohm/phase and inductive reactance is 8 ohm/phase supplied by 400 V, 50 Hz AC supply. Find Phase voltage.

- (A) 23.9 Volt (B) 230.9 Volt
(C) 300 Volt (D) 400 Volt

Answer: - Option B

35. In problem no. 34 Impedance will be.

- (A) 20 ohm (B) 63.69 ohm
(C) 80.97 Ohm (D) 10 ohms

Answer: - Option D

36. In problem no. 34 Phase Current and line current will be.

- (A) 30 Ampere (B) 23 Ampere
(C) 25 Ampere (D) 24 Ampere

Answer: - Option C

37. In problem no. 34 Active power will be.

- (A) 9510 Watt (B) 9598.3Watt
(C) 9500 Watt (D) 0 Watt

Answer: - Option B

38. For a star connection network, consuming power of 1.8kW and power factor 0.5, the inductance and resistance of each coil at a supply voltage of 230 Volts, 60 Hz is _____?

- (A) 0.1H, 8 Ohms (B) 0.5H, 10 Ohms
(C) 0.3H, 7.4 Ohms (D) 1H, 7 Ohms

Answer: - Option C

39. A three phase Delta connected balanced load having impedance of $6+j8$ supplied by 400 V, 50 Hz AC supply. Find Z_{ph} .

- (A) 10 Ohms (B) 15 Ohms
(C) 7.4 Ohms (D) 7 Ohms

Answer: - Option A

40. In problem no. 39, Find V_{ph} .

- (A) 450 Volt (B) 400 Volt
(C) 350 Volt (D) 230 Volt

Answer: - Option B

41. In problem no. 39, find I_{ph}

(A) 30 A

(B) 35 A

(C) 40A

(D) 45 A

Answer: - Option C

42. In problem no. 39, find I_L

(A) 70 A

(B) 75 A

(C) 80A

(D) 85 A

Answer: - Option A

43. In problem no. 39, find Active Power

(A) 20.7 Watt

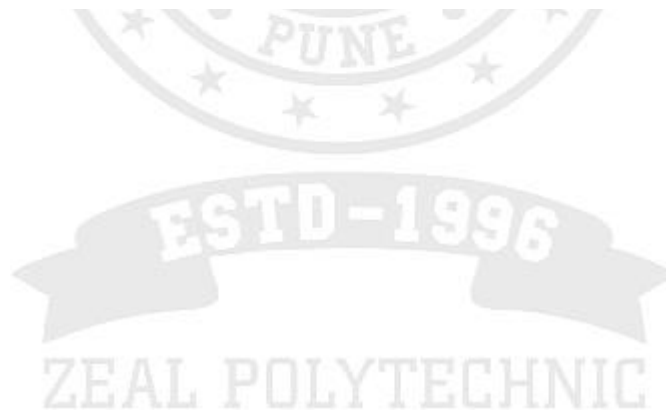
(B) 22.7Watt

(C) 26.7 Watt

(D) 28.7 Watt

Answer: - Option D

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04 & 05– Transformers , DC Motors & Fractional Motors	Marks:-28
Content of Chapter:- 3.1 General construction and principle of different type of transformers, EMF equation and transformation ratio of transformers. 3.2 Auto transformers. 3.3 Construction and working principle of single phase A.C. motor. 3.4 Type of single phase motors, application of single phase motors. 3.5 DC Motors 3.6 Fractional motors	

1. Which of the following motor will have relatively higher power factor

- (A) Capacitor start motor
- (B) Shaded pole motor
- (C) Capacitor run motor
- (D) Split phase motor

Answer: - Option C

2. A centrifugal switch is used to disconnect 'starting winding when the motor has

- (A) Picked up 10% speed
- (B) Picked up 20% speed
- (C) Picked up 5 – 10% speed
- (D) Picked up 50 – 75% speed

Answer: - Option D

3. A shaded pole motor does not possess

- (A) Commutator
- (B) Centrifugal switch
- (C) Capacitor
- (D) All of the above

Answer: - Option D

4. The motor which is mostly preferred for compressors is

- (A) Capacitor start Capacitor run motor
- (B) Shaded pole motor
- (C) Universal Motor
- (D) Hysteresis Motor

Answer: - Option A

5. If a single-phase induction motor runs slower than normal, the most likely defect is

- (A) Short circuit winding
- (B) Open circuit winding
- (C) Worn bearing
- (D) All of the above

Answer: - Option C

6. The power factor of a single-phase induction motor is usually

- (A) Always Lagging
- (B) Always Leading
- (C) Unity
- (D) None of the above

Answer: - Option A

7. In a split-phase motor

- (A) Both starting and running windings are connected through a centrifugal switch
- (B) Centrifugal switch is used to control supply voltage
- (C) The running winding is connected through a centrifugal switch
- (D) The starting winding is connected through a centrifugal switch

Answer: - Option D

8. If the centrifugal switch does not open at 70 to 80 percent of the synchronous speed of the motor, it can

- (A) Damage to the starting winding
- (B) Overloading of running winding
- (C) Damage to the centrifugal switch
- (D) None of the above

Answer: - Option A

9. In a capacitor start a single-phase motor, when the capacitor is replaced by a resistance

- (A) Motor will consume less power
- (B) Motor will continue to run in the same direction
- (C) Motor may get burn
- (D) None of the above

Answer: - Option C

10. If the capacitor of a single-phase motor is short-circuited

- (A) The motor will not start
- (B) The motor will run in the same direction at a reduced speed
- (C) The motor will run in the reverse direction
- (D) None of the above

Answer: - Option A

11. In a ceiling fan employing capacitor run motor

- (A) Primary winding surrounds the secondary winding
- (B) Secondary winding surrounds the primary winding
- (C) Either 1 or 2
- (D) None of the above

Answer: - Option B

12. In a split-phase motor the main winding is made up of

- (A) Thick wire placed at the top of the slots
- (B) Thick wire placed at the bottom of the slots
- (C) Thin wire placed at the top of the slots
- (D) Thin wire placed at the bottom of the slots

Answer: - Option B

13. In a two-value capacitor motor, the capacitor used for running purposes is

- (A) Paper spaced oil-filled type
- (B) Air capacitor
- (C) Ceramic type
- (D) None of the above

Answer: - Option A

14. Starting winding of a single-phase motor of a refrigerator is disconnected from the circuit by means of

- (A) Magnetic Relay
- (B) Centrifugal switch
- (C) Thermal Relay
- (D) None of the above

Answer: - Option B

15. Capacitor-start single phase induction motor is switched on to supply with its capacitor replaced by an inductor of equivalent reactance value then the

- (A) Motor will not start
- (B) Motor will Start and run
- (C) Small KW motor can start but large KW motor will not start
- (D) None of the above

Answer: - Option C

16. The motor which is mostly preferred for toys is

- (A) Universal Motor
- (B) Repulsion Motor
- (C) Series Motor
- (D) Shaded Pole Motor

Answer: - Option D

17. The motor which is mostly preferred for large commercial Refrigerators is

- (A) Universal Motor
- (B) Hysteresis Motor
- (C) Series Motor
- (D) Capacitor start Motor

Answer: - Option D

18. The motor which is mostly preferred for Washing Machines is

- (A) Universal Motor
- (B) Repulsion Motor
- (C) Series Motor
- (D) Resistance start induction run motor

Answer: - Option D

19. The motor which is mostly preferred for Ceiling fans is

- (A) Universal Motor
- (B) Hysteresis Motor
- (C) Series Motor
- (D) Permanent split capacitor motor

Answer: - Option D

20. The motor which is mostly preferred for film projectors is

- (A) Universal Motor

- (B) Repulsion Motor
- (C) Series Motor
- (D) Shaded pole motor

Answer: - Option D

21. The single phase motor which is mostly preferred for Vacuum cleaners is

- (A) Universal Motor
- (B) Repulsion Motor
- (C) A.C Series Motor
- (D) Capacitor start capacitor run motor

Answer: - Option A

22. The single phase motor which is mostly preferred for Oil burners is

- (A) Universal Motor
- (B) Resistance start induction run motor
- (C) A.C Series Motor
- (D) Capacitor start capacitor run motor

Answer: - Option B

23. The single phase motor which is mostly preferred for Photo copying machines is

- (A) Universal Motor
- (B) Resistance start induction run motor
- (C) Shaded Pole Motor
- (D) Capacitor start capacitor run motor

Answer: - Option C

24. The motor which is mostly preferred for Air conditioners is

- (A) Universal Motor
- (B) Hysteresis Motor
- (C) A.C Series Motor
- (D) Capacitor start motor

Answer: - Option D

25. The motor which is mostly preferred for gramophones is

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

Answer: - Option B

26. The motor which is mostly preferred for Advertising displays is

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

Answer: - Option C

27. Which of the following motor has relatively higher starting torque

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

Answer: - Option D

28. Which of the following motor has relatively poor starting torque

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

Answer: - Option C

29. Oil level in bearings of a single phase induction motor must be checked

- (A) Daily
- (B) Weekly
- (C) Monthly
- (D) Yearly

Answer: - Option B

30. Conductor of Insulation of a single phase induction motor must be checked

- (A) Daily
- (B) Weekly
- (C) Monthly
- (D) Yearly

Answer: - Option D

31. Capacitor and centrifugal switch of a single phase induction motor must be checked

- (A) Daily
- (B) Weekly
- (C) Monthly
- (D) Half – Yearly

Answer: - Option D

32. The direction of rotation of the universal motor can be reversed by reversing the flow of current through

- (A) Field winding
- (B) Armature winding
- (C) Either 1 or 2
- (D) None of the above

Answer: - Option B

33. Starter switch and fuses of a single phase induction motor must be checked

- (A) Daily
- (B) Weekly
- (C) Monthly
- (D) Half – Yearly

Answer: - Option B

34. Oil in the sleeve bearings of a single phase induction motor must be replaced

- (A) Daily
- (B) Weekly
- (C) Monthly
- (D) Half – Yearly

Answer: - Option D

35. Air gap of a single phase induction motor must be checked

- (A) Daily
- (B) Weekly
- (C) Monthly
- (D) Yearly

Answer: - Option D

36. Loose connections of a single phase induction motor must be checked

- (A) Daily
- (B) Weekly
- (C) Monthly
- (D) Yearly

Answer: - Option B

37. If the supply frequency of a transformer increases, the secondary output voltage of the transformer

- (A) Increase
- (B) Decrease
- (C) Remain the same
- (D) Any of the above

Answer: - Option A

38. Power transformers are designed to have maximum efficiency at

- (A) Full load
- (B) 50% load
- (C) 80% load
- (D) No load

Answer: - Option A

39. Transformer core are laminated in order to

- (A) Reduce hysteresis loss
- (B) Reduce hysteresis & eddy current loss
- (C) Minimize eddy current loss
- (D) Copper loss

Answer: - Option B

40. Breather is provided in a transformer to

- (A) Absorb moisture of air during breathing
- (B) Provide cold air in the transformer
- (C) The filter of transformer oil
- (D) None of above

Answer: - Option A

41. The leakage flux in a transformer depends upon the value of

- (A) Frequency
- (B) Mutual Flux
- (C) Load current
- (D) Applied Voltage

Answer: - Option A

42. In a transformer ideally the resistance between its primary and secondary is

- (A) Zero
- (B) Infinite
- (C) 1000 ohm
- (D) 100 ohm

Answer: - Option B

43. The transformer ratings are usually expressed in terms of

- (A) KW
- (B) KVAR
- (C) KVA
- (D) Volts

Answer: - Option C

44. Which winding in a transformer has more number of turns?

- (A) Secondary winding
- (B) Primary winding
- (C) High voltage winding
- (D) Low voltage winding

Answer: - Option C

45. Oil is provided in an oil-filled transformer for

- (A) Lubrication
- (B) Insulation
- (C) Cooling
- (D) Both cooling and insulation

Answer: - Option D

45. An autotransformer can be used as

- (A) Step up device
- (B) Step down device
- (C) Both step up and step down
- (D) None of the above

Answer: - Option C

46. In an Auto Transformer, The Primary and Secondary are _____ Coupled

- (A) Electrically only
- (B) Magnetically only
- (C) Both electrically & magnetically
- (D) None of the above

Answer: - Option C

47. Which type of transformer does not isolate the secondary?

- (A) Potential transformer
- (B) Autotransformer
- (C) Distribution transformer
- (D) Current transformer

Answer: - Option B

48. Which of the following are applications of Auto-transformer?

- (A) Used as switch
- (B) Used as Variac
- (C) Used for voltage correction
- (D) All of the above

Answer: - Option D

49. Which of the following is the major disadvantage of Autotransformer?

- (A) No primary and secondary wire isolation
- (B) Insulation failure of primary winding may damage the whole autotransformer
- (C) Individual earthing of winding is not possible
- (D) All of the above

Answer: - Option D

50. The size of the transformer core mainly depends on

- (A) Frequency
- (B) Area of core
- (C) Flux density of core
- (D) Both frequency and area of core

Answer: - Option D

51. The motor which is mostly preferred for electric power steering is

- (A) Switched Reluctance Motor
- (B) Stepper Motor
- (C) Servo Motor
- (D) Synchronous Reluctance Motor

Answer: - Option A

52. The motor which is mostly preferred for compressors is

- (A) Switched Reluctance Motor
- (B) Stepper Motor
- (C) Synchronous Reluctance Motor
- (D) Servo Motor

Answer: - Option A

53. The motor which is mostly preferred for food processors is

- (A) Switched Reluctance Motor
- (B) Stepper Motor
- (C) Synchronous Reluctance Motor
- (D) Servo Motor

Answer: - Option A

54. The motor which is mostly preferred for Vacuum Cleaners is

- (A) Switched Reluctance Motor
- (B) Stepper Motor
- (C) Synchronous Reluctance Motor
- (D) Permanent Magnet Synchronous Motor

Answer: - Option A

55. The motor which is mostly preferred for Serial Printers is

- (A) Switched Reluctance Motor
- (B) Stepper Motor
- (C) Synchronous Reluctance Motor
- (D) Permanent Magnet Synchronous Motor

Answer: - Option B

56. The motor which is mostly preferred for floppy disc drives is

- (A) Switched Reluctance Motor
- (B) Stepper Motor
- (C) Synchronous Reluctance Motor
- (D) Permanent Magnet Synchronous Motor

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Answer: - Option B

57. The motor which is mostly preferred for Space-craft is

- (A) Switched Reluctance Motor
- (B) Stepper Motor
- (C) Synchronous Reluctance Motor
- (D) Permanent Magnet Synchronous Motor

Answer: - Option B

58. The motor which is mostly preferred for Numerical control of machine tools is

- (A) Switched Reluctance Motor
- (B) Stepper Motor
- (C) Synchronous Reluctance Motor
- (D) Permanent Magnet Synchronous Motor

Answer: - Option B

59. The motor which is mostly preferred for Process control systems is

- (A) Switched Reluctance Motor
- (B) Stepper Motor
- (C) Synchronous Reluctance Motor
- (D) Permanent Magnet Synchronous Motor

Answer: - Option B

60. The motor which is mostly preferred for Cryogenic coolers is

- (A) Switched Reluctance Motor
- (B) Stepper Motor
- (C) Synchronous Reluctance Motor
- (D) BLDC Motor

Answer: - Option D

61. The motor which is mostly preferred for Artificial Heart Pumps is

- (A) BLDC Motor
- (B) Stepper Motor
- (C) Synchronous Reluctance Motor
- (D) Permanent Magnet Synchronous Motor

Answer: - Option A

62. The motor which is mostly preferred for Hard Disc Drive is

- (A) BLDC Motor
- (B) Switched Reluctance Motor
- (C) Synchronous Reluctance Motor
- (D) Permanent Magnet Synchronous Motor

Answer: - Option A

63. The motor which is mostly preferred for elevators is

- (A) BLDC Motor
- (B) Switched Reluctance Motor
- (C) Synchronous Reluctance Motor
- (D) Permanent Magnet Synchronous Motor

Answer: - Option D

64. The motor which is mostly preferred for traction is

- (A) Permanent Magnet Synchronous Motor
- (B) Switched Reluctance Motor
- (C) Synchronous Reluctance Motor
- (D) Stepper Motor

Answer: - Option A

65. The motor which is mostly preferred for glass industry is

- (A) Permanent Magnet Synchronous Motor
- (B) Switched Reluctance Motor
- (C) Synchronous Reluctance Motor
- (D) Stepper Motor

Answer: - Option A

66. The motor which is mostly preferred for steel rolling mills is

- (A) Permanent Magnet Synchronous Motor
- (B) Switched Reluctance Motor
- (C) Synchronous Reluctance Motor
- (D) Stepper Motor

Answer: - Option A

67. The motor which is mostly preferred for fibre spinning mills is

- (A) Permanent Magnet Synchronous Motor
- (B) Switched Reluctance Motor
- (C) Synchronous Reluctance Motor
- (D) Stepper Motor

Answer: - Option A

68. The maximum stepping rate of variable reluctance stepper motor is upto _____ pulses per seconds

- (A) 120
- (B) 12
- (C) 12000
- (D) 1200

Answer: - Option D

69. The maximum stepping rate of permanent magnet stepper motor is upto _____ pulses per seconds

- (A) 120
- (B) 300
- (C) 3000
- (D) 1200

Answer: - Option C

70. Which of the following motor has low inertia?

- (A) Permanent Magnet Synchronous Motor
- (B) Servo Motor
- (C) Synchronous Reluctance Motor
- (D) Stepper Motor

Answer: - Option B

71. Which of the following motor has high speed of response?

- (A) Permanent Magnet Synchronous Motor
- (B) Servo Motor
- (C) Synchronous Reluctance Motor
- (D) Stepper Motor

Answer: - Option B

72. Which of the following motor has linear torque speed characteristics?

- (A) Permanent Magnet Synchronous Motor
- (B) Servo Motor
- (C) Synchronous Reluctance Motor
- (D) Stepper Motor

Answer: - Option B

73. The motor which is mostly preferred for remote positioning devices is

- (A) Switched Reluctance Motor
- (B) Permanent Magnet Synchronous Motor
- (C) Synchronous Reluctance Motor
- (D) Servo Motor

Answer: - Option D

74. The motor which is mostly preferred for Robotics is

- (A) Switched Reluctance Motor
- (B) Permanent Magnet Synchronous Motor
- (C) Synchronous Reluctance Motor
- (D) Servo Motor

Answer: - Option D

75. The motor which is mostly preferred for food tracking and guidance systems is

- (A) Switched Reluctance Motor
- (B) Permanent Magnet Synchronous Motor
- (C) Synchronous Reluctance Motor
- (D) Servo Motor

Answer: - Option D

76. The motor which is mostly preferred for self-balancing recorders is

- (A) Switched Reluctance Motor
- (B) Permanent Magnet Synchronous Motor
- (C) Synchronous Reluctance Motor
- (D) Servo Motor

Answer: - Option D

77. The motor which is mostly preferred for machine tools is

- (A) Switched Reluctance Motor
- (B) Permanent Magnet Synchronous Motor
- (C) Synchronous Reluctance Motor
- (D) Servo Motor

Answer: - Option D

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05 – Protective device & Switchgear

Marks:-12

Content of Chapter:-

- 5.1 Types of earthing systems.
- 5.2 Installation of earthing systems.
- 5.3 Testing/measurement of earthing resistance for various installations as per IE rules.
- 5.4 Significance and adverse effects of improper earthing systems.
- 5.5 MCB, ELCB

1. The ground wire is coloured

- A. Green
- B. Black
- C. Yellow
- D. Red

Answer: - Option A

2. The maximum permissible value of earth resistance for major substation is

- A. 0.5 Ohms
- B. 1 Ohms
- C. 2 Ohms
- D. 5 Ohms

Answer: - Option B

3. Earthing is necessary to give protection against

- A. Danger of electric shock
- B. Voltage fluctuation
- C. Overloading
- D. High temperature of the conductors

Answer: - Option A

4. The maximum permissible value of earth resistance for power station is

- A. 0.5 Ohms
- B. 1 Ohms
- C. 2 Ohms
- D. 5 Ohms

Answer: - Option

5. Solid grounding is adopted for voltages below

- A. 100 V
- B. 200 V
- C. 400 V
- D. 660 V

Answer: - Option D

6. The maximum permissible value of earth resistance for minor substation is

- A. 0.5 Ohms
- B. 1 Ohms
- C. 2 Ohms
- D. 5 Ohms

Answer: - Option C

7. The advantage of neutral earthing is

- A. Freedom from persistent arcing grounds
- B. Over voltages due to lightning can be discharged to earth
- C. Simplified design earth fault protection
- D. All of the above

Answer: - Option D

8. The maximum permissible value of earth resistance for residential wiring is

- A. 0.5 Ohms
- B. 1 Ohms
- C. 5 Ohms
- D. 2 Ohms

Answer: - Option C

9. The advantage of neutral earthing

- A. Safety of personnel
- B. Reduction of earth fault current
- C. Elimination of arcing ground
- D. None of the above

Answer: - Option C

10. The maximum permissible value of earth resistance for H.T Line is

- A. 0.5 Ohms
- B. 1 Ohms
- C. 5 Ohms
- D. 10 Ohms

Answer: - Option D

11. The maximum permissible value of earth resistance for L.T Line is

- A. 0.5 Ohms
- B. 1 Ohms
- C. 5 Ohms
- D. 2 Ohms

Answer: - Option C

12. The maximum permissible value of earth resistance for Tower footing resistance is

- A. 10 Ohms
- B. 1 Ohms
- C. 5 Ohms
- D. 2 Ohms

Answer: - Option A

13. The maximum permissible value of earth resistance for DTR structures is

- A. 10 Ohms
- B. 1 Ohms
- C. 5 Ohms
- D. 2 Ohms

Answer: - Option C

14. If soil resistivity increases then earth resistance

- A. Increases
- B. Decreases
- C. Remains same
- D. Either A or B

Answer: - Option A

15. If moisture content in soil increases then earth resistance

- A. Increases
- B. Decreases
- C. Remains same
- D. Either A or B

Answer: - Option B

16. If earth electrode is buried deep inside the soil then earth resistance

- A. Increases
- B. Decreases
- C. Remains same
- D. Either A or B

Answer: - Option B

17. If earth electrode is buried deep inside the soil then earth resistance

- A. Increases
- B. Decreases
- C. Remains same
- D. Either A or B

Answer: - Option B

18. If earth electrode is buried deep inside the soil then earth resistance

- A. Increases
- B. Decreases
- C. Remains same
- D. Either A or B

Answer: - Option B

19. If powder of charcoal and salt is added inside the soil then earth resistance

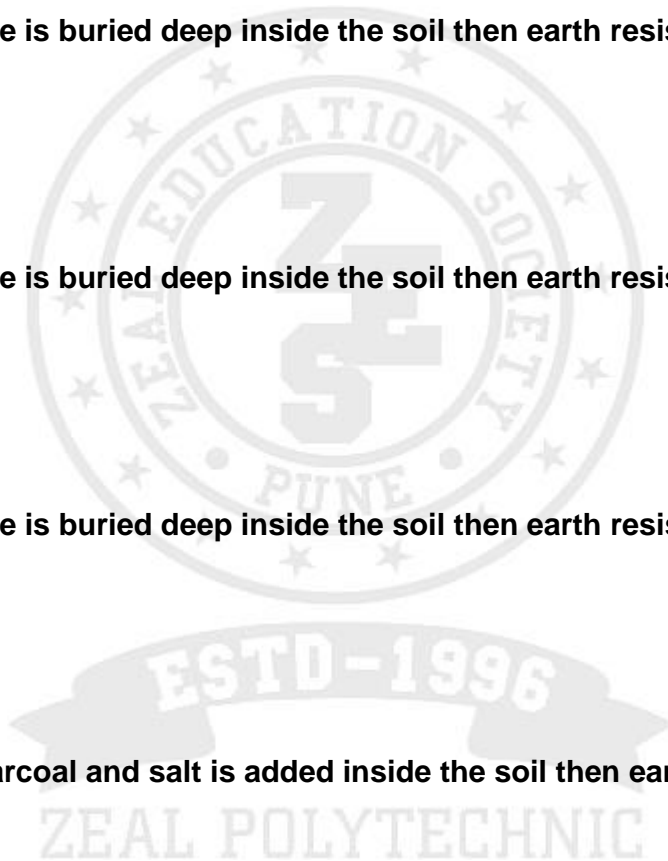
- A. Increases
- B. Decreases
- C. Remains same
- D. Either A or B

Answer: - Option B

20. If electrode size is increased then earth resistance

- A. Increases
- B. Decreases
- C. Remains same
- D. Either A or B

Answer: - Option B



21. Earth resistance should be

- A. Low
- B. High
- C. Very High
- D. Either B or C

Answer: - Option A

22. Factors on which earth resistance depends are

- A. Depth of electrode
- B. Moisture
- C. Salt
- D. All of the above

Answer: - Option D

23. Earth wire or ground wire is made of

- (A) Copper
- (B) Aluminium
- (C) Galvanised Steel
- (D) Iron

Answer: - Option C

24. The size of earth wire or ground wire depends on

- (A) Rated current carrying capacity of the service line
- (B) Depends on the soil resistance
- (C) Maximum fault current carrying through the ground wire
- (D) Both (B) and (C)

Answer: - Option D

25. Earth electrode used in plate earthing

- A. Plate
- B. Pipe
- C. Rod
- D. Grid

Answer: - Option A

26. The material used in plate earthing

- A. Salt
- B. Charcoal
- C. GI wire
- D. All of the above

Answer: - Option D

27. The size of plate electrode in inches in plate earthing is

- A. 0.25 inches
- B. 0.5 inches
- C. 0.75 inches
- D. 0.9 inches

Answer: - Option A

28. The size of SWG for pipe earthing is

- A. 12 SWG
- B. 16 SWG
- C. 8 SWG
- D. 20 SWG

Answer: - Option C

29. Which of the following is the cheapest method of earthing

- A. Pipe Earthing
- B. Plate Earthing
- C. Split Earthing
- D. Rod Earthing

Answer: - Option C

30. The earth potential is taken as

- A. Zero
- B. Infinite
- C. 1 Volt
- D. 10 Volt

Answer: - Option C

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