

SSC JE

**Previous Year Paper
(Electrical) Paper-II**

06 Nov, 2024

Junior Engineer Civil Mechanical and Electrical Examination 2024 Paper II 6th Nov 2024

Roll Number	
Candidate Name	
Venue Name	
Exam Date	06/11/2024
Exam Time	9:00 AM - 11:00 AM
Subject	Junior Engineer 2024 Paper II Electrical

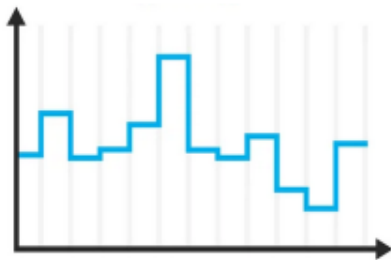
Section : General Engineering Electrical

Q.1 Which of the following pairs correctly defines the term in definition?

- Ans ☒ 1. Resultant Vector: The angular separation between two sinusoidal waveforms with the same frequency.
- ☒ 2. Phasor Subtraction: The process of finding the vector difference between two phasors in a phasor diagram.
- ☒ 3. Vector Subtraction: A single vector that represents the sum or difference of two or more vectors.
- ☒ 4. Phase Difference: The representation of the complex amplitude and phase angle of a sinusoidal waveform or time-varying quantity.

Question ID : 6306801209421
Option 1 ID : 6306804756191
Option 2 ID : 6306804756190
Option 3 ID : 6306804756192
Option 4 ID : 6306804756193
Status : Answered
Chosen Option : 2

Q.2 What type of electrical signal is shown in the given figure?



- Ans ☒ 1. Digital Signal
- ☒ 2. Sinusoidal Signal
- ☒ 3. Analog Signal
- ☒ 4. Pulse Signal

Question ID : 6306801209451
Option 1 ID : 6306804756313
Option 2 ID : 6306804756310
Option 3 ID : 6306804756312
Option 4 ID : 6306804756311
Status : Answered
Chosen Option : 1

Q.3 A 12-pole alternator running at a speed of 600 rpm will produce a frequency of _____.

- Ans
- ☒ 1. 40 Hz
 - ☒ 2. 30 Hz
 - ☒ 3. 60 Hz
 - ☒ 4. 50 Hz

Question ID : 6306801174993

Option 1 ID : 6306804619208

Option 2 ID : 6306804619207

Option 3 ID : 6306804619210

Option 4 ID : 6306804619209

Status : Answered

Chosen Option : 3

Q.4 The no-load primary input current lags the primary voltage by an angle _____.

- Ans
- ☒ 1. $\phi < 90^\circ$
 - ☒ 2. $\phi = 90^\circ$
 - ☒ 3. $\phi = 175^\circ$
 - ☒ 4. $\phi = 135^\circ$

Question ID : 6306801174981

Option 1 ID : 6306804619159

Option 2 ID : 6306804619160

Option 3 ID : 6306804619162

Option 4 ID : 6306804619161

Status : Answered

Chosen Option : 1

Q.5 Which of the given options best describes the truthfulness of the following statements with reference to the properties of the magnetic circuits?

P: Permeance is the opposition offered to the magnetic flux by the magnetic path.

Q: Magnetic lines of force cannot pass through air.

- Ans
- ☒ 1. Both P and Q are true
 - ☒ 2. P is true, but Q is false
 - ☒ 3. P is false, but Q is true
 - ☒ 4. Both P and Q are false

Question ID : 6306801175058

Option 1 ID : 6306804619470

Option 2 ID : 6306804619467

Option 3 ID : 6306804619468

Option 4 ID : 6306804619469

Status : Answered

Chosen Option : 4

Q.6 For a series RLC circuit, at resonance the _____.

- Ans
- ✓ 1. current is maximum
 - ✗ 2. impedance is maximum
 - ✗ 3. power factor is zero
 - ✗ 4. current is minimum

Question ID : 6306801174961

Option 1 ID : 6306804619079

Option 2 ID : 6306804619080

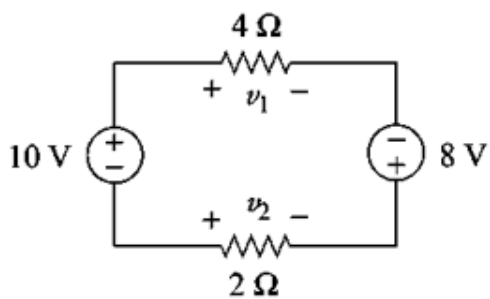
Option 3 ID : 6306804619082

Option 4 ID : 6306804619081

Status : Answered

Chosen Option : 1

Q.7 Find the voltage ' v_1 ' in the following circuit.



- Ans
- ✗ 1. 6 V
 - ✗ 2. -12 V
 - ✓ 3. 12 V
 - ✗ 4. -6 V

Question ID : 6306801174944

Option 1 ID : 6306804619011

Option 2 ID : 6306804619014

Option 3 ID : 6306804619012

Option 4 ID : 6306804619013

Status : Answered

Chosen Option : 3

Q.8 In an indirect arc furnace, the heat is transmitted from the arc to the top layer of the charge by _____ and it operates at a power factor of _____.

- Ans** ☒ 1. radiation; 0.85 lagging
- ☐ 2. conduction; 0.8 leading
- ☐ 3. radiation; 0.7 leading
- ☐ 4. convection; 0.85 lagging

Question ID : 6306801175029
Option 1 ID : 6306804619352
Option 2 ID : 6306804619351
Option 3 ID : 6306804619354
Option 4 ID : 6306804619353
Status : Answered
Chosen Option : 1

Q.9 Select the option that is true regarding the following two statements labelled Assertion (A) and Reason (R).

(A): Open tenders are invited by public advertisement.

(R): Any contractor who is willing to undertake the work and who has the requisite finance and equipment to complete the work satisfactorily is allowed to submit the offer.

- Ans** ☒ 1.
Statements A and R are true and R is the correct explanation of A.
- ☐ 2.
Statements A and R are true, but R is not the correct explanation of A.
- ☐ 3. Statements A and R both are false.
- ☐ 4. Statement A is true and statement B is false.

Question ID : 6306801175020
Option 1 ID : 6306804619317
Option 2 ID : 6306804619318
Option 3 ID : 6306804619316
Option 4 ID : 6306804619315
Status : Answered
Chosen Option : 1

Q.10 A single-stack, eight-phase, multipole stepper motor has six rotor teeth. The phases are excited one at a time. Determine the number of steps per revolution.

- Ans** ☐ 1. 40
- ☐ 2. 48
- ☒ 3. 24
- ☐ 4. 32

Question ID : 6306801175091
Option 1 ID : 6306804619601
Option 2 ID : 6306804619602
Option 3 ID : 6306804619599
Option 4 ID : 6306804619600
Status : Answered
Chosen Option : 2

Q.11 Choose the correct pair of bridge with its application:

- Ans
- ☐ 1. Kelvin double bridge: high resistance
 - ☐ 2. Loss of charge method: High Q-coil
 - ☐ 3. Wheatstone bridge: Very low resistance
 - ☒ 4. Corey Foster's bridge: Medium resistance

Question ID : 6306801209456
Option 1 ID : 6306804756332
Option 2 ID : 6306804756333
Option 3 ID : 6306804756330
Option 4 ID : 6306804756331
Status : Answered
Chosen Option : 4

Q.12 If an electrical device consumes 50 watts of power for 10 minutes, what is the total electrical energy consumed by the device?

- Ans
- ☐ 1. 10,000 J
 - ☐ 2. 2500 J
 - ☐ 3. 3,60,000 J
 - ☒ 4. 30,000 J

Question ID : 6306801175069
Option 1 ID : 6306804619512
Option 2 ID : 6306804619511
Option 3 ID : 6306804619514
Option 4 ID : 6306804619513
Status : Answered
Chosen Option : 4

Q.13 Match the different types of lamps with their relative luminous efficiencies.

- | | |
|------------------------------|---------------|
| (i) Sodium vapour lamp | (a) medium |
| (ii) Fluorescent lamp | (b) very high |
| (iii) Tungsten filament lamp | (c) low |
| (iv) Carbon filament lamp | (d) high |

- Ans  1. (i)-(d), (ii)-(c), (iii)-(b), (iv)-(a)
-  2. (i)-(b), (ii)-(a), (iii)-(d), (iv)-(c)
-  3. (i)-(b), (ii)-(d), (iii)-(a), (iv)-(c)
-  4. (i)-(b), (ii)-(c), (iii)-(d), (iv)-(a)

Question ID : 6306801175125
Option 1 ID : 6306804619736
Option 2 ID : 6306804619738
Option 3 ID : 6306804619737
Option 4 ID : 6306804619735
Status : Answered
Chosen Option : 3

Q.14 The _____ turbine is a reaction turbine in which the runner receives water axially.

- Ans  1. Francis
-  2. Kaplan
-  3. Propeller
-  4. Pelton

Question ID : 6306801175004
Option 1 ID : 6306804619253
Option 2 ID : 6306804619252
Option 3 ID : 6306804619254
Option 4 ID : 6306804619251
Status : Answered
Chosen Option : 2

Q.15 Which of the following is NOT a valid advantage of capacitor-start capacitor-run motor?

- Ans
- ☐ 1. High efficiency
 - ☐ 2. High power factor
 - ☐ 3. High starting torque
 - ☒ 4. Low cost

Question ID : 6306801174986
Option 1 ID : 6306804619181
Option 2 ID : 6306804619180
Option 3 ID : 6306804619179
Option 4 ID : 6306804619182
Status : Answered
Chosen Option : 4

Q.16 When applying Thevenin's Theorem to a circuit, if the Thevenin voltage is 40 V and the Thevenin equivalent resistance is 5 Ω, what is the current through a load resistor of 15 Ω connected across the terminals?

- Ans
- ☐ 1. 0.5A
 - ☒ 2. 2A
 - ☐ 3. 1A
 - ☐ 4. 2.5A

Question ID : 6306801209455
Option 1 ID : 6306804756326
Option 2 ID : 6306804756328
Option 3 ID : 6306804756327
Option 4 ID : 6306804756329
Status : Answered
Chosen Option : 2

Q.17 A 15-V source is applied to a capacitive circuit that has an impedance of $(6 - j8) \Omega$. Find the angle by which the current leads the voltage.

- Ans
- ☐ 1. $\tan^{-1} \frac{1.2}{0.9}$
 - ☐ 2. $\tan^{-1} \frac{1.2}{9}$
 - ☐ 3. $\tan^{-1} \frac{0.9}{1.2}$
 - ☒ 4. $\tan^{-1} \frac{12}{9}$

Question ID : 6306801175067
Option 1 ID : 6306804619506
Option 2 ID : 6306804619505
Option 3 ID : 6306804619503
Option 4 ID : 6306804619504
Status : Answered
Chosen Option : 1

Q.18 Which of the following pair of typical diodes and their corresponding threshold voltages is INCORRECT?

- Ans
- ☒ 1. Silicon diode : 0.7 V
 - ☒ 2. Schottky diode : 0.2 V
 - ☒ 3. Light emitting diode : 0.1 V
 - ☒ 4. Germanium diode : 0.3 V

Question ID : 6306801175131
Option 1 ID : 6306804619759
Option 2 ID : 6306804619761
Option 3 ID : 6306804619760
Option 4 ID : 6306804619762
Status : Answered
Chosen Option : 3

Q.19 Which of the following is called the mechanical characteristic of a DC motor?

- Ans
- ☒ 1. Armature voltage vs. Armature current characteristic
 - ☒ 2. Torque vs. Armature current characteristic
 - ☒ 3. Speed vs. Torque characteristic
 - ☒ 4. Speed vs. Armature current characteristic

Question ID : 6306801174977
Option 1 ID : 6306804619146
Option 2 ID : 6306804619144
Option 3 ID : 6306804619143
Option 4 ID : 6306804619145
Status : Answered
Chosen Option : 3

Q.20 Select the option that is true regarding the following two statements labelled Assertion (A) and Reason (R).

(A): In a synchronous generator phasor diagram, the armature current (I_a) is in phase with the excitation voltage (E_f), and the excitation voltage leads to the terminal voltage (V_t).

(R): When a synchronous generator operates in generating mode, the armature current is in phase with the excitation voltage, and the excitation voltage leads to the terminal voltage.

- Ans
- ☒ 1. Both A and R are true, but R is not the correct explanation of A.
 - ☒ 2. Both A and R are true and R is the correct explanation of A.
 - ☒ 3. A is true, but R is false.
 - ☒ 4. A is false, but R is true.

Question ID : 6306801175099
Option 1 ID : 6306804619632
Option 2 ID : 6306804619631
Option 3 ID : 6306804619633
Option 4 ID : 6306804619634
Status : Answered
Chosen Option : 2

Q.21 In a resistance start motor, the pull-out torque is about 2.5 times the full load torque at about _____ of synchronous speed.

- Ans**  1. 100%
  2. 75%
  3. 50%
  4. 25%

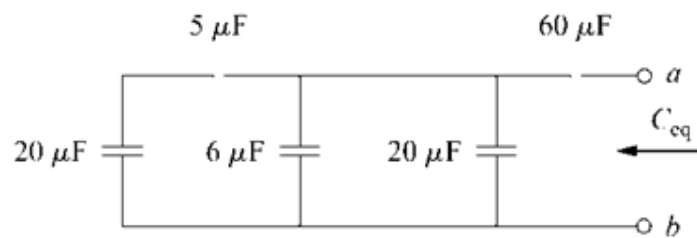
Question ID : 6306801174990
Option 1 ID : 6306804619195
Option 2 ID : 6306804619196
Option 3 ID : 6306804619197
Option 4 ID : 6306804619198
Status : Answered
Chosen Option : 2

Q.22 In a network with multiple resistors, if the delta-star transformation is applied, what is the equivalent delta resistance for a star-connected set of resistors $R_1=6\ \Omega$, $R_2=10\ \Omega$, and $R_3=15\ \Omega$?

- Ans**  1. $R_{12} = 50\ \Omega$, $R_{13} = 30\ \Omega$, $R_{23} = 40\ \Omega$
  2. $R_{12} = 30\ \Omega$, $R_{13} = 20\ \Omega$, $R_{23} = 40\ \Omega$
  3. $R_{12} = 20\ \Omega$, $R_{13} = 30\ \Omega$, $R_{23} = 50\ \Omega$
  4. $R_{12} = 40\ \Omega$, $R_{13} = 20\ \Omega$, $R_{23} = 50\ \Omega$

Question ID : 6306801209420
Option 1 ID : 6306804756188
Option 2 ID : 6306804756187
Option 3 ID : 6306804756186
Option 4 ID : 6306804756189
Status : Answered
Chosen Option : 3

Q.23 Find the equivalent capacitance ' C_{eq} ' in the following circuit.



Ans ☒ 1. $20\ \mu\text{F}$

☒ 2. $35\ \mu\text{F}$

☒ 3. $30\ \mu\text{F}$

☒ 4. $25\ \mu\text{F}$

Question ID : 6306801174942

Option 1 ID : 6306804619003

Option 2 ID : 6306804619006

Option 3 ID : 6306804619005

Option 4 ID : 6306804619004

Status : Answered

Chosen Option : 1

Q.24 Calculate the power dissipated in the Zener diode in following circuit.

Ans ☒ 1. $0.66\ \text{W}$

☒ 2. $0.88\ \text{W}$

☒ 3. $0.22\ \text{W}$

☒ 4. $0.44\ \text{W}$

Question ID : 6306801175135

Option 1 ID : 6306804619777

Option 2 ID : 6306804619778

Option 3 ID : 6306804619775

Option 4 ID : 6306804619776

Status : Not Answered

Chosen Option : --

Q.25 In an AC current carrying conductor, the skin effect _____ with the increase in diameter of the conductor and _____ with the increase in frequency.

- Ans** ☒ 1. increases, increases
☐ 2. decreases, decreases
☐ 3. decreases, increases
☐ 4. increases, decreases

Question ID : 6306801175115
Option 1 ID : 6306804619695
Option 2 ID : 6306804619697
Option 3 ID : 6306804619696
Option 4 ID : 6306804619698
Status : Answered
Chosen Option : 1

Q.26 Which of the following is the correct sequence of layers from the outermost to the innermost in underground cables?

- Ans** ☒ 1.
Serving → Armouring → Bedding → Metallic sheath → Conductor
☐ 2.
Bedding → Metallic sheath → Conductor → Serving → Armouring
☐ 3.
Conductor → Metallic sheath → Bedding → Armouring → Serving
☐ 4.
Metallic sheath → Bedding → Armouring → Serving → Conductor

Question ID : 6306801175012
Option 1 ID : 6306804619283
Option 2 ID : 6306804619284
Option 3 ID : 6306804619285
Option 4 ID : 6306804619286
Status : Answered
Chosen Option : 1

Q.27 Which of the following is a correct pair of LC oscillators?

- Ans** ☐ 1. Crystal oscillator and Phase-shift oscillator
☐ 2. Wien bridge oscillator and Phase-shift oscillator
☒ 3. Colpitts oscillator and Hartley oscillator
☐ 4. Wien bridge oscillator and Colpitts oscillator

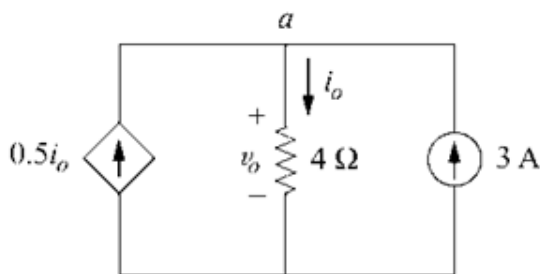
Question ID : 6306801175074
Option 1 ID : 6306804619534
Option 2 ID : 6306804619533
Option 3 ID : 6306804619531
Option 4 ID : 6306804619532
Status : Answered
Chosen Option : 3

Q.28 Assertion (A): Fixed charges in power generation remain constant regardless of the plant's capacity or operation.
Reason (R): Semi-fixed charges are dependent on the installed capacity of the plant and include costs like interest, depreciation, taxes, and insurance premiums.

- Ans ☒ 1. Both Assertion and Reason are true, but Reason is not the correct explanation of the Assertion
☐ 2. Both Assertion and Reason are true, and Reason is the correct explanation of the Assertion.
☐ 3. Assertion is false, but Reason is true.
☐ 4. Assertion is true, but Reason is false.

Question ID : 6306801209434
Option 1 ID : 6306804756243
Option 2 ID : 6306804756242
Option 3 ID : 6306804756245
Option 4 ID : 6306804756244
Status : Answered
Chosen Option : 1

Q.29 Find the voltage 'v_o' in the following circuit.



- Ans ☐ 1. 16 V
☐ 2. 20 V
☐ 3. 12 V
☒ 4. 24 V

Question ID : 6306801175046
Option 1 ID : 6306804619420
Option 2 ID : 6306804619421
Option 3 ID : 6306804619419
Option 4 ID : 6306804619422
Status : Answered
Chosen Option : 4

Q.30 Which of the following statements is correct regarding the classification of transmission and distribution lines?

- Ans ☒ 1. Transmission lines carry electricity over long distances at high voltages, while distribution lines deliver electricity to end-users at lower voltages
- ☐ 2. Both transmission and distribution lines operate at identical voltages, differing only in the type of conductor material used.
- ☐ 3. Transmission lines are designed for short-distance electricity transfer, while distribution lines are specialized for long-distance power transmission.
- ☐ 4. Transmission lines and distribution lines serve the same purpose and are interchangeable in the electrical grid.

Question ID : 6306801209465
Option 1 ID : 6306804756366
Option 2 ID : 6306804756369
Option 3 ID : 6306804756367
Option 4 ID : 6306804756368
Status : Answered
Chosen Option : 1

Q.31 Match the Following:
Terms: Definitions:
1. Phase A. The divisional part of a cycle through which the quantity moves forward from a selected origin.
2. Phase Difference B. The angular phase difference between the maximum possible value of two alternating quantities having the same frequency.
3. Cycle C. When the alternating quantity goes through a complete set of positive or negative values or goes through 360° electrical degrees.

- Ans ☐ 1. 1-B, 2-A, 3-C
- ☒ 2. 1-A, 2-B, 3-C
- ☐ 3. 1-C, 2-B, 3-A
- ☐ 4. 1-A, 2-C, 3-B

Question ID : 6306801209454
Option 1 ID : 6306804756323
Option 2 ID : 6306804756322
Option 3 ID : 6306804756325
Option 4 ID : 6306804756324
Status : Answered
Chosen Option : 3

Q.32 A generating station has installed capacity of 50,000 kW and delivers (250×10^6) units per annum. If the annual fixed charges are ₹160 per kW installed capacity and running charges are 4 paise per kWh, determine the cost per unit generated.

- Ans ☒ 1. 7.2 paise
- ☐ 2. 7.6 paise
- ☐ 3. 7.0 paise
- ☐ 4. 7.4 paise

Question ID : 6306801175006
Option 1 ID : 6306804619260
Option 2 ID : 6306804619262
Option 3 ID : 6306804619259
Option 4 ID : 6306804619261
Status : Not Answered
Chosen Option : --

Q.33 A synchronous motor is said to be over-excited when:

- Ans
- ☐ 1. back EMF is zero
 - ☐ 2. back EMF is equal to the applied voltage
 - ☒ 3. back EMF is greater than the applied voltage
 - ☐ 4. back EMF is less than the applied voltage

Question ID : 6306801175095
Option 1 ID : 6306804619616
Option 2 ID : 6306804619615
Option 3 ID : 6306804619618
Option 4 ID : 6306804619617
Status : Answered
Chosen Option : 3

Q.34 Match the Following:

Terms:

- 1. Norton's Theorem
- 2. Thevenin's Theorem
- 3. Delta-Star Transformation
- 4. Maximum Power Transfer Theorem

Definitions:

- a) Simplifies a network to an equivalent circuit consisting of a current source and a parallel resistance.
- b) Simplifies a network to an equivalent circuit consisting of a voltage source and a series resistance.
- c) Converts a delta-connected set of resistors to an equivalent star-connected configuration.
- d) Determines the condition for maximum power transfer to a load resistor in a circuit.

- Ans
- ☐ 1. 1-d, 2-c, 3-b, 4-a
 - ☐ 2. 1-b, 2-a, 3-d, 4-c
 - ☐ 3. 1-c, 2-d, 3-a, 4-b
 - ☒ 4. 1-a, 2-b, 3-c, 4-d

Question ID : 6306801209415
Option 1 ID : 6306804756168
Option 2 ID : 6306804756167
Option 3 ID : 6306804756169
Option 4 ID : 6306804756166
Status : Answered
Chosen Option : 4

Q.35 If the maximum demand on the plant is equal to the plant capacity, then the reserve capacity of the plant will be _____.

- Ans ☒ 1. zero
- ☐ 2. same as the maximum demand
- ☐ 3. half of the maximum demand
- ☐ 4. twice the maximum demand

Question ID : 6306801209463

Option 1 ID : 6306804756361

Option 2 ID : 6306804756359

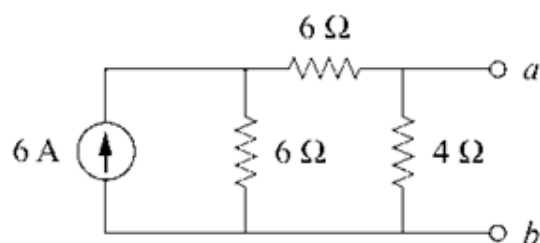
Option 3 ID : 6306804756358

Option 4 ID : 6306804756360

Status : Answered

Chosen Option : 1

Q.36 Find the Norton's equivalent of the following circuit.



- Ans ☐ 1. $I_N = 3 \text{ A}$, $R_N = 12 \Omega$
- ☐ 2. $I_N = 6 \text{ A}$, $R_N = 12 \Omega$
- ☐ 3. $I_N = 6 \text{ A}$, $R_N = 3 \Omega$
- ☒ 4. $I_N = 3 \text{ A}$, $R_N = 3 \Omega$

Question ID : 6306801174951

Option 1 ID : 6306804619042

Option 2 ID : 6306804619039

Option 3 ID : 6306804619040

Option 4 ID : 6306804619041

Status : Answered

Chosen Option : 3

Q.37 How do electrical connections differ in wiring diagrams compared to schematic diagrams?

Ans ☒ 1.

Wiring diagrams emphasise the flow of the system and power output, while schematic diagrams show the connections between devices.

☒ 2.

Wiring diagrams use lines to represent the wiring, while schematic diagrams use simplified shapes for connections.

☒ 3.

Wiring diagrams use abstract symbols for connections, while schematic diagrams represent the physical wiring.

☒ 4.

Wiring diagrams represent the logical working of a circuit, while schematic diagrams focus on the actual wiring connections.

Question ID : 6306801175017

Option 1 ID : 6306804619305

Option 2 ID : 6306804619306

Option 3 ID : 6306804619303

Option 4 ID : 6306804619304

Status : Answered

Chosen Option : 1

Q.38 The frequency of the sinusoidal voltage expressed as $v(t) = 50 \sin 80\pi t$ is _____.

Ans ☒ 1. 60 Hz

☒ 2. 80 Hz

☒ 3. 20 Hz

☒ 4. 40 Hz

Question ID : 6306801174939

Option 1 ID : 6306804618993

Option 2 ID : 6306804618994

Option 3 ID : 6306804618991

Option 4 ID : 6306804618992

Status : Answered

Chosen Option : 4

Q.39 In a series RL circuit, the phase difference between the voltage and current will ____.

Ans ☒ 1. always be 90°

☒ 2. be between 0° and 90°

☒ 3. always be 0°

☒ 4. be between 90° and 180°

Question ID : 6306801174960

Option 1 ID : 6306804619076

Option 2 ID : 6306804619077

Option 3 ID : 6306804619075

Option 4 ID : 6306804619078

Status : Answered

Chosen Option : 2

Q.40 In a Cathode Ray Tube (CRT) used for frequency comparison, how are the electrons deflected to compare frequencies?

- Ans
- ☒ 1. Both on the horizontal and vertical axes.
 - ☒ 2. Along the vertical axis, but not on the horizontal axis.
 - ☒ 3. Along the horizontal axis, but not on the vertical axis.
 - ☒ 4. Alternating between the horizontal and the vertical axes.

Question ID : 6306801175070
Option 1 ID : 6306804619517
Option 2 ID : 6306804619516
Option 3 ID : 6306804619515
Option 4 ID : 6306804619518
Status : Answered
Chosen Option : 4

Q.41 In ring main distribution system, each distribution transformer is fed with _____ feeder / feeders.

- Ans
- ☒ 1. four
 - ☒ 2. two
 - ☒ 3. only one
 - ☒ 4. three

Question ID : 6306801175111
Option 1 ID : 6306804619682
Option 2 ID : 6306804619680
Option 3 ID : 6306804619679
Option 4 ID : 6306804619681
Status : Answered
Chosen Option : 3

Q.42 Which statement is incorrect for Tender?

- Ans
- ☒ 1. Price and quality are the components in Tender.
 - ☒ 2. Find out the best price.
 - ☒ 3. Large scope.
 - ☒ 4. Doesn't Response for request for tender.

Question ID : 6306801209437
Option 1 ID : 6306804756255
Option 2 ID : 6306804756254
Option 3 ID : 6306804756256
Option 4 ID : 6306804756257
Status : Answered
Chosen Option : 4

Q.43 Which statement accurately describes the working principle of single-phase motors?

- Ans ☒ 1. The magnetic field produced by a single-phase motor "pulsates" between 2 motor poles, requiring an initial force for rotor movement.
- ☐ 2. The stationary rotor in a single-phase motor experiences a continuous and smooth rotating magnetic field.
- ☐ 3. Single-phase motors do not require any auxiliary influence for initial movement of the rotor
- ☐ 4. Single-phase motors produce a true rotating magnetic field with 120 degrees of phase separation.

Question ID : 6306801209430
Option 1 ID : 6306804756227
Option 2 ID : 6306804756229
Option 3 ID : 6306804756228
Option 4 ID : 6306804756226
Status : Answered
Chosen Option : 1

Q.44 Determine the energy stored by a 2 H inductor, when the current flowing through it is 4 A.

- Ans ☒ 1. 16 J
- ☐ 2. 8 J
- ☐ 3. 32 J
- ☐ 4. 4 J

Question ID : 6306801175038
Option 1 ID : 6306804619389
Option 2 ID : 6306804619388
Option 3 ID : 6306804619390
Option 4 ID : 6306804619387
Status : Answered
Chosen Option : 1

Q.45 Choose the correct pair of transformer type with correct application?

- Ans ☐ 1. Distribution Transformer: Component protection.
- ☒ 2. Instrument Transformer: Measuring voltage, current
- ☐ 3. Power transformer: Lanes for domestic purposes
- ☐ 4. Protection Transformer: Generation stations

Question ID : 6306801209459
Option 1 ID : 6306804756343
Option 2 ID : 6306804756344
Option 3 ID : 6306804756342
Option 4 ID : 6306804756345
Status : Answered
Chosen Option : 2

Q.46 The magnetic force per unit length between two parallel current carrying conductors is _____.

Ans  1.

inversely proportional to the distance between the conductors

 2.

directly proportional to the distance between the conductors

 3.

inversely proportional to the current flowing through the conductors

 4.

directly proportional to the square of the distance between the conductors

Question ID : 6306801174953

Option 1 ID : 6306804619048

Option 2 ID : 6306804619047

Option 3 ID : 6306804619049

Option 4 ID : 6306804619050

Status : Answered

Chosen Option : 1

Q.47 Select the correct pair of type of industrial heating and the way in which the heating is obtained.

Ans  1. Resistance heating : Heating through dielectric losses

 2.

Dielectric heating : Heating through electromagnetic radiation

 3. Induction heating : Heating through eddy currents

 4.

Infrared heating : Heating through heavy current in a highly resistive element

Question ID : 6306801175126

Option 1 ID : 6306804619742

Option 2 ID : 6306804619739

Option 3 ID : 6306804619740

Option 4 ID : 6306804619741

Status : Answered

Chosen Option : 4

Q.48 With reference to the shaded pole induction motor, state true/false for the following statements.

P: The shaded pole motor rotates in only one direction.

Q: In the shaded pole motor, the copper ring acts as a secondary winding for the motor.

- Ans
- ☒ 1. Statement P is true and statement Q is false.
 - ☒ 2. Statements P and Q both are false.
 - ☒ 3. Statement P is false and statement Q is true.
 - ☒ 4. Statements P and Q both are true.

Question ID : 6306801174992
Option 1 ID : 6306804619205
Option 2 ID : 6306804619204
Option 3 ID : 6306804619206
Option 4 ID : 6306804619203
Status : Answered
Chosen Option : 4

Q.49 In the questions given below, there are two statements marked as Assertion (A) and Reason (R). Mark your answer as per the codes provided below:

Assertion (A):

Stepper motors are suitable for positioning applications where holding a position is essential, and they are generally less expensive.

Reason (R):

Servomotors are true feedback positioners with encoders, providing precise control over motion and speed.

- Ans
- ☒ 1. Both Assertion and Reason are true, and Reason is the correct explanation of the Assertion.
 - ☒ 2. Assertion is false, but Reason is true.
 - ☒ 3. Both Assertion and Reason are true, but Reason is not the correct explanation of the Assertion.
 - ☒ 4. Assertion is true, but Reason is false.

Question ID : 6306801209431
Option 1 ID : 6306804756230
Option 2 ID : 6306804756233
Option 3 ID : 6306804756231
Option 4 ID : 6306804756232
Status : Answered
Chosen Option : 3

Q.50 In a parallel RL circuit, the inductive susceptance is given by _____.

- Ans
- ☒ 1. $B = 2\omega L$
 - ☒ 2. $B = \omega L$
 - ☒ 3. $B = \frac{1}{\omega L}$
 - ☒ 4. $B = \frac{L}{\omega}$

Question ID : 6306801175064

Option 1 ID : 6306804619492

Option 2 ID : 6306804619491

Option 3 ID : 6306804619493

Option 4 ID : 6306804619494

Status : Answered

Chosen Option : 3

Q.51 The coils of a DC motor starter are wound with wire of Manganin because of the _____ temperature coefficient of resistance and _____ thermoelectric EMF, respectively.

- Ans
- ☒ 1. low, low
 - ☒ 2. high, high
 - ☒ 3. low, high
 - ☒ 4. high, low

Question ID : 6306801175080

Option 1 ID : 6306804619555

Option 2 ID : 6306804619558

Option 3 ID : 6306804619556

Option 4 ID : 6306804619557

Status : Answered

Chosen Option : 1

Q.52 Which of the following motors divides the full rotation into equal number of steps?

- Ans
- ☒ 1. Universal motor
 - ☒ 2. Hysteresis motor
 - ☒ 3. Synchronous motor
 - ☒ 4. Stepper motor

Question ID : 6306801175085

Option 1 ID : 6306804619575

Option 2 ID : 6306804619577

Option 3 ID : 6306804619578

Option 4 ID : 6306804619576

Status : Answered

Chosen Option : 4

Q.53 An overhead transmission line is supported by supports at equal levels. Assuming the weight per unit length and tension in the conductor constant, if the length of the conductor span is _____, then the sag will decrease by 25%.

- Ans
- ☒ 1. increased by 25%
 - ☒ 2. increased by 50%
 - ☒ 3. reduced by 25%
 - ☒ 4. reduced by 50%

Question ID : 6306801175113
Option 1 ID : 6306804619688
Option 2 ID : 6306804619690
Option 3 ID : 6306804619687
Option 4 ID : 6306804619689
Status : Answered
Chosen Option : 3

Q.54 Which of the following application of CRO is incorrect?

- Ans
- ☒ 1. Generate the different type of electrical signals
 - ☒ 2. Measure the voltage, current, frequency, inductance, admittance, resistance and power factor.
 - ☒ 3. Monitor the signal properties as well as characteristics
 - ☒ 4. Control the analog signals

Question ID : 6306801209422
Option 1 ID : 6306804756196
Option 2 ID : 6306804756194
Option 3 ID : 6306804756195
Option 4 ID : 6306804756197
Status : Answered
Chosen Option : 2

Q.55 Which of the following is the most important factor governing the selection of an electric motor in electives among the following options?

- Ans
- ☒ 1. Ambient temperature of the place where the motor is mounted
 - ☒ 2. Maintenance cost of the motor
 - ☒ 3. Appearance of the motor
 - ☒ 4. Torque-speed characteristics of the motor

Question ID : 6306801175028
Option 1 ID : 6306804619350
Option 2 ID : 6306804619349
Option 3 ID : 6306804619348
Option 4 ID : 6306804619347
Status : Answered
Chosen Option : 4

Q.56 Explore the characteristics of outdoor cables and their suitability for different conditions. Assess the following statements and determine their correctness.

Statements:

- I. Outdoor cables are designed to be buried underground and can withstand exposure to harsh elements.
- II. Underground Burial Cables, with water-blocking fillers or polymer gel, ensure long-term resistance to water infiltration into the core.

- Ans
- ☒ 1. Statements II alone is correct
 - ☒ 2. Statement I alone is correct
 - ☒ 3. Both Statements I and II together are incorrect
 - ☒ 4. Both Statements I and II together are correct

Question ID : 6306801209469
Option 1 ID : 6306804756383
Option 2 ID : 6306804756382
Option 3 ID : 6306804756385
Option 4 ID : 6306804756384
Status : Answered
Chosen Option : 4

Q.57 Which of the given options best describes the truthfulness of the following statements?

- P: Within the solenoid, the field lines are in the form of parallel straight lines.
Q: The field within the solenoid is uniform.
R: Both ends of the solenoid act as magnetic north poles.

- Ans
- ☒ 1. Only statements P and Q are correct
 - ☒ 2. Statements P, Q and R – all are correct
 - ☒ 3. Only statements Q and R are correct
 - ☒ 4. Only statements P and R are correct

Question ID : 6306801175059
Option 1 ID : 6306804619472
Option 2 ID : 6306804619471
Option 3 ID : 6306804619474
Option 4 ID : 6306804619473
Status : Answered
Chosen Option : 1

Q.58 Select the option that is true regarding the following two statements labelled Assertion (A) and Reason (R).

(A): Synchronous motors can be used to improve the voltage regulation of the transmission lines.

(R): Synchronous motors are well suited where constant speed is required.

Ans  1.

Statements A and R are true, but R is not the correct explanation of A.

 2. Both statements A and R are false.

 3. Statement A is true, but statement R is false.

 4.

Statements A and R are true and R is the correct explanation of A.

Question ID : 6306801175088

Option 1 ID : 6306804619590

Option 2 ID : 6306804619588

Option 3 ID : 6306804619587

Option 4 ID : 6306804619589

Status : Answered

Chosen Option : 1

Q.59 Match the Following:

Function: Devices:

- 1. Producing Electron beam A. Trigger circuit
- 2. Deflected beam appear B. Fluorescent screen.
- 3. Synchronising the deflection of electron beam C. Electron gun
- 4. Generate different type of wave D. Function generator.

Ans  1. 1-B, 2-C, 3-D, 4-A

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

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

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

Question ID : 6306801209424

Option 1 ID : 6306804756203

Option 2 ID : 6306804756204

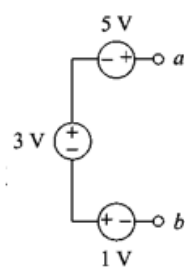
Option 3 ID : 6306804756205

Option 4 ID : 6306804756202

Status : Answered

Chosen Option : 2

Q.60 Find the voltage ' V_{ab} ' between terminals 'a' and 'b' in the following figure.



- Ans
- ☒ 1. 7 V
 - ☒ 2. 9 V
 - ☒ 3. 3 V
 - ☒ 4. 1 V

Question ID : 6306801174945
Option 1 ID : 6306804619017
Option 2 ID : 6306804619018
Option 3 ID : 6306804619016
Option 4 ID : 6306804619015
Status : Answered
Chosen Option : 2

Q.61 What is the power consumption, in watts, of a ¼ HP motor, according to the provided information?

- Ans
- ☒ 1. 373 watts
 - ☒ 2. 186 watts
 - ☒ 3. 745.7 watts
 - ☒ 4. 932.85 watts

Question ID : 6306801209426
Option 1 ID : 6306804756210
Option 2 ID : 6306804756211
Option 3 ID : 6306804756212
Option 4 ID : 6306804756213
Status : Answered
Chosen Option : 2

Q.62 Which of the following statements are correct?

P: Biomass energy or fuel cannot be stored and distributed.

Q: The emissions from biomass energy generation can potentially pollute the environment.

R: Biomass power plants that use pyrolysis are more efficient than direct combustion power plants.

- Ans
- ☒ 1. Only statements P and Q are correct.
 - ☒ 2. Statements P, Q and R – all are correct.
 - ☒ 3. Only statements P and R are correct.
 - ☒ 4. Only statements Q and R are correct.

Question ID : 6306801175007

Option 1 ID : 6306804619263

Option 2 ID : 6306804619266

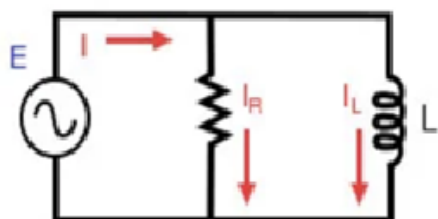
Option 3 ID : 6306804619265

Option 4 ID : 6306804619264

Status : Answered

Chosen Option : 3

Q.63 Which of the following equations is correct according to the given parallel circuit?



- Ans
- ☒ 1. $E = E_R / E_L$
 - ☒ 2. $I = I_R / I_L$
 - ☒ 3. $I = I_R + I_L$
 - ☒ 4. $E = E_R + E_L$

Question ID : 6306801209446

Option 1 ID : 6306804756292

Option 2 ID : 6306804756293

Option 3 ID : 6306804756291

Option 4 ID : 6306804756290

Status : Answered

Chosen Option : 3

Q.64 With reference to DC arc welding, which of the following statements is INCORRECT?

- Ans
- ☒ 1. It is costlier than AC arc welding.
 - ☒ 2. It cannot be used for nonferrous metals.
 - ☒ 3. The operation is noisy.
 - ☒ 4. The arc is stable.

Question ID : 6306801175130
Option 1 ID : 6306804619757
Option 2 ID : 6306804619758
Option 3 ID : 6306804619756
Option 4 ID : 6306804619755
Status : Answered
Chosen Option : 2

Q.65 What type of component in an electrical circuit has to be used to deliver power or process electrical signals?

- Ans
- ☒ 1. Linear component
 - ☒ 2. Passive component
 - ☒ 3. Unilateral component
 - ☒ 4. Active component

Question ID : 6306801209412
Option 1 ID : 6306804756155
Option 2 ID : 6306804756157
Option 3 ID : 6306804756154
Option 4 ID : 6306804756156
Status : Answered
Chosen Option : 4

Q.66 Which of the following pairs of typical diodes and their corresponding threshold voltages is correct?

- Ans
- ☒ 1. Schottky diode : 2 V
 - ☒ 2. Light-emitting diode : 0.1 V
 - ☒ 3. Germanium diode : 0.9 V
 - ☒ 4. Silicon diode : 0.7 V

Question ID : 6306801175031
Option 1 ID : 6306804619361
Option 2 ID : 6306804619362
Option 3 ID : 6306804619360
Option 4 ID : 6306804619359
Status : Answered
Chosen Option : 4

Q.67 Explore the components and systems related to the thermal power plant. Assess the following statements and determine their correctness.

Statements:

- I. Ash handling plants (AHPs) remove ash from furnace ash hoppers, convey it through mechanical, hydraulic, or pneumatic transport, and dispose of the stored ash.
- II. The electrical thermal plant involves supplying medium voltage, low voltage, and direct current power to all loads in the power plant, covering aspects from power evacuation to switchyard control.

- Ans
- ☒ 1. Both Statements I and II together are incorrect
 - ☒ 2. Both Statements I and II together are correct
 - ☒ 3. Statements II is correct
 - ☒ 4. Statement I alone is correct

Question ID : 6306801209464
Option 1 ID : 6306804756365
Option 2 ID : 6306804756364
Option 3 ID : 6306804756363
Option 4 ID : 6306804756362
Status : Answered
Chosen Option : 4

Q.68 A 240-V DC shunt motor has an armature resistance of 0.25 Ω and runs at 1000 RPM, taking an armature current of 40 A. It is desired to reduce to speed to 800 RPM. If the armature current remains the same, find the additional resistance to be connected in series with the armature circuit.

- Ans
- ☒ 1. 1.75 Ω
 - ☒ 2. 1.25 Ω
 - ☒ 3. 1.65 Ω
 - ☒ 4. 1.15 Ω

Question ID : 6306801175082
Option 1 ID : 6306804619566
Option 2 ID : 6306804619564
Option 3 ID : 6306804619565
Option 4 ID : 6306804619563
Status : Answered
Chosen Option : 4

Q.69 Which of the following is a VALID disadvantage of single bus bar system?

- Ans
- ☒ 1. High fault current
 - ☒ 2. High cost
 - ☒ 3. Complex operation
 - ☒ 4. High maintenance

Question ID : 6306801175123
Option 1 ID : 6306804619730
Option 2 ID : 6306804619727
Option 3 ID : 6306804619729
Option 4 ID : 6306804619728
Status : Answered
Chosen Option : 1

Q.70 Under no-load conditions, if the frequency of the AC supply is decreased while maintaining a constant magnetic flux in a single-phase transformer, what is the anticipated impact on the induced voltage in the secondary winding?

- Ans**
- ☒ 1. The induced voltage undergoes a linear increase.
 - ☒ 2. The induced voltage demonstrates a sinusoidal variation.
 - ☒ 3. The induced voltage experiences a linear decrease.
 - ☒ 4. The induced voltage remains constant.

Question ID : 6306801174978
Option 1 ID : 6306804619148
Option 2 ID : 6306804619150
Option 3 ID : 6306804619147
Option 4 ID : 6306804619149
Status : Answered
Chosen Option : 3

Q.71 Which of the following is NOT a valid disadvantage of shaded-pole type single-phase induction motor?

- Ans**
- ☒ 1. Low starting torque
 - ☒ 2. Low power factor
 - ☒ 3. High cost
 - ☒ 4. High losses

Question ID : 6306801174987
Option 1 ID : 6306804619183
Option 2 ID : 6306804619186
Option 3 ID : 6306804619184
Option 4 ID : 6306804619185
Status : Answered
Chosen Option : 3

Q.72 A 36-pole alternator running at a speed of _____ RPM will produce a frequency of 60 Hz.

- Ans**
- ☒ 1. 400
 - ☒ 2. 200
 - ☒ 3. 600
 - ☒ 4. 300

Question ID : 6306801175093
Option 1 ID : 6306804619609
Option 2 ID : 6306804619607
Option 3 ID : 6306804619610
Option 4 ID : 6306804619608
Status : Answered
Chosen Option : 2

Q.73 Which of the following is the correct classification of distribution systems according to the nature of the current?

- Ans**
- ☒ 1. Overhead and underground systems
 - ☒ 2. Radial, ring mains and interconnected systems
 - ☒ 3. AC and DC distribution systems
 - ☒ 4. Open and insulated conductor systems

Question ID : 6306801175010
Option 1 ID : 6306804619275
Option 2 ID : 6306804619276
Option 3 ID : 6306804619277
Option 4 ID : 6306804619278
Status : Answered
Chosen Option : 3

Q.74 Which of the following oscillators is generally considered a fixed frequency oscillator?

- Ans**
- ☒ 1. Phase-shift oscillator
 - ☒ 2. Hartley oscillator
 - ☒ 3. Wien-bridge oscillator
 - ☒ 4. Crystal oscillator

Question ID : 6306801174974
Option 1 ID : 6306804619134
Option 2 ID : 6306804619132
Option 3 ID : 6306804619133
Option 4 ID : 6306804619131
Status : Answered
Chosen Option : 4

Q.75 With reference to the methods of determination of voltage regulation of smooth cylindrical rotor type alternators, which of the following methods is known as zero-power factor method?

- Ans**
- ☒ 1. Synchronous impedance method
 - ☒ 2. Direct loading method
 - ☒ 3. Potier method
 - ☒ 4. Ampere-turn method

Question ID : 6306801174996
Option 1 ID : 6306804619220
Option 2 ID : 6306804619222
Option 3 ID : 6306804619219
Option 4 ID : 6306804619221
Status : Answered
Chosen Option : 3

Q.76 Determine the total charge transferred over the time interval of $0 \leq t \leq 10$ s, when the current is given as $i(t) = 0.5 t$ A.

- Ans
- ☒ 1. 50 C
 - ☒ 2. 10 C
 - ☒ 3. 25 C
 - ☒ 4. 5 C

Question ID : 6306801175040
Option 1 ID : 6306804619395
Option 2 ID : 6306804619397
Option 3 ID : 6306804619396
Option 4 ID : 6306804619398
Status : Answered
Chosen Option : 3

Q.77 What is the mathematical representation of solid angle (ω) in terms of area (A) and radius (r)?

- Ans
- ☒ 1. $\omega=r/A^2$
 - ☒ 2. $\omega=A/r^2$
 - ☒ 3. $\omega=A/r$
 - ☒ 4. $\omega=A r^2 /2$

Question ID : 6306801209441
Option 1 ID : 6306804756271
Option 2 ID : 6306804756273
Option 3 ID : 6306804756270
Option 4 ID : 6306804756272
Status : Answered
Chosen Option : 2

Q.78 What will be the main consideration in quotation of any electrical installation?

- Ans
- ☒ 1. Designing of component
 - ☒ 2. Quality of component
 - ☒ 3. Pricing of component
 - ☒ 4. Type of bid

Question ID : 6306801209436
Option 1 ID : 6306804756252
Option 2 ID : 6306804756253
Option 3 ID : 6306804756251
Option 4 ID : 6306804756250
Status : Answered
Chosen Option : 3

Q.79 In a transformer, the core loss is found to be 52 W at 40 Hz and 90 W at 60 Hz, measured at same peak flux density. Compute the eddy current loss at 50 Hz.

- Ans** ☒ 1. 25 W
 ☐ 2. 55 W
 ☐ 3. 35 W
 ☐ 4. 45 W

Question ID : 6306801174983
Option 1 ID : 6306804619167
Option 2 ID : 6306804619170
Option 3 ID : 6306804619168
Option 4 ID : 6306804619169
Status : Answered
Chosen Option : 1

Q.80 Which of the following is a passive electronic component?

- Ans** ☐ 1. Photo diode
 ☐ 2. Operational amplifier
 ☒ 3. Capacitor
 ☐ 4. Transistor

Question ID : 6306801175037
Option 1 ID : 6306804619384
Option 2 ID : 6306804619385
Option 3 ID : 6306804619386
Option 4 ID : 6306804619383
Status : Answered
Chosen Option : 3

Q.81 Explore the components and systems related to the thermal power plant. Assess the following statements and determine their correctness.
Statements:
I. Water economizers in boiler installations increase efficiency by utilizing the heat of exhaust gases.
II. The electrical thermal plant involves supplying medium voltage, low voltage, and direct current power to all loads in the power plant, covering aspects from power evacuation to switchyard control.

- Ans** ☐ 1. Statement I alone is correct
 ☐ 2. Statements II is correct
 ☐ 3. Both Statements I and II together are incorrect
 ☒ 4. Both Statements I and II together are correct

Question ID : 6306801209433
Option 1 ID : 6306804756238
Option 2 ID : 6306804756239
Option 3 ID : 6306804756241
Option 4 ID : 6306804756240
Status : Answered
Chosen Option : 1

Q.82 Two long parallel conductors, each one carrying current 100 A, flowing in the same direction, are separated by 1 cm in air. Find the force per metre length of the conductor.

- Ans**
- ☒ 1. 2.0 N/m attractive force
 - ☒ 2. 2.0 N/m repulsive force
 - ☒ 3. 0.2 N/m repulsive force
 - ☒ 4. 0.2 N/m attractive force

Question ID : 6306801174955
Option 1 ID : 6306804619058
Option 2 ID : 6306804619056
Option 3 ID : 6306804619055
Option 4 ID : 6306804619057
Status : Answered
Chosen Option : 4

Q.83 What is the significance of Rule 29 in the Indian Electricity Rules, 2005, regarding electrical installations?

- Ans**
- ☒ 1. It defines the safety measures for the installation, protection, and maintenance of electrical systems.
 - ☒ 2. It details the guidelines for the Bureau of Indian Standards related to electrical engineering.?
 - ☒ 3. It outlines the regulations for estimating and costing in electrical projects.
 - ☒ 4. It specifies the requirements for planning electrical circuits.

Question ID : 6306801209440
Option 1 ID : 6306804756268
Option 2 ID : 6306804756269
Option 3 ID : 6306804756267
Option 4 ID : 6306804756266
Status : Answered
Chosen Option : 1

Q.84 In a cathode-ray tube, the focusing anode is positioned between the _____.

- Ans**
- ☒ 1. pre-accelerating anode and accelerating anode
 - ☒ 2. horizontal and vertical deflection plates
 - ☒ 3. control grid and pre-accelerating anode
 - ☒ 4. accelerating anode and vertical deflection plates

Question ID : 6306801174970
Option 1 ID : 6306804619116
Option 2 ID : 6306804619117
Option 3 ID : 6306804619115
Option 4 ID : 6306804619118
Status : Answered
Chosen Option : 1

Q.85 Which of the given options best describes the truthfulness of the following statements with reference to mechanical draught and natural draught in a thermal power plant?

P: Mechanical draught is independent of atmospheric temperature.
Q: In case of natural draught, the chimney height is more.

- Ans
- ☒ 1. P: False, Q: True
 - ☒ 2. P: True, Q: False
 - ☒ 3. P: True, Q: True
 - ☒ 4. P: False, Q: False

Question ID : 6306801175108
Option 1 ID : 6306804619670
Option 2 ID : 6306804619669
Option 3 ID : 6306804619667
Option 4 ID : 6306804619668
Status : Answered
Chosen Option : 3

Q.86 Match the following terms with their correct formula in the context of work (W), power(P), and (E)energy:
Terms: Definitions:
1. Electrical Energy Formula a) $V \cdot I$ watts
2. Electrical Power formula b) $I^2 R \cdot t$
3. Basic Units of Electrical Energy c) Joule
4. Basic units of Electrical Power d) Joule/Sec

- Ans
- ☒ 1. 1-b, 2-d, 3-a, 4-c
 - ☒ 2. 1-d, 2-b, 3-c, 4-a
 - ☒ 3. 1-c, 2-a, 3-d, 4-b
 - ☒ 4. 1-b, 2-a, 3-c, 4-d

Question ID : 6306801209417
Option 1 ID : 6306804756175
Option 2 ID : 6306804756174
Option 3 ID : 6306804756176
Option 4 ID : 6306804756177
Status : Answered
Chosen Option : 4

Q.87 What component, integral to electrostatics, is designed to accumulate and discharge electrical energy by utilizing the electric field between two conductive plates?

- Ans
- ☒ 1. Capacitors
 - ☒ 2. Transformers
 - ☒ 3. Inductors
 - ☒ 4. Resistors

Question ID : 6306801209449
Option 1 ID : 6306804756303
Option 2 ID : 6306804756302
Option 3 ID : 6306804756304
Option 4 ID : 6306804756305
Status : Answered
Chosen Option : 1

Q.88 A potential barrier of 0.7 V exists across a PN-junction. Calculate the intensity of the electric fiend in the depletion region, if the width of the depletion region is (3.5×10^{-7}) m.

- Ans
- ☒ 1. (0.2×10^6) V/m
 - ☒ 2. (0.2×10^4) V/m
 - ☒ 3. (2×10^6) V/m
 - ☒ 4. (2×10^4) V/m

Question ID : 6306801175134
Option 1 ID : 6306804619773
Option 2 ID : 6306804619774
Option 3 ID : 6306804619772
Option 4 ID : 6306804619771
Status : Answered
Chosen Option : 3

Q.89 Under what conditions does an alternator exhibit a zero-voltage regulation?

- Ans
- ☒ 1. At unity power factor
 - ☒ 2. At a certain leading power factor
 - ☒ 3. At lower leading power factors
 - ☒ 4. At lagging power factor

Question ID : 6306801209428
Option 1 ID : 6306804756218
Option 2 ID : 6306804756221
Option 3 ID : 6306804756220
Option 4 ID : 6306804756219
Status : Answered
Chosen Option : 2

Q.90 Which of the following statements is INCORRECT?

- Ans
- ☒ 1. Commercial electrical systems operate at higher voltage levels.
 - ☒ 2. Commercial properties typically require a three-phase electrical supply to meet higher power demands.
 - ☒ 3. Commercial setups often utilise conduit-based wiring methods for easier maintenance.
 - ☒ 4. Commercial installations are cheaper and easier to maintain.

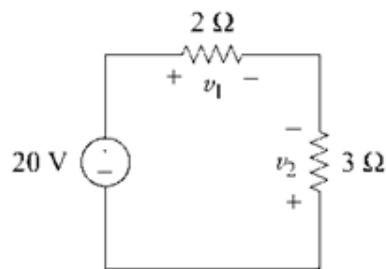
Question ID : 6306801175021
Option 1 ID : 6306804619320
Option 2 ID : 6306804619319
Option 3 ID : 6306804619321
Option 4 ID : 6306804619322
Status : Answered
Chosen Option : 1

Q.91 In a complex electrical network, applying Norton's Theorem involves finding the Norton current and Norton equivalent resistance. What is the Norton equivalent resistance for a network with resistances $R_1=8\Omega$ and $R_2=12\Omega$ in parallel?

- Ans
- ☒ 1. 2.4Ω
 - ☒ 2. 4.8Ω
 - ☒ 3. 20Ω
 - ☒ 4. 12.6Ω

Question ID : 6306801209447
Option 1 ID : 6306804756297
Option 2 ID : 6306804756296
Option 3 ID : 6306804756294
Option 4 ID : 6306804756295
Status : Answered
Chosen Option : 2

Q.92 Find the voltage ' v_1 ' in the following circuit.



- Ans
- ☒ 1. -8 V
 - ☒ 2. 8 V
 - ☒ 3. -12 V
 - ☒ 4. 12 V

Question ID : 6306801175044
Option 1 ID : 6306804619413
Option 2 ID : 6306804619411
Option 3 ID : 6306804619414
Option 4 ID : 6306804619412
Status : Answered
Chosen Option : 2

Q.93 Which of the following statements about the torque vs. armature current (T_a - I_a) characteristic of DC series motors is correct?

Ans

✖ 1. The shaft torque (T_{sh}) is greater than armature torque (T_a) due to stray losses.

✖ 2. After magnetic saturation, the T_a - I_a curve becomes a parabola.

✔ 3. The T_a - I_a curve is a parabola for smaller values of armature current before magnetic saturation.

✖ 4. In DC series motors, torque varies inversely with armature current after magnetic saturation.

Question ID : 6306801209458

Option 1 ID : 6306804756340

Option 2 ID : 6306804756339

Option 3 ID : 6306804756338

Option 4 ID : 6306804756341

Status : Answered

Chosen Option : 3

Q.94 What is the primary difference between Avalanche breakdown and Zener breakdown in a p-n junction diode?

Ans

✖ 1. Both breakdowns occur due to the rapid collision of electrons

✖ 2. Zener breakdown is irreversible, while Avalanche breakdown is reversible

✖ 3. Avalanche breakdown is a controlled version of Zener breakdown.

✔ 4. Avalanche breakdown is irreversible, while Zener breakdown is reversible.

Question ID : 6306801209444

Option 1 ID : 6306804756284

Option 2 ID : 6306804756285

Option 3 ID : 6306804756283

Option 4 ID : 6306804756282

Status : Answered

Chosen Option : 2

Q.95 Match the transistor configuration with the corresponding output resistance of the configuration.

(i) Common emitter

(ii) Common collector

(iii) Common base

(a) Low

(b) Very high

(c) High

Ans

✖ 1. (i)-(a), (ii)-(b), (iii)-(c)

✖ 2. (i)-(b), (ii)-(c), (iii)-(a)

✔ 3. (i)-(c), (ii)-(a), (iii)-(b)

✖ 4. (i)-(c), (ii)-(b), (iii)-(a)

Question ID : 6306801175033

Option 1 ID : 6306804619367

Option 2 ID : 6306804619370

Option 3 ID : 6306804619369

Option 4 ID : 6306804619368

Status : Answered

Chosen Option : 3

Q.96 Which of the following statements is INCORRECT for the superposition theorem?

Ans  1. It is used to find voltages and currents.

 2. It is applicable to linear circuits.

 3. It is applicable to bilateral circuits.

 4.

It is applicable if the circuit involves nonlinear elements such as diodes

Question ID : 6306801174948

Option 1 ID : 6306804619029

Option 2 ID : 6306804619027

Option 3 ID : 6306804619028

Option 4 ID : 6306804619030

Status : Answered

Chosen Option : 4

Q.97 The impedance of a series RL circuit is $130\ \Omega$. If the inductive reactance (X_L) in the circuit is $50\ \Omega$, find the value of the resistance.

Ans  1. $80\ \Omega$

 2. $120\ \Omega$

 3. $180\ \Omega$

 4. $90\ \Omega$

Question ID : 6306801174963

Option 1 ID : 6306804619087

Option 2 ID : 6306804619089

Option 3 ID : 6306804619090

Option 4 ID : 6306804619088

Status : Answered

Chosen Option : 2

Q.98 In a 3-wire DC system, in order to maintain voltages on the two sides of the neutral equal to each other, a/an _____ is used.

Ans  1. amplifier

 2. booster

 3. diverter

 4. balancer set

Question ID : 6306801175116

Option 1 ID : 6306804619702

Option 2 ID : 6306804619699

Option 3 ID : 6306804619701

Option 4 ID : 6306804619700

Status : Answered

Chosen Option : 4

Q.99 Which of the following is NOT a diamagnetic material?

- Ans ☒ 1. Iron
☐ 2. Bismuth
☐ 3. Silicon
☐ 4. Lead

Question ID : 6306801175057
Option 1 ID : 6306804619463
Option 2 ID : 6306804619466
Option 3 ID : 6306804619465
Option 4 ID : 6306804619464
Status : Answered
Chosen Option : 1

Q.100 What is the term used to describe the combination of a transmission line's resistance, inductance, and capacitance, influencing the voltage drop along the line and its ability to transfer power efficiently?

- Ans ☐ 1. Voltage Level
☐ 2. Line Configuration
☐ 3. Line Losses
☒ 4. Line Impedance

Question ID : 6306801209466
Option 1 ID : 6306804756373
Option 2 ID : 6306804756370
Option 3 ID : 6306804756372
Option 4 ID : 6306804756371
Status : Answered
Chosen Option : 2