

PGCIL 01 Jul 2026 7 Posts

Participant ID	
Participant Name	
Test Center Name	
Test Date	01/07/2026
Test Time	9:00 AM - 11:00 AM
Subject	Diploma Trainee Electrical

Section : Technical Knowledge Test

Q.1 Which of the following devices is used to protect electrical systems in a substation?

- Ans
- ☐ 1. Voltage regulator
 - ☒ 2. Switchgear
 - ☐ 3. Motor starter
 - ☐ 4. Battery bank

Question ID : 44100997049
Option 1 ID : 441009386238
Option 2 ID : 441009386235
Option 3 ID : 441009386236
Option 4 ID : 441009386237
Chosen Option : 2

Q.2 Why are fire tube boilers NOT preferred in modern high-capacity thermal power plants?

- Ans
- ☐ 1. Water circulates too fast
 - ☐ 2. They require excessive flue gas treatment
 - ☒ 3. Steam generation rate and pressure handling are limited
 - ☐ 4. They cannot burn pulverised coal

Question ID : 4410091169747
Option 1 ID : 4410094633379
Option 2 ID : 4410094633380
Option 3 ID : 4410094633381
Option 4 ID : 4410094633378
Chosen Option : 3

Q.3 In a distribution system single line diagram, the presence of a busbar at a substation allows which of the following operational features?

- Ans ☒ 1. Direct connection of consumer loads without protective devices
- ☒ 2. Independent control of incoming and outgoing feeders
- ☒ 3. Elimination of circuit breakers during fault conditions
- ☒ 4. Reduction of feeder current by increasing line impedance

Question ID : 4410091626010
 Option 1 ID : 4410096422465
 Option 2 ID : 4410096422466
 Option 3 ID : 4410096422468
 Option 4 ID : 4410096422467
 Chosen Option : 4

Q.4 For the first-order system:

$G(s) = 1 / (1 + sT)$,
 what are the -3 dB bandwidth ω_{BW} and the phase angle at $\omega = \omega_{BW}$?

- Ans ☒ 1. $\omega_{BW} = 1/T$; phase = -90°
- ☒ 2. $\omega_{BW} = T$; phase = -45°
- ☒ 3. $\omega_{BW} = 1/T$; phase = -45°
- ☒ 4. $\omega_{BW} = (1/\sqrt{2}) \cdot T$; phase = -45°

Question ID : 4410091399939
 Option 1 ID : 4410095529437
 Option 2 ID : 4410095529436
 Option 3 ID : 4410095529435
 Option 4 ID : 4410095529438
 Chosen Option : --

Q.5 What is the transmission line parameter B of a medium-length (Nominal π model) overhead line of 100 km with series impedance $z = 0.10 + j0.78 \Omega/\text{km}$ and shunt admittance $y = j 0.5 \times 10^{-6} \text{ S/km}$?

- Ans ☒ 1. $100 + j 780 \text{ ohm}$
- ☒ 2. $78 + j 10 \text{ ohm}$
- ☒ 3. $10 + j 78 \text{ ohm}$
- ☒ 4. $0.01 + j 7.8 \text{ ohm}$

Question ID : 4410091420420
 Option 1 ID : 4410095610596
 Option 2 ID : 4410095610593
 Option 3 ID : 4410095610595
 Option 4 ID : 4410095610594
 Chosen Option : 3

Q.6 An industrial application requires frequent speed control and high starting torque from a three-phase induction motor. Which type of motor is most suitable for this requirement?

- Ans ☒ 1. Squirrel cage induction motor
☒ 2. Deep bar cage rotor induction motor
☒ 3. Slip ring induction motor
☒ 4. Double bar cage rotor induction motor

Question ID : 4410091608724

Option 1 ID : 4410096353816

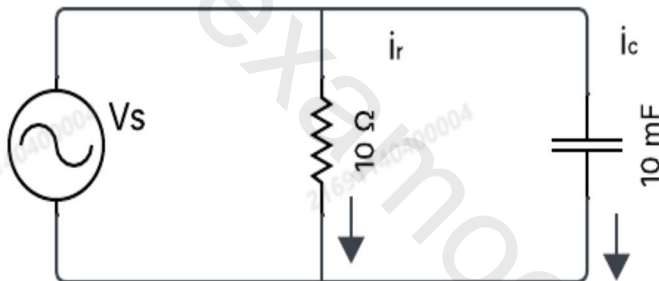
Option 2 ID : 4410096353819

Option 3 ID : 4410096353817

Option 4 ID : 4410096353818

Chosen Option : 1

Q.7 Find the current through capacitor for a parallel RC circuit given below. The current through the resistance is given as:
 $i_r = 5 \cos(\omega t - 10^\circ)$ A. And the frequency of the supply $\omega = 100$ rad/sec.



- Ans ☒ 1. $5 \cos(100t - 90^\circ)$ A
☒ 2. $50 \cos(100t + 80^\circ)$ A
☒ 3. $10 \cos(100t - 10^\circ)$ A
☒ 4. $5 \cos(100t + 90^\circ)$ A

Question ID : 4410091339094

Option 1 ID : 4410095288460

Option 2 ID : 4410095288457

Option 3 ID : 4410095288459

Option 4 ID : 4410095288458

Chosen Option : 1

Q.8 For the standard second-order system:

$$G(s) = \omega_n^2 / (s^2 + 2\zeta\omega_n s + \omega_n^2),$$

let $\zeta = 1/3$ and $\omega = \omega_n/\sqrt{3}$. What is the phase angle $\phi(\omega)$?

- Ans
- ☐ 1. -15°
 - ☐ 2. -60°
 - ☒ 3. -30°
 - ☐ 4. -45°

Question ID : 4410091399992
 Option 1 ID : 4410095529655
 Option 2 ID : 4410095529658
 Option 3 ID : 4410095529656
 Option 4 ID : 4410095529657
 Chosen Option : 4

Q.9 In a 400 V, 3-phase, 4-wire system, the voltage between any phase and the neutral wire is:

- Ans
- ☒ 1. 230 V
 - ☐ 2. 330 V
 - ☐ 3. 110 V
 - ☐ 4. 400 V

Question ID : 441009206507
 Option 1 ID : 441009812231
 Option 2 ID : 441009812232
 Option 3 ID : 441009812230
 Option 4 ID : 441009812233
 Chosen Option : 1

Q.10 The instantaneous value of a sinusoidal alternating voltage is given by _____.

- Ans
- ☐ 1. $V = V_m + \omega t$
 - ☐ 2. $V = V_m + \cos(\omega t)$
 - ☐ 3. $V = IR$
 - ☒ 4. $V = V_m \sin(\omega t)$

Question ID : 441009754315
 Option 1 ID : 4410092971249
 Option 2 ID : 4410092971250
 Option 3 ID : 4410092971252
 Option 4 ID : 4410092971251
 Chosen Option : 2

Q.11 Biogas, produced through anaerobic fermentation, primarily consists of:

- Ans ☒ 1. CH₄ and CO₂
- ☐ 2. H₂O and CO
- ☐ 3. H₂O and CO₂
- ☐ 4. CH₄ and CO

Question ID : 44100991061
 Option 1 ID : 441009362375
 Option 2 ID : 441009362372
 Option 3 ID : 441009362373
 Option 4 ID : 441009362374
 Chosen Option : 1

Q.12 Which is the correct relation between electric field intensity(E) and electric displacement(D)?

- Ans ☐ 1. $E = D \epsilon$ Where E=Electric field intensity D=Electric displacement ϵ = Permittivity of medium.
- ☐ 2. $D = E/\epsilon$ Where E=Electric field intensity D=Electric displacement ϵ = Permittivity of medium.
- ☐ 3. $D = \epsilon/E$ Where E=Electric field intensity D=Electric displacement ϵ = Permittivity of medium.
- ☒ 4. $E = D/\epsilon$ Where E=Electric field intensity D=Electric displacement ϵ = Permittivity of medium.

Question ID : 4410091358373
 Option 1 ID : 4410095365647
 Option 2 ID : 4410095365645
 Option 3 ID : 4410095365646
 Option 4 ID : 4410095365644
 Chosen Option : --

Q.13 In the Scott connection, the main transformer is characterised by:

- Ans ☐ 1. A delta-connected primary
- ☐ 2. A single winding without taps
- ☐ 3. A zigzag secondary winding
- ☒ 4. Center taps on both primary and secondary windings

Question ID : 441009275431
 Option 1 ID : 4410091069914
 Option 2 ID : 4410091069912
 Option 3 ID : 4410091069915
 Option 4 ID : 4410091069913
 Chosen Option : 4

Q.14 A delta network has resistances $R_{AB} = 20\Omega$, $R_{BC} = 10\Omega$, and $R_{CA} = 30\Omega$. Find the equivalent resistance R_A in the star network.

- Ans
- ☐ 1. 15Ω
 - ☐ 2. 12Ω
 - ☐ 3. 18Ω
 - ☒ 4. 10Ω

Question ID : 44100989697

Option 1 ID : 441009357241

Option 2 ID : 441009357243

Option 3 ID : 441009357244

Option 4 ID : 441009357242

Chosen Option : 3

Q.15 The frequency of voltage generated by a cylindrical rotor based alternator having 2-poles and rotating at 3600 r.p.m. is _____ hertz.

- Ans
- ☐ 1. 7200 Hz
 - ☒ 2. 60 Hz
 - ☐ 3. 120 Hz
 - ☐ 4. 450 Hz

Question ID : 4410091418601

Option 1 ID : 4410095603336

Option 2 ID : 4410095603335

Option 3 ID : 4410095603337

Option 4 ID : 4410095603338

Chosen Option : 2

Q.16 Consider the transfer function:

$$G(s) = (1 + (s/10)) / [s(1 + (s/100))]$$

For the asymptotic Bode magnitude plot $20 \log_{10} G(j\omega)$, what are the slopes (in dB/dec) in the three regions?

- Region I: $\omega \ll 10$
- Region II: $10 \ll \omega \ll 100$
- Region III: $\omega \gg 100$

- Ans
- ☒ 1. -20, 0, -20
 - ☐ 2. -20, +20, 0
 - ☐ 3. 0, -20, -40
 - ☐ 4. -20, -20, -40

Question ID : 4410091399972

Option 1 ID : 4410095529567

Option 2 ID : 4410095529570

Option 3 ID : 4410095529569

Option 4 ID : 4410095529568

Chosen Option : --

Q.17 Select the option that is correct regarding the following two statements labelled Assertion (A) and Reason (R).

Assertion (A): Welding transformers have higher leakage reactance than standard transformers.

Reason (R): Leakage reactance stabilises the welding arc by limiting short-circuit current.

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

Question ID : 441009275368

Option 1 ID : 4410091069661

Option 2 ID : 4410091069663

Option 3 ID : 4410091069662

Option 4 ID : 4410091069660

Chosen Option : 2

Q.18 Which of the following statements is true about the charge neutrality in Semiconductor?

- Ans**
- ☒ 1. Semiconductor is always negatively charged
 - ☒ 2. Semiconductor is always positively charged
 - ☒ 3. Semiconductor is electrically neutral
 - ☒ 4. The magnitude of total positive charge density is not equal to total negative charge density.

Question ID : 44100947674

Option 1 ID : 441009189789

Option 2 ID : 441009189788

Option 3 ID : 441009189790

Option 4 ID : 441009189791

Chosen Option : 2

Q.19 The efficiency of an auto transformer compared to a two-winding transformer is:

- Ans**
- ☒ 1. much higher
 - ☒ 2. lower
 - ☒ 3. the same
 - ☒ 4. slightly higher

Question ID : 4410091099780

Option 1 ID : 4410094336482

Option 2 ID : 4410094336484

Option 3 ID : 4410094336483

Option 4 ID : 4410094336481

Chosen Option : 3

Q.20 In Laplace's Law, what happens to the force on the conductor if the magnetic field is perpendicular to the conductor?

- Ans
- ☐ 1. Force depends only on resistance
 - ☐ 2. Direction of force reverses
 - ☒ 3. Force is maximum
 - ☐ 4. Force becomes zero

Question ID : 441009883007
Option 1 ID : 4410093485920
Option 2 ID : 4410093485921
Option 3 ID : 4410093485919
Option 4 ID : 4410093485918
Chosen Option : 1

Q.21 In the synchronous impedance (EMF) method, the synchronous reactance of an alternator is determined by taking the:

- Ans
- ☐ 1. Ratio of synchronous speed to supply frequency
 - ☒ 2. Ratio of open-circuit voltage corresponding to rated field current to short-circuit current
 - ☐ 3. Ratio of open-circuit characteristic voltage to the rated armature current
 - ☐ 4. Ratio of short-circuit current to excitation current

Question ID : 4410091365876
Option 1 ID : 4410095395095
Option 2 ID : 4410095395097
Option 3 ID : 4410095395098
Option 4 ID : 4410095395096
Chosen Option : 1

Q.22 Compared to incandescent bulbs, why do Compact Fluorescent Lamps (CFLs) contribute to additional energy savings besides lower power consumption?

- Ans
- ☐ 1. They generate more heat, improving room temperature in winter.
 - ☒ 2. They emit upto 80% less heat, reducing air conditioning load.
 - ☐ 3. They have a shorter lifespan, reducing maintenance costs.
 - ☐ 4. They require high starting voltage.

Question ID : 441009190103
Option 1 ID : 441009749494
Option 2 ID : 441009749495
Option 3 ID : 441009749496
Option 4 ID : 441009749493
Chosen Option : 3

Q.23 Friction at the bearings causes a significant error in an energy meter during which of the following conditions?

- Ans** ☒ 1. When the meter is operating at light load condition
- ☒ 2. When the pressure coil in the meter is not purely inductive
- ☒ 3. When the meter is operating at overload condition
- ☒ 4. When the pressure coil in the meter is purely inductive

Question ID : 441009296320
Option 1 ID : 4410091152415
Option 2 ID : 4410091152418
Option 3 ID : 4410091152416
Option 4 ID : 4410091152417
Chosen Option : 2

Q.24 The De Sauty Bridge is accurate only when _____.

- Ans** ☒ 1. the capacitors are ideal
- ☒ 2. high-frequency AC is applied
- ☒ 3. the bridge is powered by DC
- ☒ 4. the capacitors have significant resistance

Question ID : 44100999275
Option 1 ID : 441009395089
Option 2 ID : 441009395090
Option 3 ID : 441009395091
Option 4 ID : 441009395092
Chosen Option : 4

Q.25 Which of the following is not a consequence of grid system fault?

- Ans** ☒ 1. Tariff structure
- ☒ 2. Voltage Fluctuation
- ☒ 3. Increased Reactive Power
- ☒ 4. System Instability

Question ID : 441009325139
Option 1 ID : 4410091266873
Option 2 ID : 4410091266871
Option 3 ID : 4410091266870
Option 4 ID : 4410091266872
Chosen Option : 1

Q.26 As the temperature _____, the count of electrons in the conduction band of the intrinsic semiconductor _____.

- Ans
- ☐ 1. increases; decreases
 - ☒ 2. increases; increases
 - ☐ 3. decreases; increases
 - ☐ 4. decreases; remains constant

Question ID : 44100989018
Option 1 ID : 441009354075
Option 2 ID : 441009354076
Option 3 ID : 441009354077
Option 4 ID : 441009354078
Chosen Option : 1

Q.27 What principle does the electrostatic voltmeter operate on?

- Ans
- ☒ 1. Coulomb's Law
 - ☐ 2. Faraday's Law
 - ☐ 3. Lenz's Law
 - ☐ 4. Ampere's Law

Question ID : 441009526137
Option 1 ID : 4410092059966
Option 2 ID : 4410092059965
Option 3 ID : 4410092059967
Option 4 ID : 4410092059964
Chosen Option : 1

Q.28 Spinning Reserve is a type of _____ reserve that is connected to the grid.

- Ans
- ☐ 1. Cold
 - ☒ 2. Hot
 - ☐ 3. Molten
 - ☐ 4. Firm

Question ID : 441009341338
Option 1 ID : 4410091331344
Option 2 ID : 4410091331343
Option 3 ID : 4410091331346
Option 4 ID : 4410091331345
Chosen Option : 3

Q.29 Which statement best describes a key difference between Fourier and Laplace transforms ?

- Ans ☒ 1. Laplace transforms can incorporate initial conditions, whereas Fourier transforms do not.
- ☐ 2. Neither transform can handle initial conditions.
- ☐ 3. Both Fourier and Laplace transforms can handle initial conditions equally.
- ☐ 4. Fourier transforms can handle initial conditions, while Laplace transforms cannot.

Question ID : 44100997251
 Option 1 ID : 441009387016
 Option 2 ID : 441009387018
 Option 3 ID : 441009387017
 Option 4 ID : 441009387015
 Chosen Option : 4

Q.30 A long straight conductor carries a steady current of 'I', directed vertically upward. If the magnetic field at a point 2 cm east of the conductor is 8×10^{-6} T, find the magnitude of the current 'I'.

- Ans ☐ 1. 10 A
- ☐ 2. 0.5 A
- ☐ 3. 4 A
- ☒ 4. 0.8 A

Question ID : 4410091461519
 Option 1 ID : 4410095774208
 Option 2 ID : 4410095774209
 Option 3 ID : 4410095774207
 Option 4 ID : 4410095774206
 Chosen Option : 4

Q.31 Which statement accurately explains the variation in torque–speed behaviour between deep-bar and double-cage induction motors?

- Ans ☐ 1. Deep-bar motors deliver higher torque at low speed and poorer performance near synchronous speed compared to double-cage types.
- ☒ 2. Double-cage rotors yield superior starting torque, while deep-bar rotors ensure smoother torque transition as speed rises.
- ☐ 3. Double-cage designs are ideal for variable-speed drives since they maintain constant torque at every slip value.
- ☐ 4. Torque–speed curves of both types are identical because they depend solely on supply frequency.

Question ID : 4410091365924
 Option 1 ID : 4410095395289
 Option 2 ID : 4410095395288
 Option 3 ID : 4410095395290
 Option 4 ID : 4410095395287
 Chosen Option : --

Q.32 Modern steam power plants work on which of the following cycles?

Ans ☒ 1. Rankine cycle

☐ 2. Brayton cycle

☐ 3. Otto cycle

☐ 4. Joule cycle

Question ID : 44100991042

Option 1 ID : 441009362300

Option 2 ID : 441009362302

Option 3 ID : 441009362301

Option 4 ID : 441009362303

Chosen Option : 3

Q.33 A synchronous motor is suddenly subjected to a step increase in mechanical load. The oscillatory motion of the rotor about its equilibrium position is known as:

Ans ☐ 1. Creeping

☒ 2. Hunting

☐ 3. Cogging

☐ 4. Plugging

Question ID : 4410091894786

Option 1 ID : 4410097464718

Option 2 ID : 4410097464717

Option 3 ID : 4410097464716

Option 4 ID : 4410097464719

Chosen Option : 1

Q.34 Determine the damping factor and resonant frequency(in radians/sec) for a series RLC second order system such that $R = 20 \Omega$, $L = 10 \text{ mH}$ and $C = 1 \mu\text{F}$

Ans ☐ 1. resonant frequency = 100 rad/sec , Damping factor =0.1

☒ 2. resonant frequency = 10000 rad/sec , Damping factor =0.1

☐ 3. resonant frequency = 10000 rad/sec , Damping factor =0.5

☐ 4. resonant frequency = 100 rad/sec , Damping factor =1

Question ID : 441009204371

Option 1 ID : 441009803971

Option 2 ID : 441009803972

Option 3 ID : 441009803973

Option 4 ID : 441009803974

Chosen Option : --

Q.35 When a low-pressure mercury vapor lamp, such as a fluorescent tube, is switched on, what is the primary function of the phosphor coating inside the tube?

- Ans ☒ 1. It generates heat to start the lamp
- ☒ 2. It converts ultraviolet radiation into visible light
- ☒ 3. It filters mercury vapor from the tube
- ☒ 4. It initiates the electrical discharge

Question ID : 4410091972824
Option 1 ID : 4410097770320
Option 2 ID : 4410097770321
Option 3 ID : 4410097770322
Option 4 ID : 4410097770323
Chosen Option : 3

Q.36 Which of the following statements is correct with respect to PNP transistor?

- Ans ☒ 1. The P type collector is undoped.
- ☒ 2. The N type collector is heavily doped.
- ☒ 3. The P type emitter region is lightly doped.
- ☒ 4. The N type base region is lightly doped.

Question ID : 44100989109
Option 1 ID : 441009354530
Option 2 ID : 441009354529
Option 3 ID : 441009354527
Option 4 ID : 441009354528
Chosen Option : 4

Q.37 For the characteristic equation $s^3 + 2s^2 + 3s + 4 = 0$, how many roots lie in the right half of the s-plane using Routh's Stability Criterion?

- Ans ☒ 1. Two
- ☒ 2. Three
- ☒ 3. Zero
- ☒ 4. One

Question ID : 441009119772
Option 1 ID : 441009476205
Option 2 ID : 441009476206
Option 3 ID : 441009476203
Option 4 ID : 441009476204
Chosen Option : 2

Q.38 In a medium transmission line, which of the following factors can affect the transmission loss most significantly?

- Ans ☒ 1. The series impedance and the shunt capacitance of the line
- ☐ 2. The shunt capacitance and voltage regulation of the line
- ☐ 3. The series resistance and voltage drop of the line
- ☐ 4. The resistance and reactance of the line

Question ID : 441009116802
Option 1 ID : 441009464327
Option 2 ID : 441009464329
Option 3 ID : 441009464330
Option 4 ID : 441009464328
Chosen Option : --

Q.39 The distribution factor (Kd) in a synchronous generator is primarily used to:

- Ans ☐ 1. Improve the efficiency of the alternator under no-load conditions
- ☐ 2. Determine the maximum power output
- ☐ 3. Reduce the mechanical losses in the stator
- ☒ 4. Calculate the effect of coil span and slot number on the generated voltage

Question ID : 441009199313
Option 1 ID : 441009784553
Option 2 ID : 441009784551
Option 3 ID : 441009784554
Option 4 ID : 441009784552
Chosen Option : --

Q.40 In a PMMC instrument, controlling torque is provided by:

- Ans ☐ 1. Gravity
- ☐ 2. Magnetic damping
- ☒ 3. Springs attached to the moving coil
- ☐ 4. Air friction

Question ID : 4410091410111
Option 1 ID : 4410095569378
Option 2 ID : 4410095569377
Option 3 ID : 4410095569376
Option 4 ID : 4410095569375
Chosen Option : 2

Q.41 Two two-port networks X and Y are connected in a series-series configuration.

The Z-parameters are:

Network X: $Z_{11} = 8 \Omega$, $Z_{12} = 2 \Omega$, $Z_{21} = 2 \Omega$, $Z_{22} = 6 \Omega$

Network Y: $Z_{11} = 12 \Omega$, $Z_{12} = 1 \Omega$, $Z_{21} = 1 \Omega$, $Z_{22} = 4 \Omega$

What is the overall input impedance Z_{11} of the combined network?

Ans ☒ 1. 18Ω

☒ 2. 16Ω

☒ 3. 24Ω

☒ 4. 20Ω

Question ID : 4410091965457

Option 1 ID : 4410097742085

Option 2 ID : 4410097742084

Option 3 ID : 4410097742087

Option 4 ID : 4410097742086

Chosen Option : 2

Q.42 All-day efficiency is relevant for transformers:

Ans ☒ 1. used in power plants

☒ 2. used in motors

☒ 3. used for constant load

☒ 4. used for lighting and distribution

Question ID : 4410091181235

Option 1 ID : 4410094659074

Option 2 ID : 4410094659076

Option 3 ID : 4410094659073

Option 4 ID : 4410094659075

Chosen Option : 4

Q.43 If a two-port network consists only of bilateral elements and an input current of 3 A produces an output current of 1.5 A, what will be the output current when the input and output ports are interchanged and the same 3 A is applied?

Ans ☒ 1. Greater than 1.5 A

☒ 2. Less than 1.5 A

☒ 3. Equal to 1.5 A

☒ 4. Zero

Question ID : 4410091965391

Option 1 ID : 4410097741810

Option 2 ID : 4410097741808

Option 3 ID : 4410097741809

Option 4 ID : 4410097741811

Chosen Option : 1

Q.44 A series RLC network consists of a resistor $R=10\ \Omega$, an inductor $L=2\text{ H}$, and a capacitor $C=50\ \mu\text{F}$. Before switching, the capacitor is initially charged to 12 V and the inductor carries an initial current of 3 A. At $t=0$, a 50 V DC step source is connected to the circuit. Which of the following correctly represents the initial conditions immediately after switching at $t=0$?

- Ans
- ☒ 1. $i_L(0^+) = 3\text{ A}$, $v_C(0^+) = 0\text{ V}$
 - ☒ 2. $i_L(0^+) = 5\text{ A}$, $v_C(0^+) = 38\text{ V}$
 - ☒ 3. $i_L(0^+) = 5\text{ A}$, $v_C(0^+) = 50\text{ V}$
 - ☒ 4. $i_L(0^+) = 3\text{ A}$, $v_C(0^+) = 12\text{ V}$

Question ID : 4410091969569

Option 1 ID : 4410097758234

Option 2 ID : 4410097758236

Option 3 ID : 4410097758235

Option 4 ID : 4410097758233

Chosen Option : --

Q.45 The built-in barrier potential of a PN junction diode _____ with an increase in doping concentration and is _____ proportional to the intrinsic concentration.

- Ans
- ☒ 1. decreases; inversely
 - ☒ 2. increases; inversely
 - ☒ 3. decreases; directly
 - ☒ 4. increases; directly

Question ID : 441009283152

Option 1 ID : 4410091099748

Option 2 ID : 4410091099746

Option 3 ID : 4410091099749

Option 4 ID : 4410091099747

Chosen Option : 2

Q.46 The term “spinning reserve” is used for a type of hot reserve in power generation. What does the word “spinning” mean here?

- Ans
- ☒ 1. The turbine blades are moving only because of wind
 - ☒ 2. The backup power is supplied by batteries
 - ☒ 3. The generator is already running and turning with the grid but not taking load
 - ☒ 4. The generator is stopped but can start quickly

Question ID : 4410091437872

Option 1 ID : 4410095680199

Option 2 ID : 4410095680200

Option 3 ID : 4410095680197

Option 4 ID : 4410095680198

Chosen Option : --

Q.47 Read the given Assertion (A) and Reason (R) and select the most appropriate option.

(A): For maximum power to be transferred if a DC source has an internal resistance of $10\ \Omega$. The value of the load resistance should be $10\ \Omega$.

(R): In DC circuits, maximum power is transferred to the load when the load resistance equals the source resistance.

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

Question ID : 441009154395

Option 1 ID : 441009612755

Option 2 ID : 441009612757

Option 3 ID : 441009612754

Option 4 ID : 441009612756

Chosen Option : --

Q.48 The lowest order harmonic present in the source current of 12 pulse converter used in HVDC transmission is the _____.

- Ans
- ☒ 1. 11th
 - ☒ 2. 7th
 - ☒ 3. 5th
 - ☒ 4. 13th

Question ID : 4410091442939

Option 1 ID : 4410095700992

Option 2 ID : 4410095700991

Option 3 ID : 4410095700990

Option 4 ID : 4410095700993

Chosen Option : 3

Q.49 Which type of earthing is the most suitable for a high-rise commercial building with heavy electrical loads?

- Ans
- ☒ 1. Plate Earthing
 - ☒ 2. Pipe Earthing
 - ☒ 3. Chemical Earthing
 - ☒ 4. Strip Earthing

Question ID : 44100971171

Option 1 ID : 441009283068

Option 2 ID : 441009283067

Option 3 ID : 441009283070

Option 4 ID : 441009283069

Chosen Option : 1

Q.50 The damper winding in a synchronous machine is provided to:

- Ans ☒ 1. Develop starting torque and to damp out the oscillations
- ☐ 2. Reduce copper loss and iron loss
- ☐ 3. Damp out the oscillations and to increase machine's efficiency
- ☐ 4. Develop high running torque and to damp out the oscillations

Question ID : 4410091231128
Option 1 ID : 4410094857991
Option 2 ID : 4410094857993
Option 3 ID : 4410094857992
Option 4 ID : 4410094857990
Chosen Option : --

Q.51 What is the primary goal of estimation in electrical projects?

- Ans ☐ 1. To select the type of wiring
- ☒ 2. To calculate the approximate cost, time and resources required
- ☐ 3. To determine the colour scheme of the installation
- ☐ 4. To reduce the installation time

Question ID : 441009104205
Option 1 ID : 441009415016
Option 2 ID : 441009415015
Option 3 ID : 441009415014
Option 4 ID : 441009415017
Chosen Option : 2

Q.52 Which of the following is required for four-quadrant operation of a 3-phase induction motor?

- Ans ☐ 1. Only stator voltage control
- ☒ 2. Inverter or converter-based drive
- ☐ 3. Rotor resistance starter
- ☐ 4. Dual speed rotor

Question ID : 441009200301
Option 1 ID : 441009788474
Option 2 ID : 441009788476
Option 3 ID : 441009788477
Option 4 ID : 441009788475
Chosen Option : 3

Q.53 Which parameter of the equivalent circuit is **almost independent of load** but strongly dependent on applied voltage?

- Ans ☒ 1. Magnetizing reactance
☐ 2. Referred load impedance
☐ 3. Series resistance
☐ 4. Leakage reactance

Question ID : 4410091595664

Option 1 ID : 4410096302720

Option 2 ID : 4410096302721

Option 3 ID : 4410096302718

Option 4 ID : 4410096302719

Chosen Option : 1

Q.54 When using short pitch windings, which connection type in three-phase synchronous generators is more effective in suppressing triplen harmonics in the line current?

- Ans ☐ 1. Neither star nor delta
☐ 2. Both star and delta equally
☒ 3. Delta connection
☐ 4. Star connection

Question ID : 4410091581463

Option 1 ID : 4410096247075

Option 2 ID : 4410096247074

Option 3 ID : 4410096247072

Option 4 ID : 4410096247073

Chosen Option : --

Q.55 In the analogy between magnetic and electric circuits, the magnetomotive force (MMF) in a magnetic circuit is equivalent to which electrical quantity?

- Ans ☒ 1. Voltage (Electromotive Force)
☐ 2. Electric Charge
☐ 3. Electric Current
☐ 4. Resistance

Question ID : 441009634619

Option 1 ID : 4410092492620

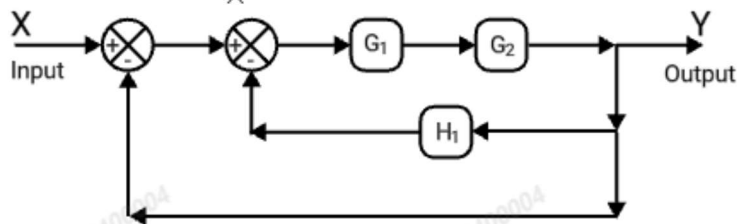
Option 2 ID : 4410092492622

Option 3 ID : 4410092492619

Option 4 ID : 4410092492621

Chosen Option : 1

Q.56 The transfer function $\frac{Y}{X}$ of a control system block diagram is:



Ans

1. $\frac{1 + G_1 + G_2}{1 + (G_1 + G_2)H_1 + G_1G_2}$
2. $\frac{1 + G_1G_2}{1 + H_1G_1G_2}$
3. $\frac{G_1G_2(1 + H_1)}{1 + G_1G_2H_1 + G_1G_2}$
4. $\frac{G_1G_2}{1 + G_1G_2H_1 + G_1G_2}$

Question ID : 441009274725

Option 1 ID : 4410091067183

Option 2 ID : 4410091067181

Option 3 ID : 4410091067184

Option 4 ID : 4410091067182

Chosen Option : 2

Q.57 Which of the following is a critical factor in selecting between overhead and underground distribution lines?

1. Length of the conductor
2. Aesthetic and environmental considerations
3. Soil type in the area
4. Colour of the conductor

Question ID : 441009104096

Option 1 ID : 441009414581

Option 2 ID : 441009414580

Option 3 ID : 441009414579

Option 4 ID : 441009414578

Chosen Option : 4

Q.58 For a time invariant system:

- Ans ☒ 1. neither system gain nor system transfer function changes over time
- ☐ 2. both system gain and system transfer function changes over time
- ☐ 3. only the system gain change over time
- ☐ 4. only the transfer function of the system changes over time

Question ID : 44100992491
Option 1 ID : 441009367677
Option 2 ID : 441009367676
Option 3 ID : 441009367674
Option 4 ID : 441009367675
Chosen Option : 2

Q.59 In a DC generator, split rings are used instead of slip rings because:

- Ans ☐ 1. Slip rings cannot handle high voltages
- ☐ 2. Split rings reduce energy losses
- ☐ 3. Slip rings are used in AC generators
- ☒ 4. Split rings reverse the current direction in the external circuit

Question ID : 441009140304
Option 1 ID : 441009557426
Option 2 ID : 441009557424
Option 3 ID : 441009557427
Option 4 ID : 441009557425
Chosen Option : 2

Q.60 A surface receives 200 lux of illumination when incident light strikes it at an angle of 0° to the normal. According to Lambert's Cosine Law, what will be the illumination if the angle of incidence increases to 60° , assuming all other factors remain unchanged?

- Ans ☒ 1. 100 lux
- ☐ 2. 50 lux
- ☐ 3. 200 lux
- ☐ 4. 173 lux

Question ID : 4410091972738
Option 1 ID : 4410097769976
Option 2 ID : 4410097769979
Option 3 ID : 4410097769977
Option 4 ID : 4410097769978
Chosen Option : --

Q.61 An amplifier with an open-loop gain of $A=100$ applies negative feedback with a feedback factor $\beta=0.1$. By what factor is the total distortion reduced?

- Ans
- ☐ 1. 101
 - ☐ 2. 10
 - ☒ 3. 11
 - ☐ 4. -9

Question ID : 4410091349581
Option 1 ID : 4410095330482
Option 2 ID : 4410095330481
Option 3 ID : 4410095330484
Option 4 ID : 4410095330483
Chosen Option : --

Q.62 Which technique is typically employed to regulate temperature in arc heating systems?

- Ans
- ☐ 1. Substituting different electrode materials exclusively
 - ☒ 2. Adjusting the current delivered to the arc
 - ☐ 3. Manually modifying only the arc length
 - ☐ 4. Switching the arc on and off mechanically

Question ID : 4410091233688
Option 1 ID : 4410094868420
Option 2 ID : 4410094868417
Option 3 ID : 4410094868418
Option 4 ID : 4410094868419
Chosen Option : 4

Q.63 What are the advantages of cleat wiring?

- Ans
- ☐ 1. Less safety
 - ☐ 2. Suitability for permanent use
 - ☐ 3. Requirement for skilled labour
 - ☒ 4. Suitability for temporary use

Question ID : 441009206600
Option 1 ID : 441009812485
Option 2 ID : 441009812488
Option 3 ID : 441009812486
Option 4 ID : 441009812487
Chosen Option : 2

Q.64 Quadrant electrometer is used for measuring the voltage ranging from about

- Ans
- ☐ 1. 50mV-100mV
 - ☐ 2. 100mV-200mV
 - ☐ 3. 50 μ V-100 μ V
 - ☒ 4. 100 V-20kV

Question ID : 4410091323257
Option 1 ID : 4410095224488
Option 2 ID : 4410095224487
Option 3 ID : 4410095224486
Option 4 ID : 4410095224485
Chosen Option : 1

Q.65 In a magnetic circuit, what is the magnetic equivalent of Ohm's law?

- Ans
- ☐ 1. Reluctance = Magnetomotive force(MMF) $\times$ Flux
 - ☐ 2. Flux = Magnetomotive Force(MMF) $\times$ Reluctance
 - ☒ 3. Magnetomotive Force(MMF) = Flux $\times$ Reluctance
 - ☐ 4. Magnetomotive force(MMF) = Flux + Reluctance

Question ID : 4410091961011
Option 1 ID : 4410097724508
Option 2 ID : 4410097724506
Option 3 ID : 4410097724505
Option 4 ID : 4410097724507
Chosen Option : 1

Q.66 A piece of insulating material is supplied with a voltage of 800 Volts and the supply frequency is 100×10^6 rad/sec. If the capacitance of the strip is 20 pF and power factor is 0.05, then calculate the power loss due to dielectric heating.

- Ans
- ☐ 1. 96 W
 - ☐ 2. 108 W
 - ☒ 3. 64 W
 - ☐ 4. 48 W

Question ID : 4410091450845
Option 1 ID : 4410095731899
Option 2 ID : 4410095731900
Option 3 ID : 4410095731898
Option 4 ID : 4410095731901
Chosen Option : --

Q.67 An amplifier has an open-loop gain of $A = 200$. A negative voltage-series feedback network with $\beta = 0.02$ is applied. What is the value of the closed loop gain A_f ?

Ans ☒ 1. 40

☐ 2. 10

☐ 3. 25

☐ 4. 100

Question ID : 4410091349956
Option 1 ID : 4410095331969
Option 2 ID : 4410095331967
Option 3 ID : 4410095331968
Option 4 ID : 4410095331970
Chosen Option : --

Q.68 What is the basic principle behind the operation of an alternator?

Ans ☐ 1. Electrostatic induction

☐ 2. Magnetic repulsion

☐ 3. Thermal conversion

☒ 4. Electromagnetic induction

Question ID : 441009199299
Option 1 ID : 441009784495
Option 2 ID : 441009784496
Option 3 ID : 441009784498
Option 4 ID : 441009784497
Chosen Option : 3

Q.69 An ideal parallel plate capacitor is supplied with a current of, $i(\omega t) = I_m \cos(\omega t - 30^\circ)$ Ampere. What will be the possible voltage across the capacitor?

Ans ☐ 1. $v(\omega t) = V_m \cos(\omega t - 90^\circ)$ Volts

☒ 2. $v(\omega t) = V_m \cos(\omega t - 120^\circ)$ Volts

☐ 3. $v(\omega t) = V_m \cos(\omega t + 90^\circ)$ Volts

☐ 4. $v(\omega t) = V_m \sin(\omega t - 120^\circ)$ Volts

Question ID : 4410091391017
Option 1 ID : 4410095493861
Option 2 ID : 4410095493858
Option 3 ID : 4410095493860
Option 4 ID : 4410095493859
Chosen Option : --

Q.70 A two-port network has the following Z-parameters: $Z_{11}=8\ \Omega$, $Z_{12}=3\ \Omega$, $Z_{21}=6\ \Omega$ and $Z_{22}=5\ \Omega$. Determine the hybrid parameters h_{21} and h_{22} .

- Ans
- ☒ 1. $h_{21} = \frac{6}{5}$ and $h_{22} = -\frac{1}{5}$
 - ☒ 2. $h_{21} = -\frac{6}{5}$ and $h_{22} = \frac{1}{5}$
 - ☒ 3. $h_{21} = \frac{4}{3}$ and $h_{22} = \frac{5}{6}$
 - ☒ 4. $h_{21} = -\frac{3}{5}$ and $h_{22} = \frac{8}{5}$

Question ID : 4410091967488

Option 1 ID : 4410097750102

Option 2 ID : 4410097750101

Option 3 ID : 4410097750104

Option 4 ID : 4410097750103

Chosen Option : --

Q.71 Voltage regulation in a transformer is defined as:

- Ans
- ☒ 1. current drop in the windings
 - ☒ 2. output/input ratio
 - ☒ 3. transformer temperature rise
 - ☒ 4. change in voltage from full-load to no-load

Question ID : 4410091181232

Option 1 ID : 4410094659063

Option 2 ID : 4410094659062

Option 3 ID : 4410094659064

Option 4 ID : 4410094659061

Chosen Option : 4

Q.72 In an RLC-AC circuit, the reactive power is associated with _____ and the active power is associated with _____.

- Ans
- ☒ 1. both inductor and capacitor; resistor
 - ☒ 2. resistor; capacitor
 - ☒ 3. capacitor only; resistor
 - ☒ 4. inductor only; capacitor

Question ID : 441009206686

Option 1 ID : 441009812738

Option 2 ID : 441009812736

Option 3 ID : 441009812735

Option 4 ID : 441009812737

Chosen Option : 2

Q.73 In electric arc welding, which feature distinguishes a DC welding machine from an AC rectified welding unit regarding current supplied for welding?

- Ans** ☒ 1. A DC welding machine generally provides smoother and more stable direct current output, while an AC rectified welding unit produces DC by rectifying AC supply.
- ☐ 2. Both DC welding machines and AC rectified welding units supply only alternating current for the welding arc.
- ☐ 3. A DC welding machine alternates current direction constantly, while an AC rectified welding unit provides only alternating current for welding.
- ☐ 4. An AC rectified welding unit cannot control current output, while a DC welding machine cannot convert current types.

Question ID : 4410091972447
 Option 1 ID : 4410097768834
 Option 2 ID : 4410097768833
 Option 3 ID : 4410097768835
 Option 4 ID : 4410097768832
 Chosen Option : 3

Q.74 Consider the characteristic equation.

$$[s^4 + 2s^3 + 4s^2 + 6s + 8 = 0]$$

After constructing the Routh array, it is found that there are two sign changes in the first column. What does this imply about the system's stability?

- Ans** ☐ 1. The system is stable because there are two sign changes.
- ☐ 2. The system is marginally unstable because there are two sign changes.
- ☒ 3. The system is unstable, with two roots in the right half of the s-plane.
- ☐ 4. The system is marginally stable with two roots on the imaginary axis.

Question ID : 441009119779
 Option 1 ID : 441009476231
 Option 2 ID : 441009476232
 Option 3 ID : 441009476233
 Option 4 ID : 441009476234
 Chosen Option : 2

Q.75 A series resonant circuit has two half-power frequencies, f_1 and f_2 . If the lower half-power frequency is 400 Hz and the upper half-power frequency is 900 Hz, what is the resonance frequency f_0 of the circuit?

- Ans** ☐ 1. 1300 Hz
- ☐ 2. 500 Hz
- ☒ 3. 600 Hz
- ☐ 4. 650 Hz

Question ID : 4410091968525
 Option 1 ID : 4410097754039
 Option 2 ID : 4410097754040
 Option 3 ID : 4410097754041
 Option 4 ID : 4410097754042
 Chosen Option : 1

Q.76 What material is used to make the brushes in a DC generator?

- Ans
- ☐ 1. Mica
 - ☐ 2. Steel
 - ☐ 3. Copper
 - ☒ 4. Carbon

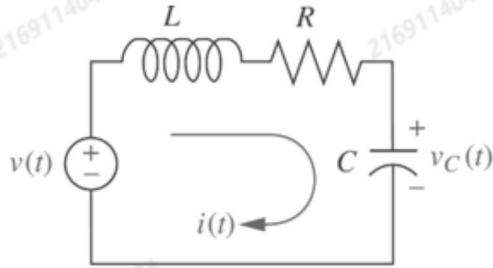
Question ID : 441009293876
Option 1 ID : 4410091142367
Option 2 ID : 4410091142369
Option 3 ID : 4410091142366
Option 4 ID : 4410091142368
Chosen Option : 1

Q.77 What is the direction of the magnetic field produced by a current-carrying conductor?

- Ans
- ☐ 1. It depends on the type of conductor
 - ☐ 2. It is in a straight line along the conductor
 - ☐ 3. It is always parallel to the conductor
 - ☒ 4. It is always in a circular pattern around the conductor

Question ID : 44100962882
Option 1 ID : 441009250574
Option 2 ID : 441009250573
Option 3 ID : 441009250572
Option 4 ID : 441009250571
Chosen Option : 1

Q.78 What is the correct transfer function relating the capacitor voltage, $V_C(s)$, to the input voltage, $V(s)$ for the given circuit diagram? (Assume zero initial condition.)



Ans

✓ 1. $\frac{(1/LC)}{\left(s^2 + \frac{R}{L}s + \frac{1}{LC}\right)}$

✗ 2. $\frac{(1/RC)}{\left(s^2 + \frac{L}{RC}s + \frac{1}{RC}\right)}$

✗ 3. $\frac{(1/RLC)}{\left(s^2 + \frac{1}{LC}s + \frac{1}{RLC}\right)}$

✗ 4. $\frac{(1/RL)}{\left(s^2 + \frac{C}{RL}s + \frac{1}{RL}\right)}$

Question ID : 441009671625

Option 1 ID : 4410092640584

Option 2 ID : 4410092640586

Option 3 ID : 4410092640585

Option 4 ID : 4410092640587

Chosen Option : 3

Q.79 A 1200MWh of electricity is supplied by power plant to its consumers for a period of 2 months, then the average demand value is _____.

- Ans
- ☒ 1. 0.633 MW
 - ☒ 2. 0.833 MW
 - ☒ 3. 0.900 MW
 - ☒ 4. 0.700 MW

Question ID : 4410091319307
Option 1 ID : 4410095208788
Option 2 ID : 4410095208789
Option 3 ID : 4410095208787
Option 4 ID : 4410095208790
Chosen Option : 2

Q.80 In a series magnetic circuit with sections of different reluctances, the same flux passes through each section. The total magnetomotive force (MMF) required is determined by:

- Ans
- ☒ 1. Taking the maximum MMF among all sections
 - ☒ 2. Adding the fluxes of all sections and multiplying by total reluctance
 - ☒ 3. Adding the individual MMFs across each section
 - ☒ 4. Multiplying the flux by the average reluctance

Question ID : 4410091422628
Option 1 ID : 4410095619419
Option 2 ID : 4410095619418
Option 3 ID : 4410095619417
Option 4 ID : 4410095619416
Chosen Option : 1

Q.81 Which of the following is a major limitation of an analog multimeter when compared to a digital multimeter (DMM)?

- Ans
- ☒ 1. Lower Accuracy and poor resolution
 - ☒ 2. Inability to measure AC voltage
 - ☒ 3. Higher input impedance
 - ☒ 4. Susceptibility for external noise

Question ID : 44100995753
Option 1 ID : 441009380983
Option 2 ID : 441009380980
Option 3 ID : 441009380981
Option 4 ID : 441009380982
Chosen Option : 3

Q.82 In electrical heating, the heat produced by a heating element is primarily due to the:

- Ans
- ☒ 1. speed at which current flows through the element
 - ☒ 2. magnetic field generated by the current
 - ☒ 3. resistance of the heating element to the flow of electrical current
 - ☒ 4. voltage applied to the element

Question ID : 441009139429

Option 1 ID : 441009553998

Option 2 ID : 441009553997

Option 3 ID : 441009553995

Option 4 ID : 441009553996

Chosen Option : 1

Q.83 In a transmission line, capacitance arises due to the potential difference between the conductors, similar to which electrical component?

- Ans
- ☒ 1. Transformer
 - ☒ 2. Inductor
 - ☒ 3. Parallel plate capacitor
 - ☒ 4. Resistor

Question ID : 44100964080

Option 1 ID : 441009255330

Option 2 ID : 441009255328

Option 3 ID : 441009255329

Option 4 ID : 441009255327

Chosen Option : 2

Q.84 In electrical wiring for commercial buildings, which of the following is NOT typically a part of point wiring work?

- Ans
- ☒ 1. Fixing of fans
 - ☒ 2. Drawing wires to switchboxes
 - ☒ 3. Fabricating busbar chambers
 - ☒ 4. Running conduits

Question ID : 441009181912

Option 1 ID : 441009719151

Option 2 ID : 441009719154

Option 3 ID : 441009719153

Option 4 ID : 441009719152

Chosen Option : 1

Q.85 In an NPN BJT under thermal equilibrium (no external bias), what is a key feature of the energy band diagram?

- Ans
- ☐ 1. The Fermi level (E_F) is different in each region.
 - ☐ 2. The conduction band is flat across all three regions.
 - ☒ 3. The Fermi level (E_F) is constant (flat) throughout the emitter, base, and collector.
 - ☐ 4. The valence band in the base is higher than in the emitter and collector.

Question ID : 4410091341901
Option 1 ID : 4410095299699
Option 2 ID : 4410095299697
Option 3 ID : 4410095299698
Option 4 ID : 4410095299700
Chosen Option : --

Q.86 A voltage source of 10 V is connected in series with a 5 Ω resistor. What is the equivalent current source?

- Ans
- ☐ 1. 2 A current source in series with 5 Ω resistor
 - ☒ 2. 2 A current source in parallel with 5 Ω resistor
 - ☐ 3. 50 A current source in series with 5 Ω resistor
 - ☐ 4. 5 A current source in parallel with 10 Ω resistor

Question ID : 441009800186
Option 1 ID : 4410093154840
Option 2 ID : 4410093154837
Option 3 ID : 4410093154838
Option 4 ID : 4410093154839
Chosen Option : 2

Q.87 Which component carries and controls current from the supply authority's cutouts to the switchboards?

- Ans
- ☒ 1. Service line
 - ☐ 2. Internal distribution system
 - ☐ 3. Transmission line
 - ☐ 4. Circuit breaker

Question ID : 44100997075
Option 1 ID : 441009386341
Option 2 ID : 441009386340
Option 3 ID : 441009386339
Option 4 ID : 441009386342
Chosen Option : 4

Q.88 What is the purpose of installing interpoles (or compoles) in a DC generator?

Ans ☒ 1. Neutralize armature reaction and improve commutation

☐ 2. Support the commutator

☐ 3. Increase the output voltage

☐ 4. Provide mechanical balance

Question ID : 441009135070

Option 1 ID : 441009536997

Option 2 ID : 441009536999

Option 3 ID : 441009536998

Option 4 ID : 441009536996

Chosen Option : 3

Q.89 A series RC charging circuit has $R=20\text{ k}\Omega$ and $C=50\text{ }\mu\text{F}$. A 100 V DC step input is applied at $t=0$. Determine the time at which the capacitor voltage reaches approximately 63% of its final value.

Ans ☐ 1. 2 sec

☒ 2. 1 sec

☐ 3. 5 sec

☐ 4. 0.1 sec

Question ID : 4410091970242

Option 1 ID : 4410097760430

Option 2 ID : 4410097760432

Option 3 ID : 4410097760429

Option 4 ID : 4410097760431

Chosen Option : 1

Q.90 Coulomb's law states that like charges repel and opposite charges attract. This law holds essentially true only when:

Ans ☐ 1. Both like and opposite charges are of same magnitude

☒ 2. Both like and opposite charges are stationary with each other

☐ 3. Opposite charges move while like charges remain stationary

☐ 4. Like charges move while opposite charges remain stationary

Question ID : 4410091460839

Option 1 ID : 4410095771501

Option 2 ID : 4410095771504

Option 3 ID : 4410095771503

Option 4 ID : 4410095771502

Chosen Option : --

Q.91 Which item is included in a tender document?

- Ans
- ☐ 1. Weather report for the work site
 - ☐ 2. List of contractor's previous projects
 - ☐ 3. Labour attendance sheet
 - ☒ 4. Notice inviting tenders

Question ID : 4410091204801
Option 1 ID : 4410094752719
Option 2 ID : 4410094752721
Option 3 ID : 4410094752722
Option 4 ID : 4410094752720
Chosen Option : 1

Q.92 A capacitor is connected to an AC source of 50 Hz. If the frequency of the applied voltage is reduced to 25 Hz, how does the capacitive reactance change?

- Ans
- ☐ 1. It becomes zero
 - ☐ 2. It halves
 - ☒ 3. It doubles
 - ☐ 4. It remains the same

Question ID : 4410091374995
Option 1 ID : 4410095431277
Option 2 ID : 4410095431279
Option 3 ID : 4410095431280
Option 4 ID : 4410095431278
Chosen Option : 3

Q.93 Which statement is false about the drain and transfer characteristics of FET?

- Ans
- ☐ 1. Drain characteristics of FET give the relation between I_D and V_{DS} for fixed values of V_{GS} .
 - ☒ 2. Transfer characteristics of FET have the Ohmic region, Saturation region, Pinch off, and breakdown region.
 - ☐ 3. The transfer characteristics of FET give the relation between I_D and V_{GS} for fixed values of V_{DS} .
 - ☐ 4. The drain and transfer characteristics of FET are static characteristics of JFET.

Question ID : 441009210667
Option 1 ID : 441009827329
Option 2 ID : 441009827332
Option 3 ID : 441009827330
Option 4 ID : 441009827331
Chosen Option : --

Q.94 A series AC circuit consists of a resistor $R=30\pi\ \Omega$ and an inductor $L=0.4\text{ H}$ connected to a 50 Hz AC source. Determine the total impedance Z of the circuit.

- Ans ☒ 1. $Z = 50\pi\ \Omega$
☐ 2. $Z = 30\pi\ \Omega$
☐ 3. $Z = 60\pi\ \Omega$
☐ 4. $Z = 40\pi\ \Omega$

Question ID : 4410091375012
Option 1 ID : 4410095431347
Option 2 ID : 4410095431345
Option 3 ID : 4410095431348
Option 4 ID : 4410095431346
Chosen Option : 3

Q.95 For a long, straight, isolated conductor carrying AC, what happens to the internal inductance as frequency increases?

- Ans ☐ 1. It remains constant
☐ 2. It becomes negative
☒ 3. It decreases due to skin effect
☐ 4. It increases due to skin effect

Question ID : 4410091625486
Option 1 ID : 4410096420411
Option 2 ID : 4410096420412
Option 3 ID : 4410096420409
Option 4 ID : 4410096420410
Chosen Option : --

Q.96 What is a key characteristic of a primary distribution system?

- Ans ☐ 1. It is a method of wireless communication.
☐ 2. It is used for water distribution in industries.
☐ 3. It is a type of mechanical power transmission system.
☒ 4. It operates at a voltage higher than utilisation voltage.

Question ID : 441009119028
Option 1 ID : 441009473230
Option 2 ID : 441009473228
Option 3 ID : 441009473229
Option 4 ID : 441009473227
Chosen Option : 4

Q.97 A two-port network is characterized by Z-parameters: $Z_{11} = 10 \Omega$, $Z_{12} = 4 \Omega$, $Z_{21} = 4 \Omega$, $Z_{22} = 8 \Omega$. If a load of 8Ω is connected across the output port, what is the input impedance at input port?

- Ans ☒ 1. 11Ω
☒ 2. 9Ω
☒ 3. 10Ω
☒ 4. 8Ω

Question ID : 4410091964171
Option 1 ID : 4410097737034
Option 2 ID : 4410097737036
Option 3 ID : 4410097737033
Option 4 ID : 4410097737035
Chosen Option : 3

Q.98 Which type of lamp has the highest luminous efficiency?

- Ans ☒ 1. Halogen Lamp
☒ 2. Incandescent Lamp
☒ 3. Light Emitting Diode (LED)
☒ 4. Compact Fluorescent Lamp (CFL)

Question ID : 44100969581
Option 1 ID : 441009276967
Option 2 ID : 441009276964
Option 3 ID : 441009276966
Option 4 ID : 441009276965
Chosen Option : 1

Q.99 In transformer testing, both open-circuit (OC) and short-circuit (SC) tests are conducted under controlled conditions. These tests help evaluate specific performance characteristics without applying full load. Which of the following quantities are determined from these tests?

- Ans ☒ 1. Magnetizing reactance and leakage reactance only
☒ 2. Load power factor under operating conditions
☒ 3. Full-load efficiency and regulation directly.
☒ 4. Core (iron) losses and copper (winding) losses

Question ID : 4410091360528
Option 1 ID : 4410095374184
Option 2 ID : 4410095374186
Option 3 ID : 4410095374183
Option 4 ID : 4410095374185
Chosen Option : 2

Q.100 In an industrial food processing unit, a metallic container holding liquid food is heated using a separate heating element carrying electric current, while the container itself remains electrically isolated from the circuit. Which method of electrical heating is being used?

- Ans ☒ 1. Arc heating
☒ 2. Indirect resistance heating
☒ 3. Direct resistance heating
☒ 4. Induction heating

Question ID : 4410091972390
Option 1 ID : 4410097768606
Option 2 ID : 4410097768607
Option 3 ID : 4410097768604
Option 4 ID : 4410097768605
Chosen Option : 1

Q.101 What is the input impedance of an ideal op-amp?

- Ans ☒ 1. Infinite
☒ 2. 0 Ω
☒ 3. 1 Ω
☒ 4. 10 K Ω

Question ID : 441009275653
Option 1 ID : 4410091070788
Option 2 ID : 4410091070786
Option 3 ID : 4410091070787
Option 4 ID : 4410091070789
Chosen Option : 1

Q.102 In a Lissajous figure, if the ratio of the frequencies of the two signals is 3:2, what will be the characteristic of the resulting figure on the oscilloscope?

- Ans ☒ 1. A straight line
☒ 2. A circle
☒ 3. A figure with a single loop
☒ 4. An ellipse with 3 loops in the X-direction and 2 loops in the Y-direction

Question ID : 441009229241
Option 1 ID : 441009896593
Option 2 ID : 441009896594
Option 3 ID : 441009896596
Option 4 ID : 441009896595
Chosen Option : --

Q.103 HVDC transmission over long distances offers which advantage compared to AC transmission?

- Ans
- ☐ 1. Higher cost of transmission
 - ☐ 2. Less requirements of convertors
 - ☐ 3. Increased complexity in design
 - ☒ 4. Lower transmission losses over long distances

Question ID : 4410091625452
Option 1 ID : 4410096420274
Option 2 ID : 4410096420276
Option 3 ID : 4410096420275
Option 4 ID : 4410096420273
Chosen Option : 4

Q.104 Which of the following components is used in the Carey Foster Bridge to balance the bridge?

- Ans
- ☐ 1. Mutual inductance
 - ☐ 2. Capacitor
 - ☐ 3. Galvanometer
 - ☒ 4. Standard resistor

Question ID : 44100968533
Option 1 ID : 441009272759
Option 2 ID : 441009272761
Option 3 ID : 441009272762
Option 4 ID : 441009272760
Chosen Option : 3

Q.105 The magnitude of the generated AC voltage depends on the:

- Ans
- ☐ 1. number of turns only
 - ☒ 2. turns, magnetic field strength and rotational speed
 - ☐ 3. rotational speed only
 - ☐ 4. magnetic field strength only

Question ID : 44100998003
Option 1 ID : 441009390109
Option 2 ID : 441009390111
Option 3 ID : 441009390112
Option 4 ID : 441009390110
Chosen Option : 4

Q.106 What is the function of the parabolic trough in concentrated solar power systems?

- Ans ☒ 1. To focus sunlight onto a receiver tube for heating fluid
- ☐ 2. To store thermal energy
- ☐ 3. To generate electricity directly through photovoltaics
- ☐ 4. To track the sun's movement

Question ID : 441009145156
 Option 1 ID : 441009576595
 Option 2 ID : 441009576594
 Option 3 ID : 441009576596
 Option 4 ID : 441009576593
 Chosen Option : 2

Q.107 Which of the following statements related to PMMC is correct?

- Ans ☐ 1. In PMMC, the pointer moves on a graduated scale to indicate the stress of the internal coil and therefore the heat loss by the coil.
- ☐ 2. In PMMC, the pointer moves on a non-linear scale to indicate the stress of the internal coil and therefore the heat loss by the coil.
- ☒ 3. In PMMC, the pointer moves on a graduated scale to indicate the angular deflection of the internal coil and therefore the current through the coil.
- ☐ 4. In PMMC, the pointer moves on a non-linear scale to indicate the angular deflection of the internal coil and therefore the current through the coil.

Question ID : 441009206538
 Option 1 ID : 441009812310
 Option 2 ID : 441009812313
 Option 3 ID : 441009812311
 Option 4 ID : 441009812312
 Chosen Option : 2

Q.108 A symmetrical and reciprocal two-port network has Y-parameters: $Y_{11} = 3 \text{ S}$ and $Y_{12} = -2 \text{ S}$. A load resistance of 1Ω is connected at port 2. If an input voltage of $V_1 = 2 \text{ V}$ is applied at port 1, what is the magnitude of the current through the load?

- Ans ☐ 1. 0.5 A
- ☐ 2. 2 A
- ☒ 3. 1 A
- ☐ 4. 1.5 A

Question ID : 4410091965876
 Option 1 ID : 4410097743807
 Option 2 ID : 4410097743804
 Option 3 ID : 4410097743806
 Option 4 ID : 4410097743805
 Chosen Option : 1

Q.109 In the Nominal π method of modelling medium transmission lines, how is the line capacitance represented?

- Ans ☒ 1. The capacitance is divided equally and placed at both ends of the line.
- ☐ 2. The entire capacitance is lumped at the receiving end.
- ☐ 3. The capacitance is neglected for simplification.
- ☐ 4. The entire capacitance is lumped at the sending end.

Question ID : 441009304396
 Option 1 ID : 4410091184288
 Option 2 ID : 4410091184287
 Option 3 ID : 4410091184289
 Option 4 ID : 4410091184286
 Chosen Option : 4

Q.110 Plant capacity factor can be defined as the:

- Ans ☐ 1. ratio of load to rated capacity of the power plant
- ☒ 2. actual energy generated divided by maximum possible energy that plant might have generated during a given period
- ☐ 3. ratio of maximum demand to rated capacity of the power plant
- ☐ 4. ratio of actual energy generated to rated capacity of plant

Question ID : 441009323742
 Option 1 ID : 4410091261165
 Option 2 ID : 4410091261166
 Option 3 ID : 4410091261164
 Option 4 ID : 4410091261167
 Chosen Option : --

Q.111 Which of the following is TRUE about the relationship between a load curve and its corresponding load duration curve?

- Ans ☐ 1. Both curves always have different shapes and areas
- ☐ 2. The load duration curve has a larger area
- ☐ 3. The load curve has a larger area
- ☒ 4. The area under both curves are equal

Question ID : 4410091595931
 Option 1 ID : 4410096303764
 Option 2 ID : 4410096303763
 Option 3 ID : 4410096303762
 Option 4 ID : 4410096303761
 Chosen Option : 1

Q.112 A single-phase AC series circuit contains a resistor of $12\ \Omega$ and an inductor with a reactance of $16\ \Omega$. If the circuit absorbs 300 W of active power, determine the RMS current flowing through it.

- Ans
- ☒ 1. 20A
 - ☒ 2. 10A
 - ☒ 3. 5A
 - ☒ 4. 15A

Question ID : 4410091374966
 Option 1 ID : 4410095431164
 Option 2 ID : 4410095431162
 Option 3 ID : 4410095431161
 Option 4 ID : 4410095431163
 Chosen Option : --

Q.113 A magnetic circuit of mean length 0.8 m and 500 turns carries a current of 2 A. Find the magnetic field strength H.

- Ans
- ☒ 1. 250 A/m
 - ☒ 2. 1250 A/m
 - ☒ 3. 500 A/m
 - ☒ 4. 750 A/m

Question ID : 4410091420604
 Option 1 ID : 4410095611333
 Option 2 ID : 4410095611336
 Option 3 ID : 4410095611334
 Option 4 ID : 4410095611335
 Chosen Option : --

Q.114 In a 3-core underground cable, if the mutual capacitance between the conductors increases due to reduced spacing or aging of insulation, it will primarily lead to:

- Ans
- ☒ 1. An increase in the dielectric stress experienced by the insulation
 - ☒ 2. A decrease in the line-to-earth potential difference
 - ☒ 3. A reduction in the charging current per phase
 - ☒ 4. A reduction in the total electrostatic energy stored within the cable system

Question ID : 4410091441333
 Option 1 ID : 4410095693984
 Option 2 ID : 4410095693985
 Option 3 ID : 4410095693983
 Option 4 ID : 4410095693986
 Chosen Option : 3

Q.115 In the context of instrument transformers, what does the term burden refer to?

- Ans
- ☐ 1. The voltage rating of the secondary winding
 - ☐ 2. The physical weight of the transformer under full load
 - ☐ 3. The frequency at which the transformer operates
 - ☒ 4. The total impedance connected across the secondary winding

Question ID : 441009158661
Option 1 ID : 441009629572
Option 2 ID : 441009629574
Option 3 ID : 441009629571
Option 4 ID : 441009629573
Chosen Option : 1

Q.116 In which application are flat-compound generators commonly used?

- Ans
- ☐ 1. Steel plants
 - ☐ 2. Railway traction
 - ☒ 3. Hotels and office buildings
 - ☐ 4. Long-distance transmission lines

Question ID : 4410091620068
Option 1 ID : 4410096399120
Option 2 ID : 4410096399122
Option 3 ID : 4410096399121
Option 4 ID : 4410096399119
Chosen Option : 4

Q.117 In a parallel RLC circuit at resonance, what happens to the current drawn from the source?

- Ans
- ☐ 1. The source current becomes maximum.
 - ☐ 2. The source current remains unchanged.
 - ☐ 3. The source current becomes equal to the sum of branch currents.
 - ☒ 4. The source current becomes minimum due to cancellation of branch currents.

Question ID : 4410091967801
Option 1 ID : 4410097751349
Option 2 ID : 4410097751351
Option 3 ID : 4410097751352
Option 4 ID : 4410097751350
Chosen Option : 1

Q.118 A 2-wire d.c. distributor ABCDEA in the form of a ring main is fed at point A at 220 V and is loaded as under: 10 A at B; 20 A at C; 30 A at D and 10 A at E. The resistances of various sections (go and return) are: AB = 0.1Ω ; BC = 0.05Ω ; CD = 0.01Ω ; DE = 0.025Ω and EA = 0.075Ω . D. The minimum potential point is:

- Ans ☒ 1. C
☒ 2. A
☒ 3. B
☒ 4. D and E

Question ID : 44100957870
 Option 1 ID : 441009230365
 Option 2 ID : 441009230363
 Option 3 ID : 441009230364
 Option 4 ID : 441009230366
 Chosen Option : --

Q.119 Select the correct statement for the solenoid filed pattern.

S1: The field pattern of solenoid is similar to that of bar magnet.
 S2: The magnetic field inside a solenoid is uniform.

- Ans ☒ 1. Neither S1 nor S2
☒ 2. S1 only
☒ 3. S2 only
☒ 4. Both S1 and S2

Question ID : 441009396467
 Option 1 ID : 4410091551319
 Option 2 ID : 4410091551317
 Option 3 ID : 4410091551318
 Option 4 ID : 4410091551316
 Chosen Option : --

Q.120 The controlling torque in a PMMC instrument is:

- Ans ☒ 1. Proportional to the angular deflection
☒ 2. Independent of pointer position
☒ 3. Proportional to the coil resistance
☒ 4. Produced by eddy currents

Question ID : 441009689224
 Option 1 ID : 4410092774523
 Option 2 ID : 4410092774524
 Option 3 ID : 4410092774522
 Option 4 ID : 4410092774525
 Chosen Option : 3

Section : General English

Q.1 Fill in the blanks with the correct articles.

Among all the Gothic cathedrals, ___ Notre Dame remains ___ finest example of medieval engineering.

Ans ☒ 1. the, the

☐ 2. an, the

☐ 3. a, a

☐ 4. the, a

Question ID : 4410091400006

Option 1 ID : 4410095529716

Option 2 ID : 4410095529717

Option 3 ID : 4410095529715

Option 4 ID : 4410095529718

Chosen Option : 4

Q.2 Select the option to rectify the given sentence.

She is capable to handling difficult situations.

Ans ☐ 1. She is capable for handling difficult situations.

☐ 2. She is capable on handling difficult situations.

☐ 3. She is capable in handling difficult situations.

☒ 4. She is capable of handling difficult situations.

Question ID : 4410091680131

Option 1 ID : 4410096628345

Option 2 ID : 4410096628342

Option 3 ID : 4410096628343

Option 4 ID : 4410096628344

Chosen Option : --

Q.3 Select the idiom that has the same meaning as the underlined group of words in the given sentence.

In spite of facing many difficulties, Hari remained calm and confident throughout the competition.

Ans ☒ 1. cool as a cucumber

☐ 2. jumping on the bandwagon

☐ 3. crying over spilled milk

☐ 4. a storm in a teacup

Question ID : 4410099878

Option 1 ID : 44100939297

Option 2 ID : 44100939296

Option 3 ID : 44100939298

Option 4 ID : 44100939295

Chosen Option : 2

Q.4 Rearrange the segments to make a coherent sentence. The first segment is fixed.

She opened the letter, / her hands trembling (P) / as she unfolded the paper (Q) / anticipation building (R) / with every second (S)

Ans ☒ 1. QSRP

☒ 2. PQRS

☒ 3. QPRS

☒ 4. PRSQ

Question ID : 4410091684583
Option 1 ID : 4410096645248
Option 2 ID : 4410096645249
Option 3 ID : 4410096645246
Option 4 ID : 4410096645247
Chosen Option : 1

Q.5 Choose the meaning of the idiom "A piece of cake".

Ans ☒ 1. A confusing situation

☒ 2. An easy task

☒ 3. A sweet treat

☒ 4. A challenging task

Question ID : 441009220097
Option 1 ID : 441009863415
Option 2 ID : 441009863413
Option 3 ID : 441009863414
Option 4 ID : 441009863412
Chosen Option : 3

Q.6 Choose the option that gives the *closest meaning* of the underlined word in the sentence.

The CEO made an astute decision that saved the company from a major financial setback.

Ans ☒ 1. Hesitant

☒ 2. Abstract

☒ 3. Shrewd

☒ 4. Ordinary

Question ID : 4410091530806
Option 1 ID : 4410096046309
Option 2 ID : 4410096046310
Option 3 ID : 4410096046307
Option 4 ID : 4410096046308
Chosen Option : 2

Q.7 Choose the option that gives the *closest meaning* of the underlined word in the sentence.

The witness gave a **succinct** statement, avoiding unnecessary details.

- Ans**
- ☒ 1. Concise
 - ☐ 2. Elaborate
 - ☐ 3. Passive
 - ☐ 4. Vacant

Question ID : 4410091530804

Option 1 ID : 4410096046299

Option 2 ID : 4410096046300

Option 3 ID : 4410096046301

Option 4 ID : 4410096046302

Chosen Option : --

Comprehension:

Read the following passage and answer the questions given below.

The expansion of digital platforms has significantly altered the nature of public discourse. Social media, once envisioned as a tool for democratizing expression, now shapes political debate, cultural norms, and collective attention. Its speed and reach allow ideas to circulate rapidly, often bypassing traditional filters such as editorial review or institutional accountability. While this openness has amplified marginalized voices, it has also facilitated misinformation, polarization, and performative outrage.

Historically, public discourse evolved within slower, deliberative spaces such as print media, academic forums, and civic assemblies. These arenas imposed constraints that encouraged reflection, though they also limited participation. Digital platforms have removed many of these barriers, but the absence of moderation mechanisms has shifted influence toward algorithms that reward engagement over accuracy. As a result, emotional intensity frequently outweighs factual nuance.

The challenge facing contemporary societies is not whether digital discourse should exist, but how it should be governed. Sustainable public conversation requires a balance between freedom and responsibility. Platforms, policymakers, and users share accountability for fostering environments where disagreement can occur without distortion. The future of democratic dialogue depends on whether technological systems can be aligned with the ethical demands of truthful and reasoned communication.

SubQuestion No : 8

Q.8 How does the passage describe traditional public discourse?

- Ans**
- ☐ 1. Fast-paced and emotional
 - ☒ 2. Slow and deliberative
 - ☐ 3. Highly inclusive but chaotic
 - ☐ 4. Entirely unregulated

Question ID : 4410091643633

Option 1 ID : 4410096491046

Option 2 ID : 4410096491047

Option 3 ID : 4410096491045

Option 4 ID : 4410096491048

Chosen Option : 1

Comprehension:

Read the following passage and answer the questions given below.

The expansion of digital platforms has significantly altered the nature of public discourse. Social media, once envisioned as a tool for democratizing expression, now shapes political debate, cultural norms, and collective attention. Its speed and reach allow ideas to circulate rapidly, often bypassing traditional filters such as editorial review or institutional accountability. While this openness has amplified marginalized voices, it has also facilitated misinformation, polarization, and performative outrage.

Historically, public discourse evolved within slower, deliberative spaces such as print media, academic forums, and civic assemblies. These arenas imposed constraints that encouraged reflection, though they also limited participation. Digital platforms have removed many of these barriers, but the absence of moderation mechanisms has shifted influence toward algorithms that reward engagement over accuracy. As a result, emotional intensity frequently outweighs factual nuance.

The challenge facing contemporary societies is not whether digital discourse should exist, but how it should be governed. Sustainable public conversation requires a balance between freedom and responsibility. Platforms, policymakers, and users share accountability for fostering environments where disagreement can occur without distortion. The future of democratic dialogue depends on whether technological systems can be aligned with the ethical demands of truthful and reasoned communication.

SubQuestion No : 9

Q.9 What inference can be drawn about emotional content online?

- Ans
- ☒ 1. It improves accountability
 - ☒ 2. It strengthens democratic dialogue
 - ☒ 3. It reduces audience engagement
 - ☒ 4. It often dominates factual nuance

Question ID : 4410091643634

Option 1 ID : 4410096491052

Option 2 ID : 4410096491049

Option 3 ID : 4410096491051

Option 4 ID : 4410096491050

Chosen Option : 1

Comprehension:

Read the following passage and answer the questions given below.

The expansion of digital platforms has significantly altered the nature of public discourse. Social media, once envisioned as a tool for democratizing expression, now shapes political debate, cultural norms, and collective attention. Its speed and reach allow ideas to circulate rapidly, often bypassing traditional filters such as editorial review or institutional accountability. While this openness has amplified marginalized voices, it has also facilitated misinformation, polarization, and performative outrage.

Historically, public discourse evolved within slower, deliberative spaces such as print media, academic forums, and civic assemblies. These arenas imposed constraints that encouraged reflection, though they also limited participation. Digital platforms have removed many of these barriers, but the absence of moderation mechanisms has shifted influence toward algorithms that reward engagement over accuracy. As a result, emotional intensity frequently outweighs factual nuance.

The challenge facing contemporary societies is not whether digital discourse should exist, but how it should be governed. Sustainable public conversation requires a balance between freedom and responsibility. Platforms, policymakers, and users share accountability for fostering environments where disagreement can occur without distortion. The future of democratic dialogue depends on whether technological systems can be aligned with the ethical demands of truthful and reasoned communication.

SubQuestion No : 10

Q.10 What structural pattern does the passage follow?

- Ans ☒ 1. Problem → rejection → alternative
☒ 2. Narrative → anecdote → conclusion
☒ 3. Background → contrast → challenge
☒ 4. Definition → example → warning

Question ID : 4410091643635

Option 1 ID : 4410096491053

Option 2 ID : 4410096491055

Option 3 ID : 4410096491054

Option 4 ID : 4410096491056

Chosen Option : 4

Section : Reasoning

Q.1 What should come in place of the question mark (?) in the given series?

269 212 155 ? 41 -16

- Ans ☒ 1. 98
☒ 2. 108
☒ 3. 93
☒ 4. 103

Question ID : 44100921179

Option 1 ID : 44100984465

Option 2 ID : 44100984463

Option 3 ID : 44100984466

Option 4 ID : 44100984464

Chosen Option : 1

Q.2 The position(s) of how many letters will remain unchanged if each of the letters in the word **OVERSIGHT** is arranged in the English alphabetical order from left to right?

- Ans
- ☒ 1. Two
 - ☒ 2. One
 - ☒ 3. Three
 - ☒ 4. None

Question ID : 441009262598

Option 1 ID : 4410091023149

Option 2 ID : 4410091023148

Option 3 ID : 4410091023150

Option 4 ID : 4410091023147

Chosen Option : --

Q.3 Alka and Babita are sisters. Mahesh is the son of Alka. Lina and Naresh are daughter and son of Babita, respectively. How is Alka related to Naresh?

- Ans
- ☒ 1. Mother's mother
 - ☒ 2. Mother
 - ☒ 3. Mother's sister
 - ☒ 4. Father's sister

Question ID : 4410091485066

Option 1 ID : 4410095866743

Option 2 ID : 4410095866744

Option 3 ID : 4410095866742

Option 4 ID : 4410095866741

Chosen Option : 3

Q.4 Based on the alphabetical order, three of the following four are alike in a certain way and thus form a group. Which is the one that does not belong to that group?

(Note: The odd man out is not based on the number of consonants/vowels or their position in the letter cluster)

- Ans
- ☒ 1. XSV
 - ☒ 2. LGI
 - ☒ 3. PKN
 - ☒ 4. TOR

Question ID : 44100931950

Option 1 ID : 441009127279

Option 2 ID : 441009127276

Option 3 ID : 441009127277

Option 4 ID : 441009127278

Chosen Option : --

Q.5 Each of E, F, G, K, L, N and O has an exam on a different day of a week starting from Monday and ending on Sunday of the same week. G has an exam on Thursday. K has an exam two days before G. Only four people have exams between O and K. L has an exam on one of the days after K. F has an exam on the day immediately before N. How many people have an exam between N and L?

- Ans
- ☐ 1. One
 - ☐ 2. Three
 - ☐ 3. Four
 - ☒ 4. Two

Question ID : 4410091576838
Option 1 ID : 4410096228260
Option 2 ID : 4410096228258
Option 3 ID : 4410096228257
Option 4 ID : 4410096228259
Chosen Option : --

Q.6 Refer to the following letter and symbol series and answer the question.
Counting to be done from left to right only.
(Left) U R G W K # G O \$ S Y F N C B E % V W (Right)
How many such letters are there, each of which is immediately preceded by a symbol and also immediately followed by a letter?

- Ans
- ☐ 1. One
 - ☐ 2. Two
 - ☐ 3. Four
 - ☒ 4. Three

Question ID : 44100916310
Option 1 ID : 44100965109
Option 2 ID : 44100965110
Option 3 ID : 44100965112
Option 4 ID : 44100965111
Chosen Option : 1

Q.7 What should come in place of '?' in the given series?
77, 84, 98, 119, 147, ?

- Ans
- ☐ 1. 180
 - ☒ 2. 182
 - ☐ 3. 185
 - ☐ 4. 188

Question ID : 4410091481096
Option 1 ID : 4410095851523
Option 2 ID : 4410095851522
Option 3 ID : 4410095851524
Option 4 ID : 4410095851525
Chosen Option : 2

Q.8 LHPG is related to NKND in a certain way based on the English alphabetical order. In the same way, PNLA is related to RQJX. To which of the given options is TTHU related, following the same logic?

- Ans
- ☒ 1. UXGR
 - ☒ 2. VWFR
 - ☒ 3. UVES
 - ☒ 4. WXFQ

Question ID : 44100923778
Option 1 ID : 44100994836
Option 2 ID : 44100994833
Option 3 ID : 44100994834
Option 4 ID : 44100994835
Chosen Option : 2

Q.9 What should come in place of '?' in the given series based on the English alphabetical order?

XVT QOM JHF CAY ?

- Ans
- ☒ 1. LKP
 - ☒ 2. ZXY
 - ☒ 3. VTR
 - ☒ 4. MNO

Question ID : 4410091589732
Option 1 ID : 4410096279467
Option 2 ID : 4410096279465
Option 3 ID : 4410096279464
Option 4 ID : 4410096279466
Chosen Option : 3

Q.10 LG 11 is related to KK -8 following a certain logic. Following the same logic, DM 17 is related to CQ -2. To which of the given options is TL 22 related, following the same logic?

- Ans
- ☒ 1. SQ 3
 - ☒ 2. SP 3
 - ☒ 3. RP 1
 - ☒ 4. RQ 1

Question ID : 44100934234
Option 1 ID : 441009136349
Option 2 ID : 441009136347
Option 3 ID : 441009136346
Option 4 ID : 441009136348
Chosen Option : 1

Q.11 Read the given statements and conclusions carefully. Assuming that the information given in the statements is true, even if it appears to be at variance with commonly known facts, decide which of the given conclusion(s) logically follow(s) from the statements.

Statements:

All bottles are cups.
All cups are mugs.
Some mugs are jars.

Conclusions:

(I): Some bottles are jars.

(II): Some cups are jars.

- Ans ☒ 1. Only conclusion I follows.
- ☒ 2. Neither conclusion I nor II follows.
- ☒ 3. Only conclusion II follows.
- ☒ 4. Both conclusions I and II follow.

Question ID : 441009805
Option 1 ID : 4410093209
Option 2 ID : 4410093207
Option 3 ID : 4410093210
Option 4 ID : 4410093208
Chosen Option : --

Q.12 Seven people, A, B, C, D, E, F and G are sitting in a row, facing north. Only two people sit to the left of B. Only three people sit between B and D. Only one person sits between D and G. E sits to the immediate left of C. A is not an immediate neighbor of D. How many people sit to the right of F?

- Ans ☒ 1. 2
- ☒ 2. 4
- ☒ 3. 3
- ☒ 4. 1

Question ID : 44100931762
Option 1 ID : 441009126537
Option 2 ID : 441009126539
Option 3 ID : 441009126538
Option 4 ID : 441009126536
Chosen Option : 3

Q.13 Each of L, M, N, O, D, E and F has an interview on a different day of a week starting from Monday and ending on Sunday of the same week. No one has interview after L. Only two people have interview between F and O. Only two people have interview between N and E. Only two people have interview between L and E. M has interview on one of the days before D. O has interview immediately after D. How many people have interview after M?

- Ans
- ☐ 1. One
 - ☐ 2. Three
 - ☐ 3. Four
 - ☒ 4. Five

Question ID : 44100933984
Option 1 ID : 441009135189
Option 2 ID : 441009135188
Option 3 ID : 441009135187
Option 4 ID : 441009135186
Chosen Option : --

Q.14 This question consists of a statement followed by two arguments I and II. Read the statement and the arguments carefully and select the most appropriate answer from the given options.

Statement:

Internet access should be restricted for children below 13 years of age.

Arguments:

- I. Children can be exposed to harmful and inappropriate content.
- II. Children need internet access for educational purposes

- Ans
- ☐ 1. Both I and II strengthen the statement.
 - ☒ 2. II weakens while I strengthens the statement.
 - ☐ 3. I weakens while II strengthens the statement.
 - ☐ 4. Both I and II weaken the statement.

Question ID : 441009346956
Option 1 ID : 4410091353895
Option 2 ID : 4410091353897
Option 3 ID : 4410091353898
Option 4 ID : 4410091353896
Chosen Option : --

Q.15 Anupam starts from Point Y and drives 42 km towards north. He then takes a left turn, drives 74 km, turns left and drives 69 km. He then takes a left turn and drives 16 km. He then takes a left turn again, drives 48 km, turns right, drives 39 km, turns right again and drives 21 km to stop at Point Z. How far (shortest distance) and towards which direction should he drive in order to reach Point Y again?

(All turns are 90 degree turns only unless specified.)

- Ans** ☒ 1. 25 km towards west
☒ 2. 19 km towards east
☒ 3. 22 km towards east
☒ 4. 17 km towards west

Question ID : 441009199
 Option 1 ID : 441009787
 Option 2 ID : 441009786
 Option 3 ID : 441009788
 Option 4 ID : 441009785
 Chosen Option : --

Section : Quantitative Aptitude

Q.1 A cone with a base radius of 5 cm and a slant height of 14 cm is painted externally. If the paint costs ₹5 per square centimeter, what is the total cost of painting the curved surface area?

$$\left(\text{Use } \pi = \frac{22}{7} \right)$$

- Ans** ☒ 1. ₹1,180
☒ 2. ₹1,100
☒ 3. ₹1,150
☒ 4. ₹1,190

Question ID : 4410091721371
 Option 1 ID : 4410096788708
 Option 2 ID : 4410096788706
 Option 3 ID : 4410096788707
 Option 4 ID : 4410096788709
 Chosen Option : 3

Q.2 A man drives 195 km to his hometown at a speed of 65 km/h. Then, he increases his speed by 20% and travels another 234 km to visit his friend. Find his average speed for the whole journey.

- Ans**
- ☒ 1. 75.2 km/h
 - ☒ 2. 73.2 km/h
 - ☒ 3. 71.5 km/h
 - ☒ 4. 72.6 km/h

Question ID : 4410091782678
Option 1 ID : 4410097030335
Option 2 ID : 4410097030337
Option 3 ID : 4410097030336
Option 4 ID : 4410097030334
Chosen Option : 4

Q.3 A pipe can fill a tank in 6 hours and another pipe can fill it in 8 hours. A third pipe can empty it in 12 hours. If all the pipes are opened together, in how many hours will the tank be filled?

- Ans**
- ☒ 1. 5 hr 48 min
 - ☒ 2. 4 hr 48 min
 - ☒ 3. 5 hr
 - ☒ 4. 3 hr 48 min

Question ID : 4410091337855
Option 1 ID : 4410095283438
Option 2 ID : 4410095283436
Option 3 ID : 4410095283437
Option 4 ID : 4410095283435
Chosen Option : 3

Q.4 Sachin borrowed a sum of ₹10,000 at a certain rate of simple interest for 4 years. If he paid an interest of ₹6,000 at the end of the period at x% per annum rate of interest, the value of x is:

- Ans**
- ☒ 1. 16
 - ☒ 2. 15
 - ☒ 3. 17
 - ☒ 4. 14

Question ID : 441009516863
Option 1 ID : 4410092022872
Option 2 ID : 4410092022871
Option 3 ID : 4410092022873
Option 4 ID : 4410092022874
Chosen Option : 4

Q.5 A and B start a business by investing ₹24,000 and ₹36,000, respectively. At the end of the year, they earn a profit of ₹30,000. How much profit (in ₹) will A get?

- Ans
- ☐ 1. 11,000
 - ☐ 2. 10,000
 - ☐ 3. 14,000
 - ☒ 4. 12,000

Question ID : 4410091539991

Option 1 ID : 4410096083312

Option 2 ID : 4410096083311

Option 3 ID : 4410096083314

Option 4 ID : 4410096083313

Chosen Option : 2

Q.6 From a point on a bridge across a river, the angles of depression of the banks on opposite sides of the river are 30° and 60° , respectively. If the bridge is at a height of 4 m above the banks, the width of the river is:

- Ans
- ☐ 1. $\frac{8}{\sqrt{3}}$ m
 - ☐ 2. $4(\sqrt{3} - 1)$ m
 - ☒ 3. $\frac{16}{\sqrt{3}}$ m
 - ☐ 4. $4\sqrt{3}$ m

Question ID : 4410091596979

Option 1 ID : 4410096307945

Option 2 ID : 4410096307943

Option 3 ID : 4410096307944

Option 4 ID : 4410096307942

Chosen Option : --

Q.7 The lengths of the three sides of a triangle are 16, 27, and A units. Which of the following is correct for the value of A?

- Ans
- ☐ 1. $11 < A \leq 43$
 - ☒ 2. $11 < A < 43$
 - ☐ 3. $12 \leq A \leq 47$
 - ☐ 4. $11 \leq A \leq 43$

Question ID : 441009601014

Option 1 ID : 4410092359175

Option 2 ID : 4410092359173

Option 3 ID : 4410092359176

Option 4 ID : 4410092359174

Chosen Option : --

Q.8 A sum of ₹24,000 invested at compound interest becomes double after 5 years. How much will it become in 10 years at the same rate of interest?

- Ans
- ☒ 1. ₹1,08,000
 - ☒ 2. ₹1,20,000
 - ☒ 3. ₹96,000
 - ☒ 4. ₹1,24,000

Question ID : 441009305395
 Option 1 ID : 4410091188315
 Option 2 ID : 4410091188316
 Option 3 ID : 4410091188314
 Option 4 ID : 4410091188317
 Chosen Option : 2

Q.9 The simplified value of $0.7 \times \frac{2}{3} - 0.3 \times \frac{1}{3} + 0.2 \times \frac{2}{5}$ is:

- Ans
- ☒ 1. $\frac{5.7}{15}$
 - ☒ 2. $\frac{7.7}{15}$
 - ☒ 3. $\frac{6.7}{15}$
 - ☒ 4. $\frac{8.7}{15}$

Question ID : 4410091546294
 Option 1 ID : 4410096108039
 Option 2 ID : 4410096108041
 Option 3 ID : 4410096108040
 Option 4 ID : 4410096108042
 Chosen Option : 4

Q.10 A teacher records the marks of 15 students, who scored 1,2,3....14,15 in a warm-up activity. What is the average score of these 15 students?

- Ans
- ☒ 1. 7
 - ☒ 2. 15
 - ☒ 3. 8
 - ☒ 4. 10

Question ID : 4410091537107
 Option 1 ID : 4410096071719
 Option 2 ID : 4410096071722
 Option 3 ID : 4410096071720
 Option 4 ID : 4410096071721
 Chosen Option : --

Q.11 Find the probability of getting an even number on both the dice or a total of 9 in a single throw of two dice.

- Ans ☒ 1. $\frac{13}{36}$
☒ 2. $\frac{17}{36}$
☒ 3. $\frac{5}{8}$
☒ 4. $\frac{3}{8}$

Question ID : 4410091226431

Option 1 ID : 4410094839208

Option 2 ID : 4410094839209

Option 3 ID : 4410094839210

Option 4 ID : 4410094839207

Chosen Option : 2

Q.12 Rajesh purchased two watches at the same price and sold one at a profit of 20% and the other at a profit of 22.5%. If the difference between the two selling prices is ₹1500, what is the cost price (in ₹) of each of the watches?

- Ans ☒ 1. 45,000
☒ 2. 55,000
☒ 3. 50,000
☒ 4. 60,000

Question ID : 4410091502968

Option 1 ID : 4410095936124

Option 2 ID : 4410095936126

Option 3 ID : 4410095936125

Option 4 ID : 4410095936127

Chosen Option : 2

Q.13 Two successive price increases of 30% and 40% on an article are equivalent to a single price increase of:

- Ans ☒ 1. 82%
☒ 2. 78%
☒ 3. 80%
☒ 4. 84%

Question ID : 4410091260736

Option 1 ID : 4410094975798

Option 2 ID : 4410094975796

Option 3 ID : 4410094975797

Option 4 ID : 4410094975799

Chosen Option : 2

Q.14 The difference between the ages of Lata and Smita is 11 years. Five years ago, the sum of their ages was 51 years. If Lata is older than Smita, find Smita's present age (in years).

- Ans
- ☒ 1. 26
 - ☒ 2. 16
 - ☒ 3. 27
 - ☒ 4. 25

Question ID : 4410091220214
 Option 1 ID : 4410094814281
 Option 2 ID : 4410094814280
 Option 3 ID : 4410094814282
 Option 4 ID : 4410094814279
 Chosen Option : 2

Q.15 The marked price of a cooker is the same at four shops I, II, III and IV. Shop I allows two successive discounts of 97% and 13%, shop II allows successive discounts of 43% and 31%, shop III allows successive discounts of 73% and 14% and shop IV allows successive discounts of 97%, 83%, and 24% on the marked price of the cooker. Which shop is selling the cooker at the lowest price?

- Ans
- ☒ 1. IV
 - ☒ 2. I
 - ☒ 3. II
 - ☒ 4. III

Question ID : 441009560734
 Option 1 ID : 4410092198203
 Option 2 ID : 4410092198206
 Option 3 ID : 4410092198205
 Option 4 ID : 4410092198204
 Chosen Option : --

Section : General Knowledge

Q.1 According to Article 74 of the Constitution of India, the Council of Ministers aids and advises which authority?

- Ans
- ☒ 1. Prime Minister of India
 - ☒ 2. Chief Justice of India
 - ☒ 3. President of India
 - ☒ 4. Speaker of the Lok Sabha

Question ID : 4410091764559
 Option 1 ID : 4410096958092
 Option 2 ID : 4410096958094
 Option 3 ID : 4410096958093
 Option 4 ID : 4410096958095
 Chosen Option : 4

Q.2 Who is popularly called the 'Grand Old Man of India' and is known for explaining the 'Drain of Wealth' theory?

- Ans** ☒ 1. Dadabhai Naoroji
☐ 2. Feroze Shah Mehta
☐ 3. Lala Lajpat Rai
☐ 4. Bipin Chandra Pal

Question ID : 4410091513699
Option 1 ID : 4410095978773
Option 2 ID : 4410095978771
Option 3 ID : 4410095978770
Option 4 ID : 4410095978772
Chosen Option : 4

Q.3 The Directorate of Enforcement works under the administrative control of which Department?

- Ans** ☒ 1. The Department of Revenue
☐ 2. The Department of Economic Affairs
☐ 3. The Central Board of Indirect Taxes and Customs
☐ 4. The Central Board of Direct Taxes

Question ID : 441009619602
Option 1 ID : 4410092432557
Option 2 ID : 4410092432558
Option 3 ID : 4410092432560
Option 4 ID : 4410092432559
Chosen Option : 1

Q.4 As announced by the Pan American Health Organization (PAHO) in November 2025, the Region of the Americas lost its verification status for the elimination of which of the following diseases?

- Ans** ☐ 1. Smallpox
☐ 2. Tuberculosis
☐ 3. Polio
☒ 4. Measles

Question ID : 4410091511399
Option 1 ID : 4410095969652
Option 2 ID : 4410095969653
Option 3 ID : 4410095969650
Option 4 ID : 4410095969651
Chosen Option : 3

Q.5 Which phenomenon describes India's seasonal wind pattern where direction reverses during summer and winter?

- Ans
- ☒ 1. Trade winds
 - ☒ 2. Jet stream
 - ☒ 3. Monsoon reversal
 - ☒ 4. Cyclonic winds

Question ID : 4410091178116
Option 1 ID : 4410094646625
Option 2 ID : 4410094646624
Option 3 ID : 4410094646626
Option 4 ID : 4410094646627
Chosen Option : 4

Q.6 Which of the following has/have been accorded 'Geographical Indication' status?

- 1. Warangal Chapata Chilli
- 2. Kannadippaya
- 3. Kumbakonam betel leaf

- Ans
- ☒ 1. Only 1
 - ☒ 2. 1, 2 and 3
 - ☒ 3. Only 2 and 3
 - ☒ 4. Only 1 and 3

Question ID : 441009147206
Option 1 ID : 441009584653
Option 2 ID : 441009584656
Option 3 ID : 441009584654
Option 4 ID : 441009584655
Chosen Option : 2

Q.7 Which of the following Indian warships represented India in Exercise Konkan-25?

- Ans
- ☒ 1. INS Kolkata
 - ☒ 2. INS Rana
 - ☒ 3. INS Shivalik
 - ☒ 4. INS Vikrant

Question ID : 4410091511443
Option 1 ID : 4410095969824
Option 2 ID : 4410095969823
Option 3 ID : 4410095969822
Option 4 ID : 4410095969821
Chosen Option : 4

Q.8 In the 17th century, which musical treatise authored by Venkatamakhi introduced the 72 Asampurna Melakarta scheme based on the 16 Swara sthanas, marking a landmark in the evolution of Carnatic music?

- Ans**
- ☐ 1. Swaramelakalanidhi
 - ☐ 2. Sangeeta Ratnakara
 - ☒ 3. Chaturdandi Prakasika
 - ☐ 4. Natya Shastra

Question ID : 4410091695685
 Option 1 ID : 4410096688740
 Option 2 ID : 4410096688738
 Option 3 ID : 4410096688737
 Option 4 ID : 4410096688739
 Chosen Option : --

Q.9 Which of the following statements is NOT correct with reference to respiration?

- Ans**
- ☐ 1. In the first step, glucose molecule is broken down into the pyruvate molecule.
 - ☐ 2. Aerobic respiration takes place in the presence of oxygen.
 - ☒ 3. Aerobic respiration takes place in the absence of oxygen.
 - ☐ 4. Carbon dioxide and water are the byproducts.

Question ID : 44100932572
 Option 1 ID : 441009129518
 Option 2 ID : 441009129517
 Option 3 ID : 441009129519
 Option 4 ID : 441009129520
 Chosen Option : 2

Q.10 Which of the following is NOT an essential feature of the Interest Equalisation Scheme (IES) with regards to exports in India?

- Ans**
- ☐ 1. It is a scheme to provide concessional interest rates on export credit.
 - ☐ 2. It provides interest subvention on export credit.
 - ☒ 3. It is a banking sector scheme for matching export credit interest rate with market interest rates.
 - ☐ 4. It is one of the most effective instruments to remove the cost disability of Indian exports.

Question ID : 441009639683
 Option 1 ID : 4410092512874
 Option 2 ID : 4410092512875
 Option 3 ID : 4410092512873
 Option 4 ID : 4410092512876
 Chosen Option : 3