

**LMRC  
JE EE 2018**

**Previous Year Paper  
(13 May 2018)**





# LUCKNOW METRO RAIL CORPORATION

Participant ID:	
Participant Name:	
Test Center Name:	ION Digital Zone iDZ Keshaw Puram
Test Date:	13/05/2018
Test Time:	3:00 PM - 5:00 PM
Subject:	NE04 Jr Engineer (Electrical)
Marks Obtained:	

Section : Technical

Q.1 For a single phase transformer, wattmeter readings for OC and SC test result are as given below.

Wattmeter reading in OC test - 2.5 KW  
Wattmeter reading in SC test - 5 KW  
Find maximum efficiency of 5 KVA transformer for unity power factor.

Question ID : 7246223134

Chosen Option : 4

- Ans
- 1. 70 %
  - 2. 66.67 %
  - 3. 33.34 %
  - 4. 41.38 %

Q.2 Which of the following is a type of arc welding?

- Ans
- 1. TIG (Tungsten Inert Gas) welding
  - 2. Friction welding
  - 3. Acetylene welding
  - 4. Ultrasonic welding

Question ID : 7246223184

Chosen Option : 2

Q.3 Hunting occurs in \_\_\_\_\_.

- Ans
- 1. Both Synchronous motor and Synchronous generator
  - 2. Synchronous motor
  - 3. Transformer
  - 4. Synchronous generator

Question ID : 7246223142

Chosen Option : 3

Q.4 Which relay is also known as Gas actuated Relay?

- Ans
- 1. Thermal Relay
  - 2. Buchholz Relay
  - 3. Induction Relay
  - 4. Solenoid Type Relay

Question ID : 7246223178

Chosen Option : 2

Q.5 The unit of luminous flux is:

- Ans
- 1. Candela
  - 2. Lumen
  - 3. Weber
  - 4. Lux

Question ID : 7246223180

Chosen Option : 2

Q.6 What is the best suitable combination while performing OC and SC test in transformer?

- Ans
- 1. OC test- HV side open, SC test-LV side shorted
  - 2. OC test- LV side open, SC test-LV side shorted
  - 3.

Question ID : 7246223133

Chosen Option : 4

OC test- HV side open, SC test-HV side shorted

4.

OC test- LV side open, SC test-HV side shorted

Q.7 What damping is used in PMMC instrument?

Question ID : 7246223117

Chosen Option : 1

Ans  1. Eddy current

2. Electromagnetic

3. Fluid friction

4. Air friction

Q.8 In synchronous generator, coil span factor is defined as \_\_\_\_\_.

Question ID : 7246223136

Chosen Option : 4

Ans  1.

Ratio of the actual voltage obtained to the possible voltage if all the coils of a polar group were concentrated in a single slot.

2.

Ratio of phasor sum of coil voltages per phase to arithmetic sum of coil voltages per phase.

3.

Ratio of the voltage generated in full coil to the voltage generated in short-pitch coil.

4.

Ratio of the voltage generated in short-pitch coil to the voltage generated in full pitch coil.

Q.9 Which part of steam power plant utilizes flue gases to raise the temperature of feed water?

Question ID : 7246223160

Chosen Option : 2

Ans  1. Condenser

2. Economizer

3. Boiler

4. Air pre heater

Q.10 Which of the following motor is best suited for an application where high speed and high torque is required?

Question ID : 7246223156

Chosen Option : 4

Ans  1. Universal Motor.

2. Shaded pole motor

3. Capacitor start motor

4. Capacitor start capacitor run motor

Q.11 1 kWh is equivalent to:

Question ID : 7246223188

Chosen Option : 2

Ans  1.  $4.18 \times 10^6$  joules

2.  $3.6 \times 10^6$  joules

3.  $41.8 \times 10^6$  joules

4.  $8.64 \times 10^6$  joules

Q.12 When light passes through a transparent material, light's direction changes through a small angle. This phenomenon is known as:

Question ID : 7246223186

Chosen Option : 3

Ans  1. Diffraction

2. Dispersion

3. Refraction

4. Reflection

Q.13 Which of the following properties is true for good heating element?

Question ID : 7246223189

Chosen Option : 1

Ans  1. High temperature coefficient of resistance

2. Low oxidizing temperature

3. Low temperature coefficient of resistance

4. Low melting temperature

Q.14 TOD related to tariff stands for:

Question ID : 7246223165

Chosen Option : 2

Ans  1. Tariff of Distribution

2. Tariff of Day

- 3. Time of Day
- 4. Time of Distribution

Q.15 Out of the following, which loss is also a category of magnetic losses?

- Ans
- 1. Windage loss
  - 2. Eddy current loss
  - 3. Copper loss
  - 4. Friction loss

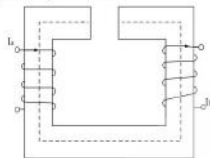
Question ID : 7246223126  
Chosen Option : 2

Q.16 The power drawn from the main supply while performing the Hopkinson test on DC machine is mainly consumed as:

- Ans
- 1. The losses in motor only
  - 2. The input to motor and not to generator.
  - 3. The input to both generator and motor
  - 4. The losses in both machines

Question ID : 7246223131  
Chosen Option : 3

Q.17 In the following figure, a rectangular iron core is shown where a 3 mm air-gap is cut in the core. The mean length of the magnetic path is 150 cm with cross-section of (3 cm × 3 cm). Two coils are present with number of turns as  $N_1 = 600$  and  $N_2 = 500$ , and carry 2 A and 1 A respectively. What is the flux in the air gap? Assume the relative permeability  $\mu_r = 1400$ .



- Ans
- 1. 100  $\mu\text{Wb}$
  - 2. 0  $\mu\text{Wb}$
  - 3. 175.84  $\mu\text{Wb}$
  - 4. 200  $\mu\text{Wb}$

Question ID : 7246223113  
Chosen Option : --

Q.18 The rotor resistance and standstill reactance per phase of a 3-phase slip-ring induction motor are 0.5  $\Omega$  and 1  $\Omega$  respectively. What should be the value of external resistance per phase to be inserted in the rotor circuit to give maximum torque at starting?

- Ans
- 1. 1  $\Omega$
  - 2. 0.5  $\Omega$
  - 3. 0.05  $\Omega$
  - 4. 2  $\Omega$

Question ID : 7246223151  
Chosen Option : 2

Q.19 The dimensions of energy are:

- Ans
- 1.  $[M^1L^{-1}T^{-1}]$
  - 2.  $[M^2L^2T^2]$
  - 3.  $[M^1L^{-2}T^{-1}]$
  - 4.  $[M^1L^2T^{-2}]$

Question ID : 7246223115  
Chosen Option : 4

Q.20 All day efficiency is calculated for \_\_\_\_\_.

- Ans
- 1. Current transformer
  - 2. Potential transformer
  - 3. Power transformer
  - 4. Distribution transformer

Question ID : 7246223146  
Chosen Option : 4

Q.21 What is the main drawback of paper as an insulating material?

- Ans
- 1. Has poor dielectric strength
  - 2. Has low insulation resistivity
  - 3. Has high capacitance
  - 4. It is hygroscopic

Question ID : 7246223176  
Chosen Option : --

Q.22 A galvanometer has an internal resistance of 100 ohm and a shunt resistance of 20 ohm. Find the multiplying factor.

Ans

Question ID : 7246223118

- 1. 5
- 2. 6
- 3. 0.2
- 4. 0.3

Chosen Option : 2

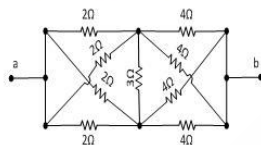
Q.23 As per Stefan's law of radiation, heat radiated by a body surface is:

- Ans  1. Directly proportional to the square of its absolute temperature
2. Inversely proportional to the fourth power of its absolute temperature
3. Directly proportional to the fourth power of its absolute temperature
4. Inversely proportional to the square of its absolute temperature

Question ID : 7246223190

Chosen Option : 3

Q.24 Determine the value of equivalent resistance across nodes a and b.



- Ans  1. 1.5  $\Omega$
2. 2.5  $\Omega$
3. 3  $\Omega$
4. 4.5  $\Omega$

Question ID : 7246223110

Chosen Option : --

Q.25 Let there be a series circuit consisting of a pure resistance and a pure inductance where the current and the voltage are expressed as:  
 $i(t) = 4\sin(314t + (2\pi)/3)$  and  $v(t) = 8\sin(314t + (5\pi)/6)$ .  
 Calculate the average power drawn by the circuit.

- Ans  1. 13.84 W
2. 15.12 W
3. 12.67 W
4. 10.42 W

Question ID : 7246223106

Chosen Option : 1

Q.26 Which of the statements is/are correct regarding rotating magnetic field production in a 3-phase induction machine?

- 1) Direction of rotation of resultant flux in the air gap depends upon phase sequence.
- 2) Resultant flux of constant magnitude is produced in the air gap of motor.
- 3) Frequency of rotating magnetic field is not same as that of the supply frequency.

- Ans  1. 1, 2 & 3
2. 1
3. 1 & 2
4. 2

Question ID : 7246223150

Chosen Option : 3

Q.27 In which of the following applications, reluctance motor would be the best choice?

- Ans  1. Hoists and lifts
2. Signaling and timing device
3. Refrigerators
4. Electric shavers

Question ID : 7246223154

Chosen Option : 4

Q.28 Which of the following is called as fluorescent material?

- Ans  1. Phosphorus
2. Helium
3. Uranium
4. Potassium

Question ID : 7246223181

Chosen Option : 1

Q.29 In synchronous generator, nature of armature reaction is \_\_\_\_\_ when it supplies a load at unity power.

- Ans  1. Demagnetizing.
2. Cross-magnetizing.
- 3.

Question ID : 7246223139

Chosen Option : 2

Partly demagnetizing and partly cross-magnetizing

4.

Partly magnetizing and partly cross-magnetizing

Q.30 For DC Series motor, type of starter used for protection from high inrush current is:

Ans  1. 2 point starter

2. 4 point starter

3. No starter is used

4. 3 point starter

Question ID : 7246223127

Chosen Option : 1

Q.31 HRC fuse stands for:

Ans  1. High Rupturing Capacity

2. High Resistive Capacity

3. High Rated Current

4. High Resonant Capacity

Question ID : 7246223166

Chosen Option : --

Q.32 The synchronizing power is \_\_\_\_\_ when two alternators are running in synchronism.

Ans  1. Negative

2. Positive

3. Zero

4. Cannot be determined

Question ID : 7246223143

Chosen Option : --

Q.33 In V/F control of a 3-phase induction motor, if voltage is increased by 10%, in order to keep air gap flux constant, what is the % increment or decrement in frequency?

Ans  1. Frequency is decreased by 10%

2. Frequency is decreased by 20%

3. Frequency is increased by 10%

4. Frequency is increased by 20%

Question ID : 7246223153

Chosen Option : 3

Q.34 In synchronous generator, nature of armature reaction is \_\_\_\_\_ when it supplies a load at lagging power.

Ans  1. Demagnetizing.

2.

Partly demagnetizing and partly cross-magnetizing

3. Magnetizing.

4. Cross-magnetizing.

Question ID : 7246223138

Chosen Option : 2

Q.35 Solid angle is expressed in:

Ans  1. Lumens

2. Radians

3. Steradian

4. Dimensionless

Question ID : 7246223187

Chosen Option : 3

Q.36 Main consideration in designing of feeder is:

Ans  1. Reactive power limit

2.

Both atmospheric condition and current carrying capacity

3. Atmospheric condition

4. Current carrying capacity

Question ID : 7246223177

Chosen Option : 4

Q.37 Which of the following is NOT true about the resonance curve at the half power points?

Ans  1.  $Q = 1$

2. Bandwidth,  $B_{hp} = \frac{R}{2\pi \times L}$

3. Circuit phase angle is  $\theta \neq 45^\circ$

Question ID : 7246223103

Chosen Option : 2

4. Impedance is  $\sqrt{2} \times R$

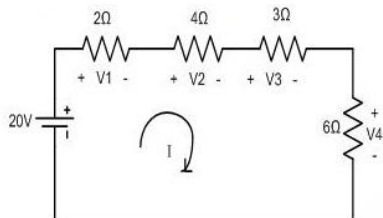
**Q.38** A flux of 0.25 mWb is produced by a coil of 1000 turns wound on a ring with a current of 2 A in it. Calculate the e.m.f. induced in the coil when current of 10 A is switched off, assuming the current will fall to zero in 1 millisecond.

- Ans  1. 2500 V  
 2. 25 V  
 3. 1250 V  
 4. 12.5 V

Question ID : 7246223108

Chosen Option : --

**Q.39** Find the voltages across each resistor as shown in figure.



- Ans  1. 2 V, 4 V, 3 V, 6 V  
 2. 4 V, 8 V, 2.67 V, 5.32 V  
 3. 2.67 V, 5.32 V, 4 V, 8 V  
 4. 10 V, 5 V, 6.67 V, 3.33 V

Question ID : 7246223105

Chosen Option : 3

**Q.40** Which of the following statements is FALSE for a complex alternating wave which is periodic and have equal positive and negative cycles?

- Ans  1. The harmonic with the lowest frequency is called fundamental harmonic.  
 2. The two halves of the complex wave are identical when only even harmonics (2nd, 4th, 6th etc.) are present.  
 3. The two halves of the complex wave are identical in shape when only odd harmonic (3rd, 5th, 7th, 9th etc.) are present.  
 4. Frequency of the complex wave is the same as that of the first harmonic of that wave.

Question ID : 7246223101

Chosen Option : --

**Q.41** Which of the following power plants has minimum running cost?

- Ans  1. Hydro power plant  
 2. Thermal power plant  
 3. Nuclear power plant  
 4. Diesel power plant

Question ID : 7246223167

Chosen Option : 1

**Q.42** Which of the following electronic devices is used for stator voltage control in fan regulators?

- Ans  1. Triac  
 2. BJT  
 3. Mosfet  
 4. Diode

Question ID : 7246223152

Chosen Option : 1

**Q.43** A 3-phase system is called balanced, when it consists of:

- Ans  1. Zero and Negative sequence current only  
 2. Negative and positive sequence current only  
 3. Positive sequence current only  
 4. Zero sequence current only

Question ID : 7246223172

Chosen Option : 2

**Q.44** Let  $R_a, R_m, X_a, X_m$  be resistance of auxiliary winding, resistance of main winding, inductive reactance of auxiliary winding, and inductive reactance of main winding. Which of the following best represents relation between  $R_a, R_m, X_a, X_m$  for a split-phase induction motor?

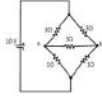
- Ans  1.  $\frac{R_a}{X_a} < \frac{R_m}{X_m}$   
 2.  $\frac{R_a}{X_a} = \frac{R_m}{X_m}$

Question ID : 7246223148

Chosen Option : --

- ✓ 3.  $\frac{R_a}{X_a} > \frac{R_m}{X_m}$
- ✗ 4.  $\frac{R_a}{X_a} = \frac{R_m}{X_m} = 1$

Q.45 For the given electrical circuit, determine the maximum power absorbed by 3 Ω resistor connected across terminal a and b.



- Ans ✓ 1. 0 W
- ✗ 2. 15 W
- ✗ 3. -15 W
- ✗ 4. 6 W

Question ID : 7246223111  
Chosen Option : 1

Q.46 Investigate the value of form factor of a voltage  $v = 250\sin(2\pi \times 50t)$

- Ans ✗ 1. 2.22
- ✗ 2. infinite
- ✗ 3. 0.45
- ✓ 4. 1.11

Question ID : 7246223112  
Chosen Option : 4

Q.47 A separately excited, 200 V, DC motor runs with a speed of 1500 rpm at no load current of 5 A. When operated at full load current is found to be 50 A. Assuming constant flux operation with armature resistance of 0.2 Ω, calculate full load speed.

- Ans ✗ 1. 1400 rpm
- ✗ 2. 1578 rpm
- ✓ 3. 1432 rpm
- ✗ 4. 1500 rpm

Question ID : 7246223125  
Chosen Option : 3

Q.48 Nature of resultant flux produced as a result of intersection of fluxes due to two windings placed 90° apart in space will be :

- Ans ✓ 1. Rotating flux of constant magnitude.
- ✗ 2. Rotating flux of varying magnitude
- ✗ 3. Zero resultant flux.
- ✗ 4. Such configuration is not possible.

Question ID : 7246223147  
Chosen Option : 1

Q.49 Projection welding is employed in:

- Ans ✓ 1. Stamped welds
- ✗ 2. Butt welds
- ✗ 3. Lap welds
- ✗ 4. End to end welds

Question ID : 7246223183  
Chosen Option : --

Q.50 A shunt generator running at 1000 rpm has generated emf as 200 V. If the speed increases to 1200 rpm, the generated emf will be nearly

- Ans ✗ 1. 150 V
- ✓ 2. 240 V
- ✗ 3. 175 V
- ✗ 4. 290 V

Question ID : 7246223122  
Chosen Option : 2

Q.51 Lightning arrester is also known as:

- Ans ✗ 1. Surge integrator
- ✗ 2. Surge creator
- ✓ 3. Surge diverter
- ✗ 4. Surge absorber

Question ID : 7246223163  
Chosen Option : 3

Q.52 Choose the INCORRECT statement regarding rotor construction in a 3-phase induction motor:

- Ans ✗ 1. Better speed control in wound type rotor.
- ✗ 2.
- Cage rotor requires lesser maintenance than wound type rotor.

Question ID : 7246223149  
Chosen Option : 4



3. Efficiency and power factor of cage motor is higher than wound type rotor.
4. Low starting torque in wound type rotor.

Q.53 What will be the voltage regulation of alternator, when it supplies leading pf load?

- Ans  1. It may be positive, negative or zero.
2. Positive
3. Zero
4. Negative

Question ID : 7246223144  
Chosen Option : 4

Q.54 In synchronous generator, pitch factor is \_\_\_\_\_.

- Ans  1. 2
2.  $>1$
3.  $<1$
4.  $=1$

Question ID : 7246223137  
Chosen Option : 3

Q.55 The emf induced in the armature of a shunt generator is 600V. The armature resistance is 0.1 ohm. If the armature current is 200A, the terminal voltage will be:

- Ans  1. 620 V
2. 640 V
3. 600 V
4. 580 V

Question ID : 7246223128  
Chosen Option : 4

Q.56 Parallax error is:

- Ans  1. Systematic error
2. Environmental error
3. Observational error
4. Random error

Question ID : 7246223119  
Chosen Option : 3

Q.57 Which one of these methods is used for measurement of low resistance?

- Ans  1. Loss of charge method
2. Kelvin's Double bridge circuit
3. Wheatstone bridge
4. Direct deflection method

Question ID : 7246223120  
Chosen Option : 2

Q.58 Synchroscope is used to check \_\_\_\_\_.

- Ans  1. Frequency difference
2. Phase angle difference.
3. Phase sequence
4. RMS voltage

Question ID : 7246223145  
Chosen Option : 1

Q.59 What will be the maximum sag if working tension is 4000 kg, resultant force per meter length of conductor is 2 and span length is 320 meter?

- Ans  1. 10.2
2. 6.4
3. 3.2
4. 9.6

Question ID : 7246223159  
Chosen Option : --

Q.60 The ratio of average load to maximum demand of a power station is known as:

- Ans  1. Demand Factor
2. Plant Capacity factor
3. Load Factor
4. Diversity factor

Question ID : 7246223179  
Chosen Option : 3

Q.61 In a hydroelectric power plant, water hammer phenomenon can be avoided by providing:

- Ans  1. surgetank

Question ID : 7246223157  
Chosen Option : --

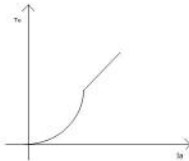
- 2. conduit
- 3. forbey
- 4. spillway

Q.62 Torque produced in shaded pole structure induction type relay is:

- Ans  1. Proportional to square of the current
- 2. Inversely proportional to square of the current
  - 3. Inversely proportional to current
  - 4. Proportional to current

Question ID : 7246223175  
Chosen Option : 1

Q.63 The electromagnetic torque (Te) Vs Armature current (Ia) characteristics of \_\_\_\_\_ machine is shown in below figure.



- Ans  1. DC Differential Compound motor
- 2. DC Cumulatively Compound motor
  - 3. DC Series motor
  - 4. DC Shunt generator

Question ID : 7246223129  
Chosen Option : 3

Q.64 What would be the magnitude and direction of average voltage induced across the field coils of a 6-pole DC generator each having 500 turns if there is a magnetic flux of 0.03 Wb/pole when the field is excited and residual magnetism of 0.003 Wb/pole after the field circuit is opened in 0.02 second? Consider the field coils to be connected in series.

- Ans  1. 24300 V and its direction is opposite to the initial direction of exciting current.
- 2. 486 V and its direction is opposite to the initial direction of exciting current.
  - 3. 486 V and its direction is same as the initial direction of exciting current.
  - 4. 24300 V and its direction is same as the initial direction of exciting current.

Question ID : 7246223102  
Chosen Option : --

Q.65 Which type of instrument is unaffected by frequency variations?

- Ans  1. Electrostatic Instruments
- 2. EMMC
  - 3. PMMC
  - 4. Moving Iron

Question ID : 7246223121  
Chosen Option : 1

Q.66 Frequency of induced voltages in 1-phase transformer is constant because \_\_\_\_\_.

- Ans  1. Leakage flux is less.
- 2. Depends upon number of poles.
  - 3. Relative motion between coils is present.
  - 4. There is no relative motion between coils.

Question ID : 7246223132  
Chosen Option : 4

Q.67 A CANDU (Canadian deuterium uranium) type reactor uses \_\_\_\_\_ as a moderator.

- Ans  1. heavy water
- 2. graphite
  - 3. ordinary water
  - 4. pressurized water

Question ID : 7246223158  
Chosen Option : 1

Q.68 The voltage applied to the electrodes for electroplating is in the range of:

- Ans  1. 24 V – 48 V AC
- 2. 24 V – 48 V DC
  - 3. 1 V – 6 V DC

Question ID : 7246223185  
Chosen Option : --

4. 1 V – 6 V AC

Q.69 What is the difference in the induced voltages of a 220 V separately excited DC machine having armature resistance of 1  $\Omega$  and full load current of 20 A, when the machine is running as a generator and as a motor?

Question ID : 7246223130

Chosen Option : 2

- Ans
- 1. 50 V
  - 2. 40 V
  - 3. 20 V
  - 4. 0 V

Q.70 A Thermal station has following data:

Question ID : 7246223169

Chosen Option : 2

Boiler efficiency = 75% Electrical Efficiency = 50%  
Turbine efficiency = 80%  
Calculate overall efficiency of the plant.

- Ans
- 1. 31%
  - 2. 30%
  - 3. 29%
  - 4. 35%

Q.71 What is the overall efficiency of steam power plant?

Question ID : 7246223168

Chosen Option : 2

- Ans
- 1. 59%
  - 2. 29%
  - 3. 69%
  - 4. 44%

Q.72 Consider a coil of 150 turns carrying a current of 10 A. If an induced electromotive force of 300 V is produced when this current is reversed in 0.01 second, then calculate the flux linked with the coil.

Question ID : 7246223109

Chosen Option : --

- Ans
- 1. 0.1 Wb
  - 2. 0.05 Wb
  - 3. 0.01 Wb
  - 4. 0.5 Wb

Q.73 Which of the following methods of electrical heating utilizes transformer principle?

Question ID : 7246223182

Chosen Option : 4

- Ans
- 1. Arc furnace
  - 2. Microwave heating
  - 3. Dielectric heating
  - 4. Induction furnace

Q.74 Synchronous condenser used for power factor improvement is synchronous motor which operates at:

Question ID : 7246223162

Chosen Option : 1

- Ans
- 1. no load with leading current
  - 2. full load with lagging current
  - 3. no load with lagging current
  - 4. full load with leading current

Q.75 The phenomenon of current chopping mainly occurs in which type of circuit breaker?

Question ID : 7246223174

Chosen Option : 1

- Ans
- 1. Vacuum circuit breaker
  - 2. Oil circuit breaker
  - 3. Air blast circuit breaker
  - 4. SF6 circuit breaker

Q.76 Line Current of a 500 V DC shunt motor is 52 A shunt field and armature resistance are 250  $\Omega$  and 0.5  $\Omega$  respectively. Determine the back e.m.f.

Question ID : 7246223123

Chosen Option : 1

- Ans
- 1. 475 V
  - 2. 450 V
  - 3. 500 V
  - 4. 448 V

Q.77

Question ID : 7246223164

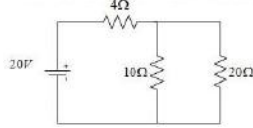
Chosen Option : --

For the protection of transformer using differential protection scheme, which of the following pair is true?

	Power Transformer	Current Transformer
Pair 1	Star-Delta	Star-Delta
Pair 2	Delta-Star	Delta-Star
Pair 3	Star-Delta	Delta-Star
Pair 4	Star-Star	Star-Star

- Ans
- 1. Pair 1
  - 2. Pair 4
  - 3. Pair 3
  - 4. Pair 2

Q.78 Consider the circuit shown below. Find the current flowing through 20 Ω resistor:



- Ans
- 1. 0.625
  - 2. 0
  - 3. 0.99
  - 4. 0.66

Question ID : 7246223104

Chosen Option : 1

Q.79 Voltage range for resistance grounding is:

- Ans
- 1. 33 kV to 66 kV
  - 2. 66 kV to 220 kV
  - 3. 3.3 kV to 11 kV
  - 4. Above 220 kV

Question ID : 7246223171

Chosen Option : --

Q.80 The direction of rotation in a shaded pole induction motor is:

- Ans
- 1. depends upon voltage
  - 2. from main pole to shaded pole
  - 3. from shaded pole to main pole
  - 4. depends on power factor

Question ID : 7246223155

Chosen Option : 2

Q.81 Which of the following power factor gives positive voltage regulation in transformer?

- Ans
- 1. Lagging.
  - 2. Unity.
  - 3. Leading.
  - 4. Unity and lagging.

Question ID : 7246223135

Chosen Option : 1

Q.82 In synchronous motor, nature of armature reaction is \_\_\_\_\_ when it draws a lagging power factor current.

- Ans
- 1. Demagnetizing.
  - 2. Cross-magnetizing.
  - 3. Partly demagnetizing and partly cross-magnetizing
  - 4. Partly magnetizing and partly cross-magnetizing

Question ID : 7246223140

Chosen Option : 3

Q.83 In synchronous motor, nature of armature reaction is \_\_\_\_\_ when it draws a leading power factor current.

- Ans
- 1. Partly demagnetizing and partly cross-magnetizing.
  - 2. Cross-magnetizing.
  - 3. Partly magnetizing and partly cross-magnetizing.
  - 4. Demagnetizing.

Question ID : 7246223141

Chosen Option : 3

Q.84 What is the RMS value of a sinusoidally alternating voltage if its maximum value is equal to 10 V?

- Ans
- 1. 14.14 V

Question ID : 7246223107

Chosen Option : 3

- 2. 1.414 V
- 3. 7.07 V
- 4. 0.707 V

Q.85 Consider a 500 volt d.c. shunt motor, when on load, running at 750 rpm with armature current of 100 A where armature resistance is 0.5 Ω. If the flux is reduced by 50% without changing the load torque then the new speed of motor is

- Ans
- 1. 666.6 rpm
  - 2. 333.3 rpm
  - 3. 2666.6 rpm
  - 4. 1333.3 rpm

Question ID : 7246223124  
Chosen Option : 1

Q.86 A voltage-controlled capacitance semiconductor device is usually operated in:

- Ans
- 1. unbiased mode
  - 2. forward biased mode
  - 3. reverse biased mode
  - 4. in the breakdown region

Question ID : 7246223114  
Chosen Option : 3

Q.87 Which of the following factors is always greater than unity?

- Ans
- 1. Load factor
  - 2. Diversity factor
  - 3. Demand factor
  - 4. Coincidence factor

Question ID : 7246223161  
Chosen Option : 2

Q.88 A generating station has maximum demand of 25 MW and average load on generating station is 15 MW. What will be the load factor?

- Ans
- 1. 0.2
  - 2. 1.66
  - 3. 0.6
  - 4. 0.8

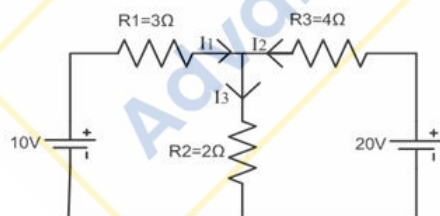
Question ID : 7246223170  
Chosen Option : 3

Q.89 From the following options, which is the primary function of fuse?

- Ans
- 1. Prevent flow of current through earth
  - 2. Prevent low currents to flow through the circuit
  - 3. Prevent excessive currents from flowing through the circuit
  - 4. Short the circuit

Question ID : 7246223173  
Chosen Option : 3

Q.90 Find the current  $I_3$ .



- Ans
- 1. 2.5 A
  - 2. 1.5 A
  - 3. 3.8 A
  - 4. 1 A

Question ID : 7246223116  
Chosen Option : 3

Section : General English

Q.1 Select the option which means the same as the given word/ group of words.

go about cautiously looking for a chance to get food (as wild animals do)

- Ans
- 1. slide
  - 2. prowl

Question ID : 7246223195  
Chosen Option : --

3. growl

4. wade

Q.2 Select the most appropriate option to fill in the blank.

Where did you have your early education? \_\_\_\_\_ the Delhi Public School.

Question ID : 7246223193

Chosen Option : 1

Ans  1. From

2. On

3. In

4. At

Q.3 Arrange the fragments given below to form a meaningful sentence.

- A. have for the most part
- B. people of Ethiopia
- C. lost touch with the peasantry
- D. who are trying to modernize their country

Question ID : 7246223200

Chosen Option : 2

Ans  1. BCAD

2. BADC

3. BDAC

4. BACD

Q.4 Select the most appropriate option to fill in the blank.

It was late, but since \_\_\_\_\_ moon was shining in the sky we could find our way in \_\_\_\_\_ forest.

Question ID : 7246223191

Chosen Option : 4

Ans  1. a ; the

2. no word needed ; the

3. the ; a

4. the ; the

Q.5 Select the most appropriate option to fill in the blank.

For the last two months, they \_\_\_\_\_ to decipher the writing on the walls of the ancient temples.

Question ID : 7246223192

Chosen Option : 1

Ans  1. tried

2. have been trying

3. try

4. had tried

Q.6 In the following sentences four words or phrases have been underlined. One of them is incorrect. Choose the incorrect word or phrase from the given options.

Although he is nearly forty, he cannot be called, by any means, a maturing person.

Question ID : 7246223198

Chosen Option : 1

Ans  1. a maturing person.

2. Although

3. by any means,

4. is nearly forty.

Q.7 Select the antonym of the given word.

REGULAR

Question ID : 7246223196

Chosen Option : 3

Ans  1. disregular

2. imregular

3. irregular

4. unregular

Q.8 Select the correct passive form of the given sentence.

People have been ignoring the role of women in national development for ages.

Question ID : 7246223199

Chosen Option : 4

Ans  1.

The national development in the role of women has been ignored for ages.

2.

The role of women in national development is being ignored for ages.

3.

The role of women in national development will be ignored for all ages to come.

✓ 4.

The role of women in national development has been ignored for ages.

Q.9 Select the most appropriate option to fill in the blank.

The guard found a key lying on the road of the colony. Shikha said it was \_\_\_\_\_.

- Ans ✓ 1. hers  
✗ 2. her  
✗ 3. us  
✗ 4. our

Question ID : 7246223194

Chosen Option : 2

Q.10 Select the correctly spelt word.

- Ans ✗ 1. remembrance  
✓ 2. remembrance  
✗ 3. remambrance  
✗ 4. remembrence

Question ID : 7246223197

Chosen Option : 2

Section : Quantitative Aptitude

Q.1 A, B and C are three partners in a business. B started the business and A joined him after 2 months with an investment which is 20% more than that of B. C joined them later. The investment of B is  $\frac{3}{4}$  of the investment of C. If in the annual profit, share in profit of C is  $\frac{1}{3}$  of the sum of shares of A and B, then for how long was C's investment in the business?

- Ans ✗ 1. 4 months  
✗ 2.  $4\frac{1}{2}$  months  
✓ 3. 6 months  
✗ 4. 5 months

Question ID : 7246223212

Chosen Option : --

Q.2 In an examination, 75% students passed from school A. The number of students appeared from school B is 20% more than that of A and the total number of students who passed the examination is 40% more than the number of students passed from A. What is the percentage of students passed to those who appeared from B?

- Ans ✗ 1. 70  
✓ 2. 87.5  
✗ 3. 62.5  
✗ 4. 65

Question ID : 7246223202

Chosen Option : --

Q.3 If  $5x^2 + y^2 + z^2 + 5 = 2x(y + 2) + 4z$ , then the value of  $(4x + 2y - z)$  is:

- Ans ✗ 1.  $\frac{1}{2}$   
✗ 2.  $-\frac{1}{2}$   
✓ 3. 1  
✗ 4. 0

Question ID : 7246223210

Chosen Option : --

Q.4 4 litre of a solution having 10% acid was mixed with 5 litre of a solution having 16% acid. Six litre of pure acid was then added to the resulting solution. The concentration of acid in the final solution is:

- Ans ✗ 1. 50%  
✗ 2. 54%  
✓ 3. 48%  
✗ 4. 60%

Question ID : 7246223211

Chosen Option : --

Q.5 A, B and C can do a work in 36, 72 and 54 days respectively. They started the work together but A left 8 days before the completion of the work and C left 12 days before the completion of the work. In how many days was the work completed?

- Ans ✗ 1. 20  
✗ 2. 21  
✓ 3. 24  
✗ 4. 25

Question ID : 7246223209

Chosen Option : --

Q.6 The percentage profit earned by selling an article for ₹ 2076 is equal to the percentage loss incurred by selling the same article for ₹ 1524. At what price should the article be sold to earn a profit of  $33\frac{1}{3}\%$ ?

- Ans ✗ 1. ₹ 2700  
✗ 2. ₹ 2500

Question ID : 7246223203

Chosen Option : --

- 3. ₹ 2400
- 4. ₹ 2860

**Q.7** Two trains  $x$  and  $y$  start at the same time,  $x$  from A to B and the other from B to A. After passing each other  $x$  and  $y$  take  $9\frac{1}{3}$  hours and  $4\frac{2}{3}$  hours respectively to reach their destinations. If the speed of  $y$  is 35 km/h, then what is the speed (in km/h) of  $x$ ?

- Ans**
- 1. 25
  - 2. 28
  - 3. 24
  - 4. 30

Question ID : 7246223208  
Chosen Option : 1

**Q.8** A, B and C enter into partnership by investing capitals in the ratio  $\frac{1}{2} : \frac{1}{3} : \frac{1}{4}$ . After 4 months, A withdraws 50% of his capital and after another 8 months, profit of ₹ 20240 is distributed between them. What is the difference between the shares of A and C in the profit?

- Ans**
- 1. ₹ 1920
  - 2. ₹ 1840
  - 3. ₹ 1980
  - 4. ₹ 1860

Question ID : 7246223207  
Chosen Option : --

**Q.9** If  $x^2 - 3x + 1 = 0$ , then the value of  $x^{10} + \frac{1}{x^{10}}$  is:

- Ans**
- 1. 14408
  - 2. 14642
  - 3. 14638
  - 4. 15127

Question ID : 7246223215  
Chosen Option : --

**Q.10** If Satya travels at 30 km/h, she is late by 20 minutes to her office, whereas if she travels at 45 km/h, she is early by 10 minutes. Then at what speed should she travel such that she is neither late nor early?

- Ans**
- 1.  $38\frac{4}{7}$  km/h
  - 2.  $38\frac{2}{7}$  km/h
  - 3. 36 km/h
  - 4. 40 km/h

Question ID : 7246223213  
Chosen Option : 1

**Q.11** The ratio of the number of boys in schools A and B is 5 : 7 and the ratio of the total number of students in A and B is 3 : 4. If the number of girls in B is equal to  $66\frac{2}{3}\%$  of the total students in B, then what is the ratio of the number of girls in A and B?

- Ans**
- 1. 43 : 46
  - 2. 8 : 11
  - 3. 43 : 56
  - 4. 33 : 56

Question ID : 7246223206  
Chosen Option : --

**Q.12** A certain sum amounts to ₹ 6352.50 in  $2\frac{1}{2}$  years at 10% p.a. compound interest, interest compounded yearly. What will be the simple interest on the same sum for double the time at the same rate of interest?

- Ans**
- 1. ₹ 2500
  - 2. ₹ 2400
  - 3. ₹ 2560
  - 4. ₹ 2480

Question ID : 7246223204  
Chosen Option : --

**Q.13** A and B can complete a work in 20 days whereas A and C can complete the same work in 30 days. C alone can complete the work in 40 days. A, B and C work together for 8 days. C alone will complete the remaining work in:

- Ans**
- 1. 16 days
  - 2. 10 days
  - 3. 12 days
  - 4. 24 days

Question ID : 7246223214  
Chosen Option : --

**Q.14** The value of  $\frac{3\sqrt{2}}{\sqrt{6}-\sqrt{3}} - \frac{4\sqrt{3}}{\sqrt{8}-\sqrt{12}} + \frac{3}{2(3-\sqrt{8})}$  is closet to:

- Ans**
- 1. 9
  - 2. 8.8
  - 3. 8
  - 4. 7.8

Question ID : 7246223205  
Chosen Option : --



Q.15 The sum of three consecutive odd numbers and three consecutive even numbers together is 471. Also, the largest even number is 15 more than the largest odd number. What is the sum of the smallest odd number and the smallest even number?

- Ans
- 1. 153
  - 2. 155
  - 3. 157
  - 4. 151

Question ID : 7246223201  
Chosen Option : --

Section : Logical Ability

Q.1 If table is called oven, oven is called knife, knife is called toaster and toaster is called fridge, which of these will be used to bake cakes?

- Ans
- 1. table
  - 2. toaster
  - 3. knife
  - 4. fridge

Question ID : 7246223223  
Chosen Option : 3

Q.2 Shama is Sumita's only sister. Sumita's husband's mother-in-law has a son, Shyam, whose daughter is Bhumika. How is Sumita's son Abhijeet related to Bhumika?

- Ans
- 1. Cousin
  - 2. Nephew
  - 3. Brother
  - 4. Brother-in-law

Question ID : 7246223225  
Chosen Option : 1

Q.3 What will appear in place of the blank in the following series?

4, 8, 16, 28, \_\_, 64

- Ans
- 1. 56
  - 2. 40
  - 3. 46
  - 4. 44

Question ID : 7246223221  
Chosen Option : 4

Q.4 If 'S' means 'addition', '@' means 'subtraction', '#' means 'multiplication' and 'C' means 'division', then  $56 \text{ C } 8 \# 3 \text{ S } 5 \text{ @ } 1 = ?$

- Ans
- 1. 21
  - 2. 25
  - 3. 34
  - 4. 26

Question ID : 7246223219  
Chosen Option : 2

Q.5 Select the option that is related to the third term in the same way as the second term is related to the first term.

Bunch : Keys :: Herd : ?

- Ans
- 1. Lions
  - 2. Birds
  - 3. Cattle
  - 4. Fish

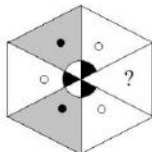
Question ID : 7246223216  
Chosen Option : 3

Q.6 Find the odd word out.

- Ans
- 1. Stone
  - 2. Brick
  - 3. Rock
  - 4. Pebble

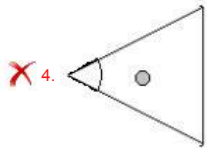
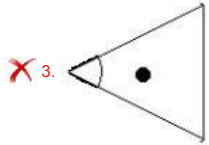
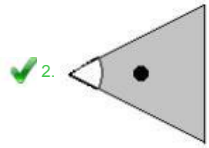
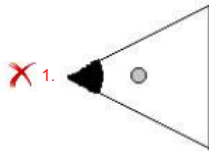
Question ID : 7246223218  
Chosen Option : 4

Q.7 Select the figure that correctly replaces the question mark '?' and completes the following image:



Ans

Question ID : 7246223220  
Chosen Option : 2



**Q.8** Jawed scored 23 marks in a class test. Shakeel scored 1 mark more than Jawed, but 1 mark less than Azhar. Siraj scored 4 marks more than Afab, and 2 marks less than Shakeel. Who scored the highest marks in the given test?

- Ans**
- 1. Shakeel
  - 2. Azhar
  - 3. Jawed
  - 4. Siraj

Question ID : 7246223222

Chosen Option : 2

**Q.9** Select the analogous pair of words from the given options.

Loyal : Devoted

- Ans**
- 1. Useful : Futile
  - 2. Careful : Reckless
  - 3. Diligent : Industrious
  - 4. Idle : Rustic

Question ID : 7246223217

Chosen Option : --

**Q.10** An address is given below which has been reproduced against the four alternatives. Of them, three have some mistakes or the other, while one is exactly the same. Select the option that is exactly the same as the given address.

Prof. Sanjay Mirigal,  
Reader's Line,  
Rose Avenue,  
NIET, Farrukhabad,  
Uttar Pradesh

- Ans**
- 1. Prof. Sanjay Mirigal,  
Reader's Line,  
Rose Avenue,  
NIET, Farrukhabad,  
Uttar Pradesh
  - 2. Prof. Sanjay Mirigal,  
Reader's Line,  
Roze Avennue,  
NETT, Farrukhabad,  
Uttar Pradesh
  - 3. Prof. Sanjay Mirigal,  
Readers Lane,  
Rose Avenue,  
NIET, Farrukhabad,  
Uttar Pardesh
  - 4. Prof. Sanjay Mrigal,  
Reader's Line,  
Rose Avenue,  
NIET, Farukhabad,  
Uttar Pradesh

Question ID : 7246223224

Chosen Option : 1

Section : General Awareness

Q.1 Select the plants which do not have roots, stems, and leaves.

- Ans
- 1. Algae
  - 2. Conifers
  - 3. Mosses
  - 4. Ferns

Question ID : 7246223236  
Chosen Option : 1

Q.2 A Portuguese explorer, Vasco da Gama, discovered sea route to India in:

- Ans
- 1. 1600
  - 2. 1498
  - 3. 1731
  - 4. 1444

Question ID : 7246223226  
Chosen Option : 1

Q.3 Which among the following stated that British India would remain under the administration of the company in trust for the Crown until Parliament should decide otherwise?

- Ans
- 1. Government of India Act 1833
  - 2. English Education Act 1835
  - 3. Government of India Act 1853
  - 4. Government of India Act 1821

Question ID : 7246223227  
Chosen Option : --

Q.4 In which of the following we find Myocytes cells?

- Ans
- 1. eye
  - 2. liver
  - 3. spleen
  - 4. heart

Question ID : 7246223237  
Chosen Option : --

Q.5 Who has been credited deservedly as Father of the Computer, who is also the world-renowned inventor of Differential Engine and Analytical Engine?

- Ans
- 1. John W. Backus
  - 2. Harold Abelson
  - 3. Vinton Cerf
  - 4. Charles Babbage

Question ID : 7246223238  
Chosen Option : --

Q.6 Chairman of the first planning commission of India was:

- Ans
- 1. Subhash Chandra Bose
  - 2. Narendra Sarkar
  - 3. Jawaharlal Nehru
  - 4. Mahatma Gandhi

Question ID : 7246223235  
Chosen Option : 3

Q.7 Which among the following is a Rabi crop?

- Ans
- 1. Bajra
  - 2. Jowar
  - 3. Tur
  - 4. Wheat

Question ID : 7246223228  
Chosen Option : --

Q.8 1/6 of the total number of members of the Legislative Council of a State is:

- Ans
- 1. nominated by the Governor
  - 2. nominated by the Chairman of the Legislative Council
  - 3. elected by the members of the Legislative Assembly
  - 4. elected by the advocates of the State

Question ID : 7246223232  
Chosen Option : 3

Q.9 Which of the following countries is the largest producer as well as consumer of pulses?

- Ans
- 1. China
  - 2. Pakistan

Question ID : 7246223233  
Chosen Option : --

- 3. India
- 4. Sri Lanka

Q.10 Which deity is worshipped in Ramanathaswamy temple, Rameshwaram in Tamil Nadu?

- Ans
- 1. Lord Krishna
  - 2. Lord Shiva
  - 3. Lord Rama
  - 4. Lord Ganesha

Question ID : 7246223240  
Chosen Option : --

Q.11 \_\_\_\_\_ of the members of the Rajya Sabha retire on the expiration of every second year.

- Ans
- 1. 1/4<sup>th</sup>
  - 2. 1/3<sup>rd</sup>
  - 3. 1/5<sup>th</sup>
  - 4. 1/6<sup>th</sup>

Question ID : 7246223230  
Chosen Option : 2

Q.12 Who is the author of the famous book 'Urvashi'?

- Ans
- 1. Ramdhari Singh Dinkar
  - 2. Suryakant Tripathi Nirala
  - 3. Mahadevi Varma
  - 4. Yashpal

Question ID : 7246223239  
Chosen Option : --

Q.13 Which of the following is correct?

- Ans
- 1. The President presides over a joint sitting of the two Houses of Parliament.
  - 2. The Prime Minister presides over a joint sitting of the two Houses of Parliament.
  - 3. The Chairman of the Rajya Sabha presides over a joint sitting of the two Houses of Parliament.
  - 4. The Speaker of the Lok Sabha presides over a joint sitting of the two Houses of Parliament.

Question ID : 7246223231  
Chosen Option : --

Q.14 Why was second green revolution launched by the government?

- Ans
- 1. To boost agricultural production with sustainable approach
  - 2. To boost exports of the economy
  - 3. To boost tertiary sector contribution
  - 4. To boost industrial production with sustainable approach

Question ID : 7246223234  
Chosen Option : --

Q.15 ISRO launched the first Indian satellite, Aryabhata, on 19th April \_\_\_\_\_.

- Ans
- 1. 1978
  - 2. 1981
  - 3. 1975
  - 4. 1972

Question ID : 7246223229  
Chosen Option : --