Section : **Electrical Engineering**

Q.1 If a differential charge dq is given a differential energy dw, the rise in potential of the charge is:

Question ID : **6698121077**
Status : **Answered**
Chosen Option : **4**

Ans

✗ 1. $I = \frac{dq}{dw}$

✗ 2. $\int dq$

✗ 3. $\int dw$

✓ 4. $v = \frac{dw}{dq}$

Q.2 At leading power factor, the armature flux in an alternator:

Question ID : **6698121113**
Status : **Answered**
Chosen Option : **2**

Ans

✗ 1. opposes the rotor flux

✓ 2. aids the rotor flux

✗ 3. has no influence on the rotor flux

✗ 4. distorts the rotor flux

Q.3 A lightning discharge between clouds during a thunderstorm is of 10 C. The time of the discharge is 10 ms. Determine the average lightning current.

Question ID : **6698121080**
Status : **Answered**
Chosen Option : **4**

Ans

✗ 1. 100 A

✗ 2. 10 A

✗ 3. 1 A

✓ 4. 1000 A

Q.4 The minimum number of diodes required in a centre-tap full-wave rectifier is:

Question ID : **6698121140**
Status : **Answered**
Chosen Option : **4**

Ans

✗ 1. 3

✗ 2. 1

✗ 3. 4

✓ 4. 2

Q.5 The SI unit for energy is:

Question ID : **6698121075**

Ans
1. Volt
2. Watt
3. Joule
4. Ampere

Status : **Answered**
Chosen Option : **3**

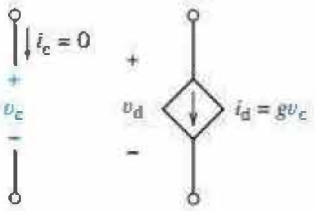
Q.6 Forbidden energy gap in an atom is the gap between the:

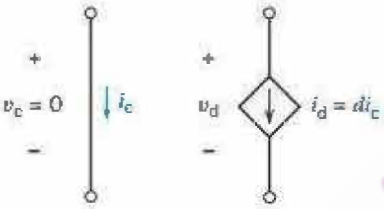
Question ID : **6698121069**
Status : **Answered**
Chosen Option : **2**

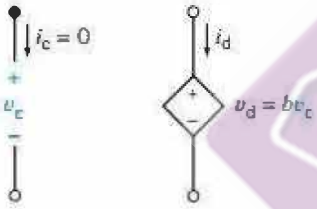
Ans
1. 2^{nd} and valence band
2. valence band and conduction band
3. 1^{st} and 2^{nd} band
4. 1^{st} and valence band

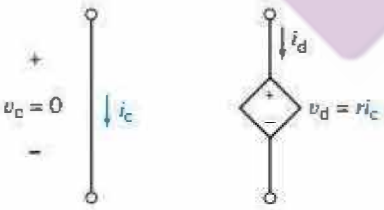
Q.7 Which of the following is the current-controlled voltage source?

Question ID : **6698121032**
Status : **Answered**
Chosen Option : **2**

Ans
1. 

2. 

3. 

4. 

Q.8 Which type of instrument is NOT directly applicable to measure the quantity of an AC current?

Question ID : **6698121046**
Status : **Answered**
Chosen Option : **3**

Ans
1. Hot-wire type
2. Moving iron type
3. Permanent magnet moving coil type
4. Induction type

Q.9 The free-running speed of a train does NOT depend on:

Question ID : **6698121064**
Status : **Answered**
Chosen Option : **3**

Ans
1. running time
2. distance between stops

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✔ 3. duration of stops

✘ 4. acceleration

Q.10 If an energy meter disc makes 10 revolutions in 10 minutes when a load of 600 W is connected to it, the meter constant in rev/kWh is:

Question ID : **6698121105**
Status : **Answered**
Chosen Option : **2**

Ans

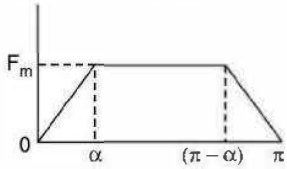
✔ 1. 100

✘ 2. 600

✘ 3. 800

✘ 4. 200

Q.11 Select the option that will give the average value of the following waveform:



Question ID : **6698121098**
Status : **Not Answered**
Chosen Option : **--**

Ans

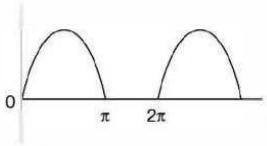
✘ 1. $\frac{\pi - 2\alpha}{\pi} F_m$

✘ 2. $\frac{\pi + \alpha}{\pi} F_m$

✘ 3. F_m/π

✔ 4. $\frac{\pi - \alpha}{\pi} F_m$

Q.12 If V_m is the maximum voltage, then the average voltage of the waveform will be given by:



Question ID : **6698121095**
Status : **Answered**
Chosen Option : **3**

Ans

✘ 1. $V_m/2$

✘ 2. $2V_m/\pi$

✔ 3. V_m/π

✘ 4. $\frac{V_m}{2\pi}$

Q.13 Round-the-clock power supply is required for:

Question ID : **6698121134**
Status : **Answered**
Chosen Option : **1**

Ans

✘ 1. shift-based industries

✘ 2. commercial organisations

✘ 3. agricultural use

✔ 4. essential services

Q.14 Under normal running conditions, the damper winding in an alternator:

Question ID : **6698121053**
Status : **Answered**
Chosen Option : **1**

Ans

✘ 1. carries a load current

✔ 2. does not carry any current

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✗ 3.
carries a generated voltage that is supplied at the terminal of the alternator

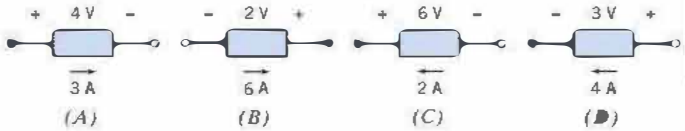
✗ 4.
produces a current opposite to the load current

Q.15 The relation between B and H in a magnetic circuit is given as:

Question ID : **6698121146**
Status : **Answered**
Chosen Option : **1**

Ans
✓ 1. $B = \mu H$
✗ 2. $B = \mu_r H$
✗ 3. $B = \frac{H}{\mu}$
✗ 4. $H = \mu_r B$

Q.16 Which of the following devices supplies 12 W?



Question ID : **6698121033**
Status : **Answered**
Chosen Option : **2**

Ans
✗ 1. A, C
✓ 2. B, C
✗ 3. A, B
✗ 4. C, D

Q.17 Which power plant requires highest initial cost and minimum cost of fuel transportation?

Question ID : **6698121123**
Status : **Answered**
Chosen Option : **3**

Ans
✗ 1. Diesel power plant
✗ 2. Steam power plant
✓ 3. Nuclear power plant
✗ 4. Hydro-electric power plant

Q.18 A device stores 500 J of energy. It releases this energy in the form of an electric current of 40 A, which has a duration of 5 ms. Determine the average voltage across the terminals of the device.

Question ID : **6698121081**
Status : **Answered**
Chosen Option : **1**

Ans
✓ 1. 2500 V
✗ 2. 250 V
✗ 3. 25 V
✗ 4. 2.5 V

Q.19 50 Hz, 230 V is applied to a full-wave rectifier. Its output frequency is:

Question ID : **6698121139**
Status : **Answered**
Chosen Option : **1**

Ans
✗ 1. 50 Hz
✓ 2. 100 Hz
✗ 3. 25 Hz
✗ 4. 50 rad/s

Q.20 Hysteresis loss and eddy current loss are used in:

Question ID : **6698121068**
Status : **Answered**
Chosen Option : **4**

Ans
✗ 1. induction heating of brass

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✔ 2. induction heating of steel

✘ 3. dielectric heating

✘ 4. resistance heating

Q.21 Find the power $p(t)$, supplied by the element when $v(t) = 4\cos 3t$ V and $i(t) = \frac{1}{12}\sin 3t$ A.

Question ID : **6698121034**
Status : **Not Answered**
Chosen Option : **--**

Ans

✘ 1. $p(t) = \frac{1}{6}\cos 6t$ W

✘ 2. $p(t) = \frac{1}{6}\sin 3t$ W

✘ 3. $p(t) = \frac{1}{12}\sin 6t$ W

✔ 4. $p(t) = \frac{1}{6}\sin 6t$ W

Q.22 Why is a synchronous machine called a doubly-excited machine?

Question ID : **6698121114**
Status : **Answered**
Chosen Option : **1**

Ans

✔ 1. Both its rotor and stator are excited.

✘ 2. It has two sets of rotor poles.

✘ 3. It can be overexcited.

✘ 4. It needs twice the normal exciting current.

Q.23 The SI unit for illuminance is:

Question ID : **6698121076**
Status : **Answered**
Chosen Option : **3**

Ans

✔ 1. Lux

✘ 2. Weber

✘ 3. Lumen

✘ 4. Tesla

Q.24 Determine the resistance of a 1 km strip of copper of rectangular cross-section 2.5 cm by 0.05 cm. Assume ρ is the resistivity of the copper.

Question ID : **6698121082**
Status : **Marked For Review**
Chosen Option : **2**

Ans

✔ 1. $80 \times \rho$ M Ω

✘ 2. $80 \times \rho$ m Ω

✘ 3. $80 \times \rho$ Ω

✘ 4. $8 \times \rho$ M Ω

Q.25 In case of DC generators, the critical resistance is equal to the resistance of the:

Question ID : **6698121110**
Status : **Answered**
Chosen Option : **3**

Ans

✘ 1. load

✘ 2. armature

✔ 3. field

✘ 4. brushes

Q.26 The most efficient form of damping employed in electrical measuring instruments is:

Question ID : **6698121103**
Status : **Answered**
Chosen Option : **2**

Ans

✘ 1. fluid friction

✔ 2. eddy currents

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✗ 3. sliding friction

✗ 4. air friction

Q.27 A silicon diode has a forward voltage drop of 1.2 V for a forward DC current of 100 mA. It has a reverse current of 1 μA for a reverse voltage of 10 V. Calculate reverse resistance of the diode.

Question ID : **6698121070**
Status : **Not Answered**
Chosen Option : **--**

Ans

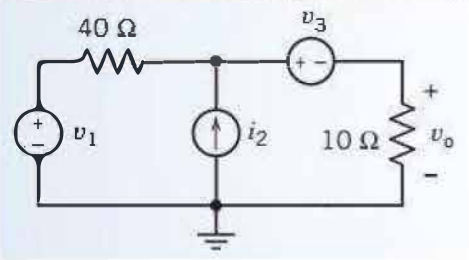
✗ 1. $25\ M\Omega$

✗ 2. $20\ M\Omega$

✗ 3. $5M\Omega$

✓ 4. $10\ M\Omega$

Q.28 Obtain v_o for the given network in terms of v_1, i_2 & v_3.



Question ID : **6698121088**
Status : **Not Answered**
Chosen Option : **--**

Ans

✗ 1. $v_0 = 0.2\,v_1 + 8\,i_2 + 0.2\,v_3$

✗ 2. $v_0 = 0.2\,v_1 - 8\,i_2 + 0.2\,v_3$

✓ 3. $v_0 = 0.2\,v_1 + 8\,i_2 - 0.2\,v_3$

✗ 4. $v_0 = 0.2\,v_1 - 8\,i_2 - 0.2\,v_3$

Q.29 In a 3-phase system, equal fault currents in the lines with 120° displacement are caused by:

Question ID : **6698121059**
Status : **Answered**
Chosen Option : **2**

Ans

✗ 1. single line-to-ground fault

✓ 2. symmetrical faults

✗ 3. unsymmetrical faults

✗ 4. unbalanced load

Q.30 When the rate of electrical energy is charged on the basis of maximum demand of the consumer and the units consumed, it is called:

Question ID : **6698121126**
Status : **Answered**
Chosen Option : **4**

Ans

✗ 1. simple tariff

✗ 2. block-rate tariff

✓ 3. two-part tariff

✗ 4. flat-rate tariff

Q.31 The time rate of flow of electric charge past a given point is known as:

Question ID : **6698121027**
Status : **Marked For Review**
Chosen Option : **4**

Ans

✗ 1. voltage

✗ 2. net charge storage

✗ 3. charge density

✓ 4. current

Q.32 A wave winding must go at least _____ around the armature before it closes back where it started.

Question ID : **6698121106**
Status : **Answered**

Ans

✗ 1. four times

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2. thrice
3. twice
4. once

Chosen Option : 3

Q.33 The travelling speed of cranes varies from:

Ans
1. 5 to 10 m/s
2. 20 to 30 m/s
3. 1 to 2.5 m/s
4. 10 to 15 m/s

Question ID : **6698121138**
Status : **Answered**
Chosen Option : **1**

Q.34 If the load angle of a 4-pole synchronous motor is 8° (elect), its value in mechanical degrees is:

Ans
1. 0.25
2. 4
3. 2
4. 0.5

Question ID : **6698121117**
Status : **Answered**
Chosen Option : **2**

Q.35 A reciprocating pump, which is required to start under load, will need a:

Ans
1. synchronous motor
2. squirrel-cage induction motor
3. repulsion motor
4. double squirrel-cage induction motor

Question ID : **6698121066**
Status : **Answered**
Chosen Option : **2**

Q.36 A series RLC circuit has a resonance frequency of 175 kHz and Q = 50. Find the bandwidth of the circuit.

Ans
1. 50 Hz
2. 350 Hz
3. 35 kHz
4. 3.5 kHz

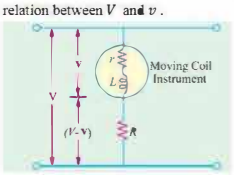
Question ID : **6698121097**
Status : **Answered**
Chosen Option : **4**

Q.37 Two-part tariff is based on:

Ans
1. a fixed charge proportional to the maximum demand
2. sliding scale
3. fixed charge on the actual number of units used
4. fixed charge proportional to the maximum demand and a low running charge proportional to the actual number of units used

Question ID : **6698121057**
Status : **Answered**
Chosen Option : **4**

Q.38 The measuring range of a voltmeter is expected to increase by the method shown in the following diagram. Find the relation between V and v.



Ans

Question ID : **6698121049**
Status : **Answered**
Chosen Option : **1**

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1. $\frac{V}{v}=\left(1+\frac{R}{r}\right)$

2. $\frac{V}{v}=\left(1+\frac{r}{R}\right)$

3. $\frac{V}{v}=\left(1-\frac{R}{r}\right)$

4. $V=\frac{R}{r}v$

Q.39 Which of the following methods is a conventional method of electrical energy generation?

Question ID : **6698121058**
Status : **Answered**
Chosen Option : **4**

Ans

1. Photovoltaic cells
2. Fuel cells
3. Wind power plant
4. Thermal power plant

Q.40 The ratio of the intensity of magnetisation to the magnetising force is defined as:

Question ID : **6698121038**
Status : **Answered**
Chosen Option : **2**

Ans

1. permeability
2. susceptibility
3. inductance
4. conductivity

Q.41 If n resistors with R Ω each as resistance are connected in parallel, then the equivalent resistance of the network is:

Question ID : **6698121085**
Status : **Answered**
Chosen Option : **1**

Ans

1. $\frac{R}{n}$ Ω
2. R^n Ω
3. $\frac{n}{R}$ Ω
4. $n \times R$ Ω

Q.42 How will you extend the range of measurement in case of an ammeter and voltmeter?

Question ID : **6698121047**
Status : **Answered**
Chosen Option : **4**

Ans

1. Shunt a resistance across voltmeter and inductance in series with the ammeter
2. Shunt a resistance across the ammeter and capacitance with zero resistance in series with the voltmeter
3. Shunt a resistance across the ammeter and inductance in series with the voltmeter
4. Shunt a resistance across the ammeter and high non-inductive resistance in series with the voltmeter

Q.43 If the rms value and average value of half-wave-rectified alternating current are $\frac{I_m}{2}$ and $\frac{I_m}{\pi}$ respectively, then the form factor of the half-wave rectified current will be given as:

Question ID : **6698121044**
Status : **Answered**
Chosen Option : **3**

Ans

1. $\frac{2}{\pi}$
2. 2π
3. $\frac{\pi}{2}$

✗ 4. π^2

Q.44 What is the required illumination level for important shopping centres and road junctions?

Question ID : **6698121061**
Status : **Answered**
Chosen Option : **2**

Ans
✗ 1. 20 lm/m^2
✓ 2. 30 lm/m^2
✗ 3. 10 lm/m^2
✗ 4. 4 lm/m^2

Q.45 The equation for a voltage wave is $v = 0.02\sin(2\pi t + 30°)$ V. Find the frequency.

Question ID : **6698121094**
Status : **Answered**
Chosen Option : **4**

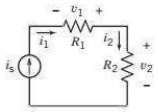
Ans
✓ 1. 1 Hz
✗ 2. 2π Hz
✗ 3. 50 Hz
✗ 4. 1 rad/s

Q.46 The battery of a flashlight develops 3V, and the current through the bulb is 200 mA. Calculate the energy absorbed by the bulb in a five-minute period.

Question ID : **6698121031**
Status : **Answered**
Chosen Option : **4**

Ans
✗ 1. 50 unit
✗ 2. 50 W·h
✗ 3. 60 W·h
✓ 4. 50 mW·h

Q.47 Find the values of v_1 and v_2 in the given circuit, if $i_s = 25\,mA$, $R_1 = 4\,\Omega$ and $R_2 = 8\,\Omega$



Question ID : **6698121145**
Status : **Not Answered**
Chosen Option : **--**

Ans
✗ 1. $v_1 = 0.1$ V and $v_2 = -0.2\,V$
✓ 2. $v_1 = -0.1$ V and $v_2 = 0.2\,V$
✗ 3. $v_1 = 0.1$ V and $v_2 = 0.2\,V$
✗ 4. $v_1 = 0.2$ V and $v_2 = 0.4\,V$

Q.48 The voltage applied to a purely inductive coil of self-inductance $5/\pi$ mH is given by the equation $v = 100\sin(100\pi t) + 75\sin(500\pi t)$ V. Find the equation of the resulting current wave.

Question ID : **6698121100**
Status : **Not Answered**
Chosen Option : **--**

Ans
✗ 1.
$i = 200\sin(100\pi t + \pi) + 30\sin(500\pi t + \pi)$ A
✗ 2.
$i = 200\sin(100\pi t - \pi) + 30\sin(500\pi t - \pi)$ A
✓ 3.
$i = 200\sin\left(100\pi t - \frac{\pi}{2}\right) + 30\sin\left(500\pi t - \frac{\pi}{2}\right)$ A
✗ 4.
$i = 200\sin\left(100\pi t + \frac{\pi}{2}\right) + 30\sin\left(500\pi t + \frac{\pi}{2}\right)$ A

Q.49 The voltage regulation of an alternator having 0.75 leading power factor load, no-load induced emf of 2,400 V and rated terminal voltage of 3,000 V is:

Question ID : **6698121118**
Status : **Answered**

Ans
✗ 1. 150 %

2. $-30\ \%$

3. $-20\ \%$

4. $20\ \%$

Chosen Option : **3**

Q.50 Which of the following methods is NOT used as damping torque in measuring instruments?

Ans

1. Air frictions
2. Eddy currents
3. Gravity control
4. Fluid friction

Question ID : **6698121045**
Status : **Answered**
Chosen Option : **3**

Q.51 An electric motor operating from 220 V supply takes a current of 8 A. The motor has an efficiency of 80%. Determine the output of the motor.

Ans

1. 1450 W
2. 1408 W
3. 1200 W
4. 1500 W

Question ID : **6698121111**
Status : **Answered**
Chosen Option : **2**

Q.52 By using bundle conductors, what will be the effect on the critical voltage required for the formation of corona?

Ans

1. It will increase
2. It will decrease
3. Cannot be determined
4. It will remain the same

Question ID : **6698121136**
Status : **Answered**
Chosen Option : **1**

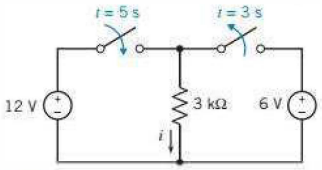
Q.53 The kVA rating of an ordinary 2-winding transformer is increased when connected as an autotransformer because:

Ans

1. energy is transferred both inductively and conductivity
2. transformation ratio is increased
3. secondary current is increased
4. secondary voltage is increased

Question ID : **6698121109**
Status : **Answered**
Chosen Option : **1**

Q.54 What is the value of the current i in the given network at time $t = 6\ s$?



Ans

1. 2 mA
2. 4 mA
3. 2 A
4. 4 A

Question ID : **6698121036**
Status : **Not Answered**
Chosen Option : **--**

Q.55 Let dq be the differential charge, dw be the differential energy. The rate of change of energy with time is given as:

Ans

1. $\frac{dw}{dq} \times \frac{dq}{dt}$

Question ID : **6698121078**
Status : **Answered**
Chosen Option : **1**

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2. $\frac{dw}{dq}+\frac{dq}{dt}$

3. $\frac{dw}{dq}/\frac{dq}{dt}$

4. $\frac{dq}{dw}\times\frac{dq}{dt}$

Q.56 Total/internal characteristic of DC generators is described as:

Question ID : **6698121051**
Status : **Answered**
Chosen Option : **4**

Ans

1. the relation between the emf and the field current
2. the relation between the terminal voltage and the armature current
3. the relation between the on-load generated emf and the armature current
4. the relation between the terminal voltage and field current

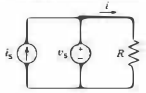
Q.57 A wire of length 50 cm moves at right angles to its length at 50 m/s in a uniform magnetic field of density 1 Wb/m^2. Determine the emf induced in the conductor when the direction of motion is perpendicular to the field.

Question ID : **6698121092**
Status : **Answered**
Chosen Option : **1**

Ans

1. 250 V
2. 25 V
3. 15 V
4. 2.5 V

Q.58 Calculate the current i in the resistor of the given network when $v_s = 15$ V, $i_s = 3$ A, and $R = 5\ \Omega$.



Question ID : **6698121037**
Status : **Answered**
Chosen Option : **2**

Ans

1. 2 A
2. 3 A
3. 4 A
4. 5 A

Q.59 Which of the following motors is preferred for driving compressors, variable-head centrifugal pumps, rotary presses, circular saws and elevators?

Question ID : **6698121065**
Status : **Answered**
Chosen Option : **3**

Ans

1. DC series motor
2. 3-phase synchronous motor
3. DC cumulative compound motor
4. DC shunt motor

Q.60 The maximum demand of a consumer is 4.4 kW and his total energy consumption is 8,760 kW·h. If the energy is charged at the rate of 20 paise per unit for 500 hours use of the maximum demand per annum plus 10 paise per unit for additional units, calculate the annual bill.

Question ID : **6698121130**
Status : **Not Answered**
Chosen Option : **--**

Ans

1. ₹ 10,060
2. ₹ 1000
3. ₹ 96
4. ₹ 1096

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Q.61 Given the current i and voltage v of a circuit element, the power p and energy w are given by:

Question ID : **6698121030**
Status : **Answered**
Chosen Option : **3**

Ans

✗ 1. $p = \int_0^t p d\tau$ and $w = v.i.t$

✗ 2. $p = v.i.t$ and $w = \int_0^t p d\tau$

✓ 3. $p = v.i$ and $w = \int_0^t p d\tau$

✗ 4. $p = \int_0^t p d\tau$ and $w = v.i$

Q.62 When a given block of energy is charged at a specified rate and the succeeding blocks of energy are charged at progressively reduced rates, it is called:

Question ID : **6698121128**
Status : **Answered**
Chosen Option : **4**

Ans

✗ 1. Maximum demand tariff

✗ 2. Two-part tariff

✗ 3. Power factor tariff

✓ 4. Block rate tariff

Q.63 If V_1 and V_3 are the rms values of the fundamental and third harmonics of an alternating quantity, then the rms value of the alternating quantity is given as:

Question ID : **6698121043**
Status : **Not Answered**
Chosen Option : **--**

Ans

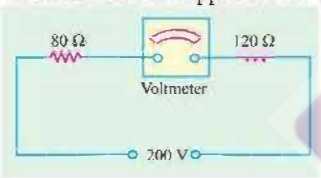
✓ 1. $\sqrt{V_1^2 + V_3^2}$

✗ 2. V_1/V_3

✗ 3. $V_1 + V_3$

✗ 4. $V_1 - V_3$

Q.64 What could be the approximate voltmeter reading for the given circuit?



Question ID : **6698121102**
Status : **Answered**
Chosen Option : **1**

Ans

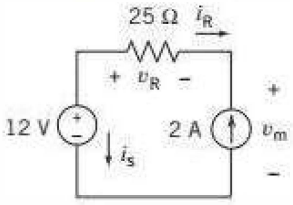
✓ 1. 200

✗ 2. 120

✗ 3. 80

✗ 4. 0

Q.65 Find the value of v_R in the given network.



Question ID : **6698121143**
Status : **Not Answered**
Chosen Option : **--**

Ans

✗ 1. 12 V

✗ 2. −12 V

✓ 3. −50 V

✗ 4. 50 V

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Q.66 The force experienced by the charge dq, due to a charge Q in a space, at distance r, is given as:

Question ID : **6698121079**
Status : **Answered**
Chosen Option : **1**

Ans

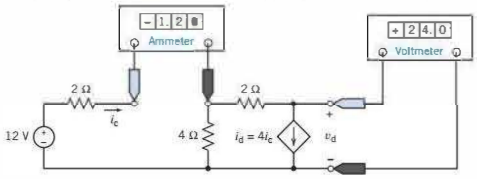
✗ 1. $\frac{Q\,dq}{4\pi\epsilon_o r}\overline{a_r}$

✗ 2. $\frac{Q\,dq}{\epsilon_o r^3}\overline{a_r}$

✗ 3. $\frac{Q\,dq}{4\pi\epsilon_o}\overline{a_r}$

✓ 4. $\frac{Q\,dq}{4\pi\epsilon_o r^2}\overline{a_r}$

Q.67 Find the power absorbed by the current-controlled current source (CCCS) in the given network.



Question ID : **6698121035**
Status : **Not Answered**
Chosen Option : **--**

Ans

✓ 1. -115.2 W

✗ 2. 115. 2 W

✗ 3. -24 W

✗ 4. 24 W

Q.68 Which part of the electrical machine provides mechanical support to the poles and path for magnetic flux?

Question ID : **6698121050**
Status : **Answered**
Chosen Option : **3**

Ans

✗ 1. Armature conductor

✗ 2. Filed winding

✓ 3. Yoke

✗ 4. Brushes

Q.69 If f is the operating current frequency of a magnetic circuit with a ferromagnetic core, then the hysteresis loss will be:

Question ID : **6698121090**
Status : **Answered**
Chosen Option : **1**

Ans

✓ 1. $\propto f$

✗ 2. $\propto f^2$

✗ 3. $\propto \frac{1}{f^2}$

✗ 4. $\propto \frac{1}{f}$

Q.70 If the co-efficient of adhesion on dry rails is 0.26, which of the following could be the value for wet rails?

Question ID : **6698121137**
Status : **Answered**
Chosen Option : **4**

Ans

✓ 1. 0.16

✗ 2. 0.3

✗ 3. 0.26

✗ 4. 0.275

Q.71 As load power factor of an alternator becomes more leading, the value of generated voltage required to give rated terminal voltage:

Question ID : **6698121115**
Status : **Answered**

Ans

✗ 1. remains unchanged

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Chosen Option : **4**

2. increases
3. varies with rotor speed
4. decreases ✔

Q.72 The total flux at the end of a long bar magnet is 300 μWb. The end of the magnet is withdrawn through a 500 turn coil in 1/10 of a second. What is the emf generated across the terminals of the coil?

Question ID : **6698121093**
Status : **Not Answered**
Chosen Option : **--**

Ans
1. 1.5 V ✔
2. 15 V
3. 3 V
4. 5 V

Q.73 Net energy saved during regenerative braking of an electric train:

Question ID : **6698121067**
Status : **Answered**
Chosen Option : **2**

Ans
1. increases with an increase in specific resistance
2. is independent of the train weight
3. is high with a high down gradient ✔
4. decreases with reduction in train speed due to braking

Q.74 Determine the conductance of a short circuit on 120 V, which results in a short circuit current of 500 A?

Question ID : **6698121087**
Status : **Answered**
Chosen Option : **3**

Ans
1. 20 S
2. 41.6 S
3. 4.16 S ✔
4. 2.16 S

Q.75 Which of the following motors is preferred as a traction motor for electric trains?

Question ID : **6698121063**
Status : **Answered**
Chosen Option : **4**

Ans
1. DC shunt motor
2. DC compound motor
3. Synchronous motor
4. DC series motor ✔

Q.76 The ratio of rms value of a wave and the average value of the wave is defined as:

Question ID : **6698121096**
Status : **Answered**
Chosen Option : **3**

Ans
1. crest factor
2. peak factor
3. form factor ✔
4. load factor

Q.77 The distribution factor for a 36-slots, 4-pole, single layer, 3-phase winding machine is given as:

Question ID : **6698121054**
Status : **Answered**
Chosen Option : **4**

Ans
1. $\frac{\sin 30^\circ}{\sin 10^\circ}$
2. $\frac{\sin 30^\circ}{3 \sin 60^\circ}$

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✗ 3. $\frac{\sin 10^\circ}{3\sin 30^\circ}$

✓ 4. $\frac{\sin 30^\circ}{3\sin 10^\circ}$

Q.78 When the load on a synchronous motor running with normal excitation is increased, armature current drawn by it increases because:

Question ID : **6698121116**
Status : **Answered**
Chosen Option : **2**

Ans

✗ 1. back emf becomes less than applied voltage V

✓ 2. net resultant voltage in the armature is increased

✗ 3. power factor is decreased

✗ 4. motor speed is reduced

Q.79 Which law states that the induced current always develops a flux which opposes the very cause it is due to?

Question ID : **6698121089**
Status : **Answered**
Chosen Option : **2**

Ans

✗ 1. Faraday's laws of electromagnetic induction

✓ 2. Lenz's law

✗ 3. Kirchhoff's Current Law (KCL)

✗ 4. Kirchhoff's Voltage Law (KVL)

Q.80 Let the voltage and current in an element be $V(\omega) = V_m\angle\theta_V$ and $I(\omega) = I_m\angle\theta_I$. The complex power delivered to the element is defined as:

Question ID : **6698121040**
Status : **Answered**
Chosen Option : **1**

Ans

✓ 1. $S = \frac{V_m I_m}{2}\angle(\theta_V - \theta_I)$

✗ 2. $S = V_m I_m \angle(\theta_V - \theta_I)$

✗ 3. $S = V_m I_m^*$

✗ 4. $S = \frac{V_m I_m}{2}\angle(\theta_I - \theta_V)$

Q.81 Under no-load condition, the power drawn by the prime mover of an alternator is utilised to:

Question ID : **6698121119**
Status : **Answered**
Chosen Option : **1**

Ans

✓ 1. meet no-load losses

✗ 2. meet copper losses both in armature and rotor windings

✗ 3. produce power in the armature

✗ 4. produce induced emf in the armature winding

Q.82 Which of the following elements has the least resistivity?

Question ID : **6698121028**
Status : **Answered**
Chosen Option : **4**

Ans

✗ 1. Polystyrene

✗ 2. Carbon

✗ 3. Silicon

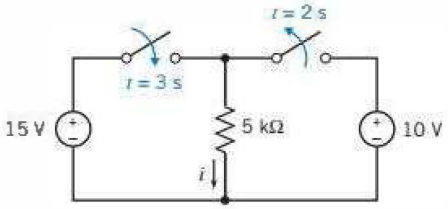
✓ 4. Copper

Q.83 Diffusion capacitance is present in:

Question ID : **6698121071**
Status : **Answered**
Chosen Option : **4**

Ans
1. ✗ unbiased p-n diode
2. ✗ reverse-biased zener diode
3. ✓ forward-biased p-n diode
4. ✗ reverse-biased p-n diode

Q.84 Determine the current i at $t = 1s$ for the given network.



Question ID : **6698121142**
Status : **Not Answered**
Chosen Option : **--**

Ans
1. ✗ 3 A
2. ✓ 2 mA
3. ✗ 1 A
4. ✗ 4 A

Q.85 Average and rms values of induced emf per turn in a transformer are given as:

Question ID : **6698121052**
Status : **Answered**
Chosen Option : **1**

Ans
1. ✓ $4 f \Phi_m$ V and $4.44 f \Phi_m$ V respectively
2. ✗ $4 f \Phi_m$ V and $\pi f \Phi_m$ V respectively
3. ✗ $4 f \Phi_m$ V and $4 \pi f \Phi_m$ V respectively
4. ✗ $4 f B_m$ V and $4.44 f B_m$ V respectively

Q.86 Solid grounding is adopted for voltages below:

Question ID : **6698121133**
Status : **Not Answered**
Chosen Option : **--**

Ans
1. ✗ 200 V
2. ✓ 660 V
3. ✗ 100 V
4. ✗ 400 V

Q.87 According to Ampere's law, the relationship between the force between two parallel conductors, carrying a average voltage of the wave average voltage of the wave current of I_1 and I_2 and displaced with a distance of r for a section of length l, is given by:

Question ID : **6698121091**
Status : **Answered**
Chosen Option : **1**

Ans
1. ✗ $F \propto \frac{I_1 I_2 l}{r^2}$
2. ✗ $F \propto \frac{I_1 I_2 l^2}{r}$
3. ✓ $F \propto \frac{I_1 I_2 l}{r}$
4. ✗ $F \propto \frac{I_1 I_2}{r}$

Q.88 If the time taken by an alternating quantity to complete one cycle is 2 ms, then the frequency of the alternating quantity will be:

Question ID : **6698121041**

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Ans
1. 5 Hz
2. 500 Hz
3. 50 Hz
4. 5 kHz

Status : **Answered**
Chosen Option : **2**

Q.89 Which of the following devices converts light energy into electrical energy?

Ans
1. Phototransistor
2. Photovoltaic cell
3. LED
4. Photoresistor

Question ID : **6698121072**
Status : **Answered**
Chosen Option : **2**

Q.90 What is the current through an element if the charge entering the element is $q = 10t$ C?

Ans
1. $5t^2$ A
2. $1t^2$ A
3. $10t^2$ A
4. 10 A

Question ID : **6698121029**
Status : **Answered**
Chosen Option : **4**

Q.91 In case of DC generators, lap winding is suitable for:

Ans
1. high current and low voltage ratings
2. low current and low voltage ratings
3. high current and high voltage ratings
4. low current and high voltage ratings

Question ID : **6698121108**
Status : **Answered**
Chosen Option : **1**

Q.92 Which of the below plants has highest overall efficiency?

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

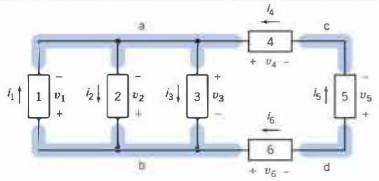
Question ID : **6698121125**
Status : **Answered**
Chosen Option : **2**

Q.93 Let α be the chording angle in electrical degrees for the fundamental flux wave of an alternator. Its pitch-factor for the n^{th} harmonic will be equal to:

Ans
1. $\cos n\alpha/2$
2. $\cos \alpha$
3. $\cos n\alpha$
4. $\cos 3\alpha$

Question ID : **6698121055**
Status : **Answered**
Chosen Option : **1**

Q.94 What would be the correct equation representing Kirchhoff's Current Law (KCL) at node a for the given network?



Ans
1. $i_1 - i_2 + i_3 - i_4 = 0$

Question ID : **6698121083**
Status : **Answered**
Chosen Option : **4**

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2. $i_1 + i_2 - i_3 - i_4 = 0$

3. $i_1 - i_2 - i_3 + i_4 = 0$

4. $i_1 - i_2 = 0$

Q.95 The synchronous capacitor is:

Question ID : **6698121121**
Status : **Answered**
Chosen Option : **3**

Ans

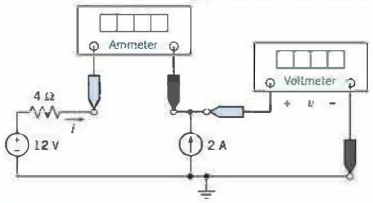
1. an over-excited synchronous motor driving a mechanical load

2. an under-excited synchronous motor driving a mechanical load

3. an over-excited synchronous motor running without a mechanical load

4. an ordinary static capacitor bank

Q.96 The current source in the given network supplies 40 W. What values do the meters read?



Question ID : **6698121144**
Status : **Not Answered**
Chosen Option : **--**

Ans

1. $i = 2$ A and $v = -20$ V

2. $i = -2$ A and $v = 20$ V

3. $i = 1$ A and $v = 10$ V

4. $i = 1$ A and $v = -10$ V

Q.97 Moving-iron instruments can be used to measure:

Question ID : **6698121101**
Status : **Answered**
Chosen Option : **2**

Ans

1. alternating currents and voltages

2. both direct and alternating currents and voltages

3. radio frequency currents

4. direct currents and voltages

Q.98 The sole purpose of a commutator in a DC generator is to:

Question ID : **6698121107**
Status : **Answered**
Chosen Option : **2**

Ans

1. reduce sparking at brushes

2. convert the induced AC into DC

3. increase output voltage

4. provide a smoother output

Q.99 Crest or amplitude factor of an alternating quantity is defined as the ratio:

Question ID : **6698121042**
Status : **Answered**
Chosen Option : **4**

Ans

1. $\dfrac{\text{rms value}}{\text{maximum value}}$

2. $\dfrac{\text{maximum value}}{\text{average value}}$

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3. $\frac{\text{rms value}}{\text{average value}}$

4. $\frac{\text{maximum value}}{\text{rms value}}$

Q.100 A steam power station has an overall efficiency of 20%, and 0.5 kg of coal is burnt per kW·h of electrical energy generated. Calculate the calorific value of the fuel. Heat equivalent of 1 kW·h is 860 kcal.

Question ID : **6698121122**
Status : **Answered**
Chosen Option : **2**

Ans
1. 8600 kcal/kg
2. 344 kcal/kg
3. 860 kcal/kg
4. 2150 kcal/kg

Q.101 The maximum demand of a consumer is 20 A at 220 V. Calculate the equivalent maximum power demand.

Question ID : **6698121127**
Status : **Not Answered**
Chosen Option : **--**

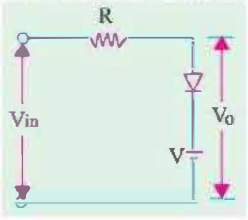
Ans
1. 4.4 W
2. 440 W
3. 4.4 kW
4. 220 W

Q.102 _____ is the method of braking, in which motor armature remains connected to the supply and draws power from it producing torque opposite to the direction of motion.

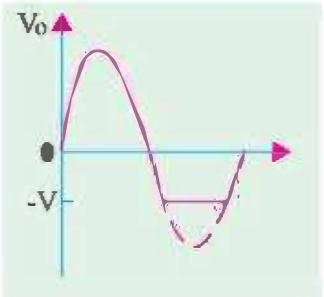
Question ID : **6698121135**
Status : **Answered**
Chosen Option : **3**

Ans
1. Rheostatic braking
2. Regenerative braking
3. Plugging
4. Eddy current braking

Q.103 Choose the appropriate output waveform for the following circuit.



Question ID : **6698121074**
Status : **Answered**
Chosen Option : **3**

Ans
1.


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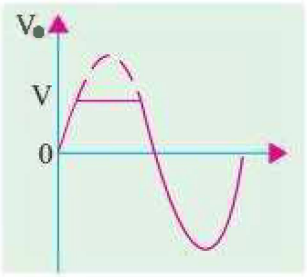
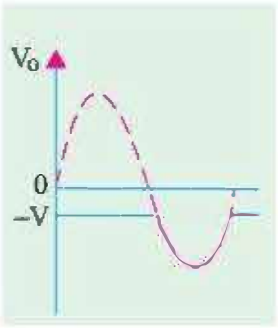
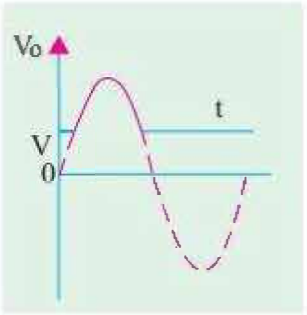
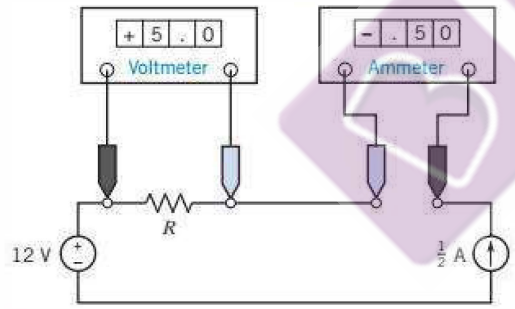
2. 

3. 

4. 

Q.104 For the given network, find the value of the resistance R.

Question ID : **6698121141**
Status : **Not Answered**
Chosen Option : **--**



Ans

1. 0.1 Ω
2. 2.5 Ω
3. 10 Ω
4. 25 Ω

Q.105 Approximate estimation of power demand can be made by:

Question ID : **6698121062**
Status : **Not Answered**
Chosen Option : **--**

(i) Load survey method

(ii) Statistical methods

(iii) Mathematical method

(iv) Economic parameters

Which of these are correct?

Ans
1. (ii) and (iii) only
2. (i), (ii), (iii) and (iv)
3. (i) and (ii) only
4. (i), (ii) and (iii) only

Q.106 Earthing is necessary to provide protection against:

Question ID : **6698121131**
Status : **Answered**
Chosen Option : **3**

Ans
1. overloading
2. voltage fluctuation
3. the danger of electric shock
4. high temperature of the conductors

Q.107 It is never advisable to connect a stationary alternator to live bus-bars because:

Question ID : **6698121120**
Status : **Answered**
Chosen Option : **2**

Ans
1. it will decrease the bus-bar voltage, though momentarily
2. it will get short-circuited
3. it will disturb generated emfs of other alternators connected in parallel
4. it is likely to run as a synchronous motor

Q.108 What is the maximum permissible voltage drop from supply terminals to any point on the installation for power load wiring?

Question ID : **6698121060**
Status : **Answered**
Chosen Option : **3**

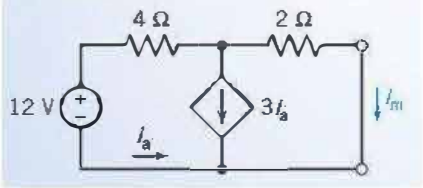
Ans
1. 2% of the declared supply voltage plus 5V
2. 2% of the declared supply voltage
3. 5% of the declared supply voltage
4. 2% of the declared supply voltage plus 1V

Q.109 Which of the following is utilised in the operation of voltmeters only?

Question ID : **6698121104**
Status : **Answered**
Chosen Option : **4**

Ans
1. Electrodynamic effect
2. Electromagnetic effect
3. Magnetic effect
4. Electrostatic effect

Q.110 Obtain the relation between i_a and i_m for the given network.



Question ID : **6698121084**
Status : **Not Answered**
Chosen Option : **--**

Ans
1. $i_m = -4i_a$
2. $i_m = 2i_a$

3. $i_m = 3i_a$

4. $i_m = -2i_a$

Q.111 A generating station has a connected load of 40 MW and a maximum demand of 20 MW, the units generated being 61.5 × 10⁶ per annum. Calculate the demand factor.

Question ID : **6698121124**
Status : **Answered**
Chosen Option : **2**

Ans
1. 0.5 %
2. 0.5
3. 35.1%
4. 45%

Q.112 A silicon diode has a forward voltage drop of 1.2 V for a forward DC current of 100 mA. It has a reverse current of 1 µA for a reverse voltage of 10 V. Calculate the AC resistance at a forward DC current of 2.5 mA.

Question ID : **6698121073**
Status : **Not Answered**
Chosen Option : **--**

Ans
1. 15 Ω
2. 12 Ω
3. 20 Ω
4. 10 Ω

Q.113 A consumer has a maximum demand of 200 kW at 40% load factor, and units consumed per year are 700.8 k units. If the tariff is ₹ 100 per kW of maximum demand plus 10 paise per kW·h, calculate the annual charges.

Question ID : **6698121129**
Status : **Not Answered**
Chosen Option : **--**

Ans
1. ₹ 70,080
2. ₹ 80,090
3. ₹ 90,080
4. ₹ 80,500

Q.114 In a magnetic circuit, which of the following is similar to current and resistance in an electric circuit?

Question ID : **6698121039**
Status : **Answered**
Chosen Option : **2**

Ans
1. Magnetomotive force and reluctance
2. Flux and reluctance
3. Reluctance and flux density
4. Reluctivity and resistivity

Q.115 The size of an earth wire is determined by:

Question ID : **6698121132**
Status : **Answered**
Chosen Option : **1**

Ans
1. ampere capacity of the service wires
2. body size of the electrical machine
3. atmospheric conditions
4. voltage of the service wires

Q.116 If an alternator is operating with unity power factor load, then the effect of armature reaction on the main-field flux of an alternator will be:

Question ID : **6698121112**
Status : **Answered**
Chosen Option : **4**

Ans
1. nominal
2. distortional
3. demagnetising
4. magnetising

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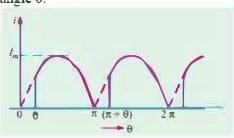
Q.117 The ratio of the average power to the maximum demand is defined as:

Question ID : **6698121056**
Status : **Answered**
Chosen Option : **1**

Ans
✔ 1. load factor
✘ 2. maximum capacity
✘ 3. demand factor
✘ 4. diversity factor

Q.118 A delayed full-wave rectified sinusoidal current has an average value equal to half its maximum value. Find the delay angle θ.



Question ID : **6698121099**
Status : **Not Answered**
Chosen Option : **--**

Ans
✘ 1. $\theta = \cos^{-1}\left(\frac{\pi}{2} - \frac{1}{2}\right)$
✘ 2. $\theta = \cos^{-1}\left(\frac{\pi}{2} + 1\right)$
✔ 3. $\theta = \cos^{-1}\left(\frac{\pi}{2} - 1\right)$
✘ 4. $\theta = \cos^{-1}\left(\frac{\pi}{2}\right)$

Q.119 The load resistance in a 220 V circuit is 40 Ω. Determine the load current.

Question ID : **6698121086**
Status : **Answered**
Chosen Option : **3**

Ans
✘ 1. 5 A
✘ 2. 6.5 A
✔ 3. 5.5 A
✘ 4. 2.75 A

Q.120 Calculate the reading that will be given by a hot-wire voltmeter if it is connected across the terminals of a generator whose voltage waveform is represented by:

$v = 400\sin\omega t + 300\sin 3\omega t$ V.

Question ID : **6698121048**
Status : **Not Answered**
Chosen Option : **--**

Ans
✔ 1. $500/\sqrt{2}$ V
✘ 2. $300/\sqrt{2}$ V
✘ 3. $250/\sqrt{2}$ V
✘ 4. $400/\sqrt{2}$ V

Section : **Aptitude Test**

Q.1 Choose the most appropriate synonym of the ***italicised*** words from the given options.

Our results were declared today, and we were ***pleasantly surprised*** to find that we were among the top ten.

Question ID : **6698121148**
Status : **Answered**
Chosen Option : **2**

Ans
✘ 1. concerned
✔ 2. thrilled
✘ 3. dismayed
✘ 4. unhappy

Q.2

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Fill in the blanks with appropriate word from the given options.

Mayur and his friends will be coming over to us for dinner tonight. The sentence can be rewritten as Mayur and his friends will be _____ us for dinner tonight.'

Question ID : **6698121151**
Status : **Answered**
Chosen Option : **1**

Ans
✔ 1. visiting
✘ 2. playing
✘ 3. preparing
✘ 4. spending

Q.3 Fill in the blanks with the correct preposition.

We walked _____ a bookstore to see what books they had.

Question ID : **6698121149**
Status : **Answered**
Chosen Option : **1**

Ans
✔ 1. into
✘ 2. behind
✘ 3. above
✘ 4. under

Q.4 Fill in the blanks with the correct article.

I am sure you have heard the English proverb: "_____ fool and his money are soon parted".

Question ID : **6698121147**
Status : **Answered**
Chosen Option : **3**

Ans
✘ 1. The
✔ 2. A
✘ 3. Ø (Zero Article)
✘ 4. An

Q.5 Fill in the blanks with appropriate word from the given options.

_____ is a figure of speech wherein a part is used to represent the whole or the whole for the part.

Question ID : **6698121153**
Status : **Not Answered**
Chosen Option : **--**

Ans
✘ 1. Metonymy
✘ 2. Litotes
✔ 3. Synecdoche
✘ 4. Hyperbole

Q.6 Fill in the blanks with the correct preposition.

We spend our evenings at a beautiful garden _____ my house.

Question ID : **6698121150**
Status : **Answered**
Chosen Option : **1**

Ans
✔ 1. close to
✘ 2. onto
✘ 3. from
✘ 4. out of

Q.7 Choose the most appropriate synonym of the ***italicised*** word from the given options.

Deepa gave a wonderful Bharatanatyam performance at the Town-hall last evening. She danced quite ***elegantly***!

Question ID : **6698121152**
Status : **Answered**
Chosen Option : **1**

Ans
✘ 1. shabbily
✘ 2. untidily

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3. gracefully

4. wildly

Comprehension:

Read the following passage and answer the questions that follow.

Leisure and the ways of spending it are not to be regarded entirely as preparation for the daily task. The problem lies deeper. If freedom, which is leisure, means anything, it means freedom to wander around the world and, if possible, to come to terms with it. There are those, who, especially if they are their own masters, best realise their freedom in the facilities and services they provide to their employees in their daily work; but it must be admitted that they also have the opportunity of commanding leisure when they need it. They often spend that leisure wandering away in the wilderness of the universe. Beyond doubt, such people are happy because of their ability to retire into the wilderness which demands no great material resources. Only the will to wander with worthy companions, whether persons or thoughts must be there. The thoughts will range over many things, the highest and the deepest, in a world of surpassing beauty and limitless opportunities.

SubQuestion No : 8

Q.8 Fill in the blank with the most appropriate option based on your reading of the passage.

Question ID : **6698121155**
Status : **Answered**
Chosen Option : **1**

The author holds freedom and _____ to be one and the same.

Ans

1. leisure

2. work

3. urge

4. toil

Comprehension:

Read the following passage and answer the questions that follow.

Leisure and the ways of spending it are not to be regarded entirely as preparation for the daily task. The problem lies deeper. If freedom, which is leisure, means anything, it means freedom to wander around the world and, if possible, to come to terms with it. There are those, who, especially if they are their own masters, best realise their freedom in the facilities and services they provide to their employees in their daily work; but it must be admitted that they also have the opportunity of commanding leisure when they need it. They often spend that leisure wandering away in the wilderness of the universe. Beyond doubt, such people are happy because of their ability to retire into the wilderness which demands no great material resources. Only the will to wander with worthy companions, whether persons or thoughts must be there. The thoughts will range over many things, the highest and the deepest, in a world of surpassing beauty and limitless opportunities.

SubQuestion No : 9

Q.9 Fill in the blank with the most appropriate option based on your reading of the passage.

Question ID : **6698121158**
Status : **Answered**
Chosen Option : **2**

By using the phrase 'beyond doubt', the author wishes to say that such people are _____ about what they are saying or doing.

Ans

✗ 1. regretful

✓ 2. definite

✗ 3. reluctant

✗ 4. uneasy

Comprehension:

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Read the following passage and answer the questions that follow.

Leisure and the ways of spending it are not to be regarded entirely as preparation for the daily task. The problem lies deeper. If freedom, which is leisure, means anything, it means freedom to wander around the world and, if possible, to come to terms with it. There are those, who, especially if they are their own masters, best realise their freedom in the facilities and services they provide to their employees in their daily work; but it must be admitted that they also have the opportunity of commanding leisure when they need it. They often spend that leisure wandering away in the wilderness of the universe. Beyond doubt, such people are happy because of their ability to retire into the wilderness which demands no great material resources. Only the will to wander with worthy companions, whether persons or thoughts must be there. The thoughts will range over many things, the highest and the deepest, in a world of surpassing beauty and limitless opportunities.

SubQuestion No : 10

Q.10 Fill in the blank with the most appropriate option based on your reading of the passage.

Question ID : **6698121156**
Status : **Answered**
Chosen Option : **2**

The author says that conscientious people have the _____ to find time to spend for leisure once their work is over.

Ans

✗ 1. capacity

✓ 2. ability

✗ 3. kinship

✗ 4. likeness

Comprehension:

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Read the following passage and answer the questions that follow.

Leisure and the ways of spending it are not to be regarded entirely as preparation for the daily task. The problem lies deeper. If freedom, which is leisure, means anything, it means freedom to wander around the world and, if possible, to come to terms with it. There are those, who, especially if they are their own masters, best realise their freedom in the facilities and services they provide to their employees in their daily work; but it must be admitted that they also have the opportunity of commanding leisure when they need it. They often spend that leisure wandering away in the wilderness of the universe. Beyond doubt, such people are happy because of their ability to retire into the wilderness which demands no great material resources. Only the will to wander with worthy companions, whether persons or thoughts must be there. The thoughts will range over many things, the highest and the deepest, in a world of surpassing beauty and limitless opportunities.

SubQuestion No : 11

Q.11 Fill in the blank with the most appropriate option based on your reading of the passage.

Question ID : **6698121157**
Status : **Answered**
Chosen Option : **2**

Some people ***are their own masters***, notes the author. By this, he/she means that they are _____.

Ans
✗ 1. free to accept others decisions
✗ 2. obsessed with their own ideas
✓ 3. able to take decisions
✗ 4. trained as masters

Q.12 Fill in the blanks with the correct preposition.

Question ID : **6698121159**
Status : **Answered**
Chosen Option : **3**

It was a bit frustrating. We could easily see _____ her game, and we told her so.

Ans
✗ 1. to
✗ 2. after
✓ 3. through
✗ 4. at

Q.13 Choose the most appropriate synonym of the ***italicised*** word from the given options.

Question ID : **6698121160**
Status : **Answered**
Chosen Option : **4**

It makes no sense to be ***overwhelmed*** by anything. One must learn to be sober all the time.

Ans
✓ 1. overawed

2. twitchy

3. uptight

4. jittery

Q.14 The first part of the sentence is given below followed by four parts (P, Q, R and S) that are jumbled.

Arrange the remaining parts to form a meaningful sentence.

The Commission has announced that

P. will normally be granted

Q. candidates should note

R. that no request for any

S. change of examination centre

Question ID : **6698121162**
Status : **Answered**
Chosen Option : **2**

Ans

1. SRPQ

2. QRSP

3. RSQP

4. PRSQ

Q.15 Choose the most appropriate synonym of the ***italicised*** word from the given options.

The discovery of atomic energy is the greatest ***achievement*** of science.

Question ID : **6698121161**
Status : **Answered**
Chosen Option : **1**

Ans

1. triumph

2. failure

3. disaster

4. debacle

Q.16 Given below are two statements, followed by four conclusions.

Assume the facts in the statement to be true and decide which of the conclusions logically follow(s) from the statements.

Statements: All roots are fruits. All fruits are guns.

Conclusions:

I. All roots are guns.

II. All guns are roots.

III. All fruits are roots.

IV. Some guns are roots.

Question ID : **6698121168**
Status : **Answered**
Chosen Option : **2**

Ans

1. All follow

2. Only I and IV follow

3. None follows

4. Only II and III follow

Q.17 A question is followed by two statements numbered I and II.

You have to decide whether the data provided in the statements are sufficient to answer the question.

Question: Who among Prithivi, Quamru, Tina, Varun and Madhu is exactly in the middle when they are arranged in ascending order of their heights?

Statements

I. Varun is taller than Quamru but shorter than Madhu.

II. Tina is taller than Quamru and Madhu but shorter than Prithvi.

Question ID : **6698121169**
Status : **Answered**
Chosen Option : **1**

Ans

1. Both I and II are necessary

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2. Statement II alone is sufficient

3. Either statement I or statement II is sufficient

4. Statement I alone is sufficient

Q.18 The following coding system shows the letter codes for numbers. Excluding the exceptions mentioned below, the digits in the question are to be transformed into letter codes as follows:

Digit	0	1	2	3	4	5	6	7	8	9
Letter Code	A	B	C	D	E	F	G	H	I	J

Exceptions:

i. If a number begins with a nonzero even digit, that digit should be coded as N.

ii. If a number begins with a nonzero odd digit, that digit should be coded as P.

iii. If a number begins and also ends with non-zero even digits, those two digits at the extreme ends should be coded as Q.

iv. If a number begins and also ends with nonzero odd digits, those two digits at the extreme ends should be coded as W.

v. If a number's middle digit is a multiple of 2 that digit should be coded as Z.

Barring these exceptions, the other digits should be codified as per the above-mentioned letter codes.

Find the appropriate code for the following number-group.3214067

Question ID : **6698121166**
Status : **Not Answered**
Chosen Option : **--**

Ans

1. WCBZGAW
2. WCBZAGW
3. WBCZGAW
4. WBCAZGW

Q.19 Two statements are followed by two conclusions numbered I and II. Assume the facts in the statements to be true and decide which of the conclusions follow.

Statements:

Some Heroes are Heroines.

All Heroines are beautiful.

Conclusions:

I. All Heroes are beautiful.

II. All Heroines are Heroes.

Question ID : **6698121167**
Status : **Answered**
Chosen Option : **2**

Ans

1. Only conclusion II follows
2. Neither I nor II follows
3. Only conclusion I follows
4. Either I or II follows

Q.20 In a certain code language, MAGICIAN is written as OCEGEKYL. How is PHYSICIAN written in that code?

Question ID : **6698121165**
Status : **Answered**
Chosen Option : **4**

Ans

1. RJWUKEGCP
2. RJAQKEGYL
3. RJWQGEKYP
4. RJWQKEGYP

Q.21 Observe the series and fill the missing one.

AEIZ, EIMV, IMQR, OSWL,_____

Question ID : **6698121171**
Status : **Answered**
Chosen Option : **2**

Ans

1. UYCG
2. UYBF
3. UYBG
4. UYCF

Q.22 Observe the given pattern and select the option that can replace the question mark (?).

Question ID : **6698121174**
Status : **Answered**
Chosen Option : **2**

Ans
1. 7:29
2. 7:05
3. 7:41
4. 7:13

Q.23 Observe the following figure. Which of the option figures would go in place of the question mark (?) to complete the pattern?

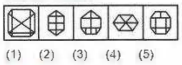
Question ID : **6698121176**
Status : **Answered**
Chosen Option : **1**

Ans
1. 4
2. 1
3. 2
4. 3

Q.24 The problem figures given below form a series. Which of the answer figures would come next in the series?

Problem Figures:

Answer Figures:

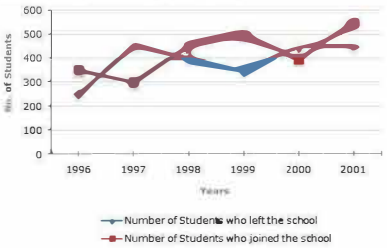


Question ID : **6698121172**
Status : **Answered**
Chosen Option : **4**

Ans
1. 3
2. 4
3. 1
4. 5

Q.25 Vinjee is a leading school for IIT foundation study. The following line graph gives the number of students who joined and left the school at the beginning of the year for six years, from 1996 to 2001.

Initial strength of school in 1995 = 3000



For which year, the percentage rise/fall in the number of students who left the school compared to the previous year is maximum?

Question ID : **6698121164**
Status : **Answered**
Chosen Option : **1**

Ans
1. 1998
2. 1997
3. 1999
4. 2000

Q.26

Question ID : **6698121170**
Status : **Answered**
Chosen Option : **3**

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Given below are some statements, followed by some conclusions. Assume the facts in the statement to be true and decide which of the conclusions logically follow(s) from the statements.

Statement:

Some biscuits are cakes. Some cakes are herbs. Some herbs are food. Some food is diet.

Conclusions:

I. No biscuits are diet.
II. No food is cakes.
III. Some biscuits are diet.
IV.Some biscuits are food.

Ans

1. All follow
2. Only III or IV follows
3. Either I or II follows
4. None follows

Q.27 Which number would come next in the following sequence?

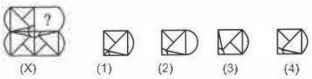
1, 0, 5, 124, 11, 1330, 17, _____.

Question ID : **6698121173**
Status : **Answered**
Chosen Option : **3**

Ans

1. 4138
2. 4129
3. 4912
4. 4813

Q.28 Observe the given pattern and select the option that can replace the question mark (?) to complete the pattern.



Question ID : **6698121177**
Status : **Answered**
Chosen Option : **2**

Ans

1. 2
2. 4
3. 1
4. 3

Q.29 Two statements are followed by two conclusions numbered I and II.Assume the facts in the statements to be true and decide which of the conclusions follow.

Statements

Some watches are pillars.
Some pillars are keyboards.

Conclusions

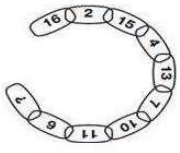
I. Some keyboards are watches.
II. No watch is a keyboard.

Question ID : **6698121163**
Status : **Answered**
Chosen Option : **2**

Ans

1. Either I or II follows
2. Only Conclusion I follows
3. Neither I nor II follows
4. Only Conclusion II follows

Q.30 Observe the given pattern and select the option that can replace the question mark (?).



Question ID : **6698121175**
Status : **Answered**
Chosen Option : **1**

Ans

1. 16
2. 15
3. 11

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✗ 4. 1

Q.31 Out of 264 pens in a box, 33 are defective. If one pen is selected at random what is the probability that it is NOT a defective one?

Question ID : **6698121196**
Status : **Not Answered**
Chosen Option : **--**

Ans
✗ 1. $\frac{1}{4}$
✗ 2. $\frac{3}{4}$
✓ 3. $\frac{7}{8}$
✗ 4. $\frac{1}{8}$

Q.32 The selling price of a van is $\frac{25}{18}$ times its cost price. If the profit earned is ₹ 2,91,564, find the cost price.

Question ID : **6698121180**
Status : **Answered**
Chosen Option : **2**

Ans
✗ 1. ₹ 4,04,950
✓ 2. ₹ 7,49,736
✗ 3. ₹ 5,29,926
✗ 4. ₹ 6,72,304

Q.33 If 12 women can weave 132 m of cloth, how many will be needed to weave 187 m of cloth?

Question ID : **6698121181**
Status : **Answered**
Chosen Option : **1**

Ans
✗ 1. 22
✗ 2. 29
✗ 3. 19
✓ 4. 17

Q.34 A shopkeeper sells 200 shirts and makes a profit equal to the selling price of 25 shirts. Find his profit percentage.

Question ID : **6698121190**
Status : **Answered**
Chosen Option : **2**

Ans
✗ 1. 13.35%
✗ 2. 12.50%
✓ 3. 14.29%
✗ 4. 15.08%

Q.35 In a hostel having 216 students, there is sufficient food to last for 18 days. If 27 more students join how long will that food last?(assume that all students consume the same amount of food per day)

Question ID : **6698121182**
Status : **Answered**
Chosen Option : **4**

Ans
✗ 1. 18
✗ 2. 19
✗ 3. 21
✓ 4. 16

Q.36 P, Q and R complete a job together in 8 days. P alone can finish it in 36 days; Q alone can finish it in 18 days. Find how long will it take for R to finish the job alone?

Question ID : **6698121183**
Status : **Answered**
Chosen Option : **4**

Ans
✗ 1. 42 days
✗ 2. 28 days
✗ 3. 32 days
✓ 4. 24 days

Q.37 A trader purchases 220 bags of rice at ₹ 1,240 per bag. He sells 90 bags at ₹ 1,320 per bag and the rest at ₹ 1,300 per bag. Find the total profit percentage earned by the trader (rounded off to a decimal).

Question ID : **6698121191**
Status : **Answered**
Chosen Option : **1**

Ans
✗ 1. 5.4%

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2. 5.7%

3. 5.6%

4. 5.5%

Q.38 A boy swims a certain distance in 15 min at the rate of 24 km/h. How much time will he take if his speed reduces to 20 km/h to cover the same distance?

Question ID : **6698121185**
Status : **Answered**
Chosen Option : **1**

Ans

1. 18 min

2. 12.5 min

3. 16.5 min

4. 13 min

Q.39 If a:b is 2:3 and b:c is 5:3, find a:c.

Question ID : **6698121195**
Status : **Answered**
Chosen Option : **3**

Ans

1. 2:3

2. 1:1

3. 10:9

4. 2:5

Q.40 Find the overall class average when 16 students have an average score of 58, 12 have averaged 63, 8 have averaged 68 and 3 have averaged 72.

Question ID : **6698121187**
Status : **Answered**
Chosen Option : **4**

Ans

1. 66.6

2. 64.1

3. 63.5

4. 62.7

Q.41 Two dice are tossed together. Find the probability of getting a total of 8.

Question ID : **6698121197**
Status : **Not Answered**
Chosen Option : **--**

Ans

1. $\frac{5}{36}$

2. $\frac{3}{8}$

3. $\frac{2}{9}$

4. $\frac{1}{12}$

Q.42 A refrigerator was sold at a profit of 15%. Had it been sold for ₹ 1,234 more, the profit would have been 20%. Find the cost price of the refrigerator.

Question ID : **6698121194**
Status : **Answered**
Chosen Option : **3**

Ans

1. ₹ 2,8750

2. ₹ 26,920

3. ₹ 24,680

4. ₹ 28,640

Q.43 A farmer sells a bag of wheat for ₹ 9,310 and incurs a loss of 5%. At what price should the farmer sell if he has to earn a profit of 6%?

Question ID : **6698121184**
Status : **Answered**
Chosen Option : **2**

Ans

1. ₹ 10,362

2. ₹ 10,388

3. ₹ 10,399

4. ₹ 9,869

Q.44 A shopkeeper allows a discount of 12% on the marked price which is 20% above cost price of ₹ 400. What is the amount of discount allowed?

Question ID : **6698121192**
Status : **Not Answered**
Chosen Option : **--**

Ans
1. ₹ 57.6
2. ₹ 24
3. ₹ 38.4
4. ₹ 48

Q.45 The shadows of a father and his son at a particular time are 0.84 m and 0.56 m respectively. If the actual height of the son is 110 cm, find the actual height of the father.

Question ID : **6698121178**
Status : **Answered**
Chosen Option : **2**

Ans
1. 173.3 cm
2. 165 cm
3. 162 cm
4. 170.5 cm

Q.46 Find the percentage of pure gold in 18 carat gold if the purity of 22 carat is 91.6%.

Question ID : **6698121188**
Status : **Answered**
Chosen Option : **4**

Ans
1. 81.8%
2. 78%
3. 74%
4. 75%

Q.47 A car takes 4 h 30 min to finish a journey at 60 km/h. How much time will it save if it travels at a speed of 72 km/h?

Question ID : **6698121186**
Status : **Answered**
Chosen Option : **4**

Ans
1. 30 min
2. 55 min
3. 75 min
4. 45 min

Q.48 Jaya bought a scooter for ₹ 32,750 and sold it to Rekha at 12% profit. Rekha sold it to Hema at 10% profit. At what price did Hema purchase the scooter?

Question ID : **6698121193**
Status : **Answered**
Chosen Option : **3**

Ans
1. ₹ 43,230
2. ₹ 40,000
3. ₹ 40,348
4. ₹ 41,804

Q.49 In a class, the ratio of boys to girls is 5 : 8 and there are 6 girls more than boys. Find the number of boys.

Question ID : **6698121179**
Status : **Answered**
Chosen Option : **3**

Ans
1. 32
2. 16
3. 10
4. 26

Q.50 If the increase in the price of petrol is 12%, by how much should a motorist reduce the consumption of petrol so that there is NO increase in his expenditure on petrol?

Question ID : **6698121189**
Status : **Answered**
Chosen Option : **3**

Ans
1. 12%
2. 9.3%

3. 8.8%

4. 10.7%