

section: Physics

Q.1 A particle starting from rest moves along the circumference of a circle of radius 'r' with angular acceleration ' α '. The magnitude of the average velocity, in the time it completes the small angular displacement ' θ ' is

Ans

1. $r \left(\frac{2}{\alpha\theta} \right)^2$

2. $r \left(\frac{\alpha\theta}{2} \right)$

3. $r \left(\frac{\alpha\theta}{2} \right)^2$

4. $r \left(\frac{\alpha\theta}{2} \right)^{\frac{1}{2}}$

Question Type : **MCQ**

Question ID : **37135116867**

Option 1 ID : **37135167468**

Option 2 ID : **37135167466**

Option 3 ID : **37135167467**

Option 4 ID : **37135167465**

Status : **Answered**

Chosen Option : **4**

Q.2 Two wires A and B are stretched by the same load. The radius of wire A is double the radius of wire B. The stress on the wire B as compared to the stress on the wire A is

Ans

1. twice.

2. four times.

3. half.

4. equal.

Question Type : **MCQ**

Question ID : **37135116861**

Option 1 ID : **37135167443**

Option 2 ID : **37135167444**

Option 3 ID : **37135167441**

Option 4 ID : **37135167442**

Status : **Answered**

Chosen Option : **2**

Q.3 When wavelength of light used in optical instruments A and B are 4500\AA and 6000\AA respectively, the ratio of resolving power of A to B will be

Ans

1. $16 : 9$

2. $7 : 1$

3. $9 : 16$

4. $4 : 3$

Question Type : **MCQ**

Question ID : **37135116857**

Option 1 ID : **37135167425**

Option 2 ID : **37135167428**

Option 3 ID : **37135167426**

Option 4 ID : **37135167427**

Status : **Answered**

Chosen Option : **3**

Q.4

The ratio of radii of gyration of a ring to a disc (both circular) of same radii and mass, about a tangential axis perpendicular to the plane is

Ans

✓ 1. $\frac{2}{\sqrt{3}}$

✗ 2. $\frac{\sqrt{2}}{1}$

✗ 3. $\frac{\sqrt{3}}{\sqrt{2}}$

✗ 4. $\frac{2}{\sqrt{5}}$

Question Type : MCQ

Question ID : 37135116874

Option 1 ID : 37135167494

Option 2 ID : 37135167493

Option 3 ID : 37135167495

Option 4 ID : 37135167496

Status : Answered

Chosen Option : 1

Q.5

The work done in blowing a soap bubble of radius 'R' is 'W'. The work done in blowing a bubble of radius '2R' of the same soap solution is

Ans

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

2. $\frac{W}{2}$

3.

4w

4. 2w

Question Type : MCQ

Question ID : 37135116882

Option 1 ID : 37135167525

Option 2 ID : 37135167526

Option 3 ID : 37135167528

Option 4 ID : 37135167527

Status : Answered

Chosen Option : 3

Q.6

The light of wavelength ' λ ' incident on the surface of metal having work function

ϕ emits the electrons. The maximum velocity of electrons emitted is

(c = velocity of light, h = Planck's constant, m = mass of electron)

Ans

1. $\left[\frac{2(hc - \phi)}{m\lambda} \right]$

2. $\left[\frac{2(hc - \lambda\phi)}{m\lambda} \right]^{\frac{1}{2}}$

3. $\left[\frac{2(hc - \lambda)}{m\lambda} \right]^{\frac{1}{2}}$

4. $\left[\frac{2(hv - \phi)\lambda}{mc} \right]$

Question Type : MCQ

Question ID : 37135116881

Option 1 ID : 37135167523

Option 2 ID : 37135167522

Option 3 ID : 37135167521

Option 4 ID : 37135167524

Status : Answered

Chosen Option : 2

Q.7

A thin uniform rod has mass 'M' and length 'L'. The moment of inertia about an axis perpendicular to it and passing through the point at a distance $\frac{L}{3}$ from one of its ends, will be

Ans

1. $\frac{ML^2}{12}$

2. $\frac{7}{8} ML^2$

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

4. $\frac{ML^2}{3}$

Question Type : MCQ

Question ID : 37135116865

Option 1 ID : 37135167459

Option 2 ID : 37135167457

Option 3 ID : 37135167458

Option 4 ID : 37135167460

Status : Answered

Chosen Option : 3

Q.8 A thin light weight rod of diamagnetic substance such as silver is suspended in uniform external magnetic field. It will align itself with its length

Ans ✓ 1.

perpendicular to magnetic field.

✗ 2.

inclined at an angle 120° to magnetic field.

✗ 3.

inclined at an angle 45° to magnetic field.

✗ 4. parallel to magnetic field.

Question Type : **MCQ**

Question ID : **37135116886**

Option 1 ID : **37135167541**

Option 2 ID : **37135167543**

Option 3 ID : **37135167542**

Option 4 ID : **37135167544**

Status : **Answered**

Chosen Option : **1**

Q.9

Two spherical black bodies of radius ' r_1 ' and ' r_2 ' with surface temperature ' T_1 ' and ' T_2 ' respectively, radiate same power, then $r_1 : r_2$ is

Ans

✓ 1. $\left(\frac{T_2}{T_1}\right)^2$

✗ 2. $\left(\frac{T_1}{T_2}\right)^4$

✗ 3. $\left(\frac{T_1}{T_2}\right)^2$

✗ 4. $\left(\frac{T_2}{T_1}\right)^4$

Question Type : MCQ

Question ID : 37135116854

Option 1 ID : 37135167414

Option 2 ID : 37135167415

Option 3 ID : 37135167416

Option 4 ID : 37135167413

Status : Answered

Chosen Option : 1

Q.10 A body slides down a smooth inclined plane having angle ' θ ' and reaches the bottom with velocity ' v '. If a body is a sphere then its linear velocity at the bottom of the plane is

Ans

1. $\sqrt{\frac{2}{7}} v$

2. $\sqrt{\frac{3}{7}} v$

3. $\sqrt{\frac{5}{7}} v$

4. $\sqrt{\frac{9}{7}} v$

Question Type : **MCQ**

Question ID : **37135116895**

Option 1 ID : **37135167577**

Option 2 ID : **37135167578**

Option 3 ID : **37135167579**

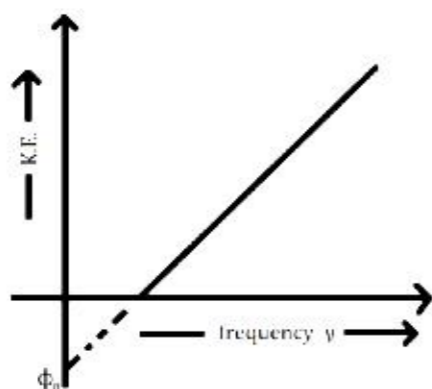
Option 4 ID : **37135167580**

Status : **Answered**

Chosen Option : **3**

Q.11

The graph of kinetic energy against the frequency (ν) of incident light is as shown in the figure. The slope of the graph and intercept on X axis respectively are



Ans

✓ 1.

Planck's constant, threshold frequency

✗ 2.

work function, maximum K.E.

✗ 3.

maximum K.E, threshold frequency

✗ 4.

Planck's constant, work function

Question Type : **MCQ**

Question ID : **37135116877**

Option 1 ID : **37135167506**

Option 2 ID : **37135167508**

Option 3 ID : **37135167505**

Option 4 ID : **37135167507**

Status : **Answered**

Chosen Option : **1**

Q.12 A simple pendulum of length ' ℓ ' has a bob of mass ' m '. It executes S.H.M. of small amplitude ' A '. The maximum tension in the string is
(g = acceleration due to gravity)

Ans

1. $2 mg$

2. mg

3. $mg \left(\frac{A}{\ell} + 1 \right)$

4. $mg \left(\frac{A^2}{\ell^2} + 1 \right)$

Question Type : MCQ

Question ID : 37135116856

Option 1 ID : 37135167423

Option 2 ID : 37135167421

Option 3 ID : 37135167422

Option 4 ID : 37135167424

Status : Answered

Chosen Option : 1

Q.13 The magnetic susceptibility of a paramagnetic material at $-73\text{ }^{\circ}\text{C}$ is 0.0075 . Its value at $-173\text{ }^{\circ}\text{C}$ will be

Ans

- 1. 0.0075
- 2. 0.0045
- 3. 0.0150
- 4. 0.0030

Question Type : **MCQ**

Question ID : **37135116862**

Option 1 ID : **37135167447**

Option 2 ID : **37135167446**

Option 3 ID : **37135167448**

Option 4 ID : **37135167445**

Status : **Answered**

Chosen Option : **3**

Q.14

A light wave of wavelength ' λ ' is incident on a slit of width 'd'. The resulting diffraction pattern is observed on a screen at a distance 'D'. If linear width of the principal maxima is equal to the width of the slit, then the distance 'D' is

Ans

1. $\frac{d}{\lambda}$

2. $\frac{2\lambda}{d}$

3. $\frac{d^2}{2\lambda}$

4. $\frac{2\lambda^2}{d}$

Question Type : **MCQ**

Question ID : **37135116879**

Option 1 ID : **37135167514**

Option 2 ID : **37135167516**

Option 3 ID : **37135167513**

Option 4 ID : **37135167515**

Status : **Answered**

Chosen Option : **3**

Q.15

Which of the following instruments is 'NOT' a direct reading instrument?

Ans

- 1. Voltmeter
- 2. Ammeter
- 3. Electronic balance
- 4. Potentiometer

Question Type : **MCQ**

Question ID : **37135116888**

Option 1 ID : **37135167549**

Option 2 ID : **37135167550**

Option 3 ID : **37135167551**

Option 4 ID : **37135167552**

Status : **Answered**

Chosen Option : **3**

Q.16 A transistor has a voltage gain 'A'. If the amount ' βA ' of its output is applied to the input of the transistor, then the transistor becomes oscillator when

Ans

1. $\beta = 0$

2. $\beta A = 1$

3. $\beta A = \infty$

4. $\beta A = 0$

Question Type : MCQ

Question ID : 37135116864

Option 1 ID : 37135167455

Option 2 ID : 37135167454

Option 3 ID : 37135167456

Option 4 ID : 37135167453

Status : Answered

Chosen Option : 2

Q.17 An ' α ' particle of energy 10 eV is moving in a circular path in uniform magnetic field. The energy of proton moving in the same path and same magnetic field will be [mass of ' α ' particle = 4 times mass of proton]

Ans

1. 4 eV

2. 8 eV

3. 16 eV

4. 10 eV

Question Type : MCQ

Question ID : 37135116899

Option 1 ID : 37135167596

Option 2 ID : 37135167595

Option 3 ID : 37135167593

Option 4 ID : 37135167594

Status : Answered

Chosen Option : 4



Q.18

At absolute zero temperature, pure silicon behaves as

Ans

1.

extrinsic semiconductor.

2. non-metal.

3. insulator.

4. metal.

Question Type : MCQ

Question ID : 37135116898

Option 1 ID : 37135167591

Option 2 ID : 37135167590

Option 3 ID : 37135167592

Option 4 ID : 37135167589

Status : Answered

Chosen Option : 3

Q.19 In conversion of moving coil galvanometer into an ammeter of required range, the resistance of ammeter so formed is
[s = shunt and G = resistance of galvanometer]

Ans

1. $\frac{S+G}{SG}$

2. $\frac{SG}{S-G}$

3. $\frac{SG}{S+G}$

4. $\frac{S-G}{SG}$

Question Type : **MCQ**

Question ID : **37135116851**

Option 1 ID : **37135167403**

Option 2 ID : **37135167401**

Option 3 ID : **37135167402**

Option 4 ID : **37135167404**

Status : **Answered**

Chosen Option : **3**

Q.20

A spherical rubber balloon carries a charge, uniformly distributed over the surface. As the balloon is blown up and increases in size, the total electric flux coming out of the surface

Ans

1. decreases.

2.

remains unchanged.

3. increases.

4. becomes zero.

Question Type : MCQ

Question ID : 37135116871

Option 1 ID : 37135167483

Option 2 ID : 37135167484

Option 3 ID : 37135167482

Option 4 ID : 37135167481

Status : Answered

Chosen Option : 3

Q.21 A step-up transformer has 300 turns of primary winding and 450 turns of secondary winding. A primary is connected to 150 volt and the current flowing through it is 9A. The current and voltage in the secondary are

Ans

1. 13.5 A, 225 V

2. 13.5 A, 100 V

3. 4.5 A, 100 V

4. 6.0 A, 225 V

Question Type : MCQ

Question ID : 37135116855

Option 1 ID : 37135167419

Option 2 ID : 37135167420

Option 3 ID : 37135167417

Option 4 ID : 37135167418

Status : Answered

Chosen Option : 1

Q.22 A diatomic gas undergoes adiabatic change. Its pressure 'P' and temperature 'T' are related as $P \propto T^x$, where x is

Ans

1. 3.0

2. 2.5

3. 3.5

4. 1.5

Question Type : MCQ

Question ID : 37135116893

Option 1 ID : 37135167571

Option 2 ID : 37135167570

Option 3 ID : 37135167572

Option 4 ID : 37135167569

Status : Answered

Chosen Option : 4

Q.23 An open organ pipe and a closed organ pipe have the frequency of their first overtone identical. The ratio of length of open pipe to that of closed pipe is

Ans

1. 3:4

2. 1:2

3. 2:1

4. 4:3

Question Type : **MCQ**

Question ID : **37135116870**

Option 1 ID : **37135167478**

Option 2 ID : **37135167477**

Option 3 ID : **37135167480**

Option 4 ID : **37135167479**

Status : **Answered**

Chosen Option : **3**

Q.24

A radioactive nucleus emits 4α particles and 7β particles in succession. The ratio of number of neutrons to that of protons is [A = mass number, Z = atomic number]

Ans

1.
$$\frac{A-Z-13}{Z-2}$$

2.
$$\frac{A-Z-13}{Z-1}$$

3.
$$\frac{A-Z-15}{Z-1}$$

4.
$$\frac{A-Z-11}{Z-2}$$

Question Type : MCQ

Question ID : 37135116869

Option 1 ID : 37135167475

Option 2 ID : 37135167473

Option 3 ID : 37135167476

Option 4 ID : 37135167474

Status : Answered

Chosen Option : 3

Q.25

A ray of light travelling through glass of refractive index $\sqrt{2}$, is incident on glass - air boundary at an angle of incidence 45° . If refractive index of air is 1, then the angle of refraction will be

$$\left[\sin 45^\circ = \frac{1}{\sqrt{2}}, \sin 90^\circ = 1 \right]$$

Ans

1. 30°

2. 90°

3. 60°

4. 45°

Question Type : MCQ

Question ID : 37135116883

Option 1 ID : 37135167529

Option 2 ID : 37135167532

Option 3 ID : 37135167531

Option 4 ID : 37135167530

Status : Answered

Chosen Option : 2

Q.26

A sonometer wire under suitable tension having specific gravity 'Q', vibrates with frequency 'n' in air. If the load is completely immersed in water the frequency of vibration of wire will become

Ans

✗ 1. $\left[\frac{Q-1}{nQ} \right]^{\frac{1}{2}}$

✗ 2. $n \left[\frac{Q}{Q-1} \right]^{\frac{1}{2}}$

✗ 3. $\left[\frac{nQ}{Q-1} \right]^{\frac{1}{2}}$

✓ 4. $n \left[\frac{Q-1}{Q} \right]^{\frac{1}{2}}$

Question Type : MCQ

Question ID : 37135116897

Option 1 ID : 37135167588

Option 2 ID : 37135167585

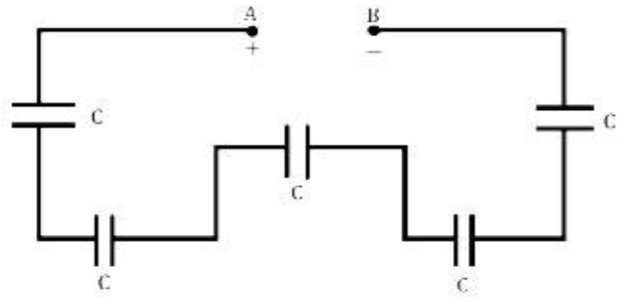
Option 3 ID : 37135167586

Option 4 ID : 37135167587

Status : Answered

Chosen Option : 2

Q.27 Five capacitors each of capacity 'C' are connected as shown in figure. If their resultant capacity is $2\mu\text{F}$, then the capacity of each condenser is



Ans

1. $2.5 \mu\text{F}$

2.

$2 \mu\text{F}$

3. $10 \mu\text{F}$

4. $5 \mu\text{F}$

Question Type : MCQ

Question ID : 37135116866

Option 1 ID : 37135167462

Option 2 ID : 37135167461

Option 3 ID : 37135167464

Option 4 ID : 37135167463

Status : Answered

Chosen Option : 1

Q.28 There are four convex lenses L_1 , L_2 , L_3 and L_4 of focal length 2, 4, 6 and 8 cm respectively. Two of these lenses form a telescope of length 10 cm and magnifying power 4. The objective and eye lenses are respectively

Ans

1. L_1, L_2

2. L_1, L_4

3.

L_2, L_3

4. L_4, L_1

Question Type : MCQ

Question ID : 37135116873

Option 1 ID : 37135167491

Option 2 ID : 37135167490

Option 3 ID : 37135167489

Option 4 ID : 37135167492

Status : Answered

Chosen Option : 2

Q.29

A circular coil of radius 'R' is carrying a current 'I₁' in anticlockwise sense. A long straight wire is carrying current 'I₂' in the negative direction of x axis. Both are placed in the same plane and the distance between centre of coil and straight wire is 'd'. The magnetic field at the centre of coil will be zero for the value of 'd' equal to

Ans

✗ 1. $\frac{\pi}{R} \left(\frac{I_1}{I_2} \right)$

✗ 2. $\frac{\pi}{R} \left(\frac{I_2}{I_1} \right)$

✓ 3. $\frac{R}{\pi} \left(\frac{I_2}{I_1} \right)$

✗ 4. $\frac{R}{\pi} \left(\frac{I_1}{I_2} \right)$

Question Type : MCQ

Question ID : 37135116868

Option 1 ID : 37135167471

Option 2 ID : 37135167472

Option 3 ID : 37135167470

Option 4 ID : 37135167469

Status : Answered

Chosen Option : 1

Q.30

Two wires of different materials have same length ' L ' and same diameter ' d '. The second wire is connected at the end of the first wire and forms one single wire of double the length. This wire is subjected to stretching force ' F ' to produce the elongation ' ℓ '. The two wires have

Ans

1.

same stress and same strain.

2.

different stress but same strain.

3.

different stress and different strain.

4.

same stress but different strain.

Question Type : MCQ

Question ID : 37135116891

Option 1 ID : 37135167561

Option 2 ID : 37135167564

Option 3 ID : 37135167562

Option 4 ID : 37135167563

Status : Answered

Chosen Option : 4

Q.31

An obstacle is moving towards the source with velocity 'v'. The sound is reflected from the obstacle. If 'c' is the speed of sound and ' λ ' is the wavelength, then the wavelength of the reflected wave (λ_r) is

Ans

✓ 1. $\lambda_r = \left(\frac{c-v}{c+v} \right) \lambda$

✗ 2. $\lambda_r = \left(\frac{c-v}{c} \right) \lambda$

✗ 3. $\lambda_r = \left(\frac{c+v}{c-v} \right) \lambda$

✗ 4. $\lambda_r = \left(\frac{c+v}{c} \right) \lambda$

Question Type : MCQ

Question ID : 37135116900

Option 1 ID : 37135167598

Option 2 ID : 37135167600

Option 3 ID : 37135167597

Option 4 ID : 37135167599

Status : Answered

Chosen Option : 1

Q.32 The length of solenoid is ' ℓ ' whose windings are made of material of density ' D ' and resistivity ' ρ '. The winding resistance is ' R '. The inductance of solenoid is
(m = mass of winding wire, μ_0 = permeability of free space)

Ans

1. $\frac{\mu_0}{2\pi\ell} \left(\frac{Rm}{\rho D} \right)$

2. $\frac{\mu_0}{4\pi\ell} \left(\frac{Rm}{\rho D} \right)$

3. $\frac{\mu_0}{2\pi\ell} \left(\frac{\rho D}{Rm} \right)$

4. $\frac{\mu_0}{4\pi\ell} \left(\frac{\rho D}{Rm} \right)$

Question Type : MCQ

Question ID : 37135116875

Option 1 ID : 37135167500

Option 2 ID : 37135167499

Option 3 ID : 37135167498

Option 4 ID : 37135167497

Status : Answered

Chosen Option : 1

Q.33 A block of mass 'm' attached to one end of the vertical spring produces extension 'x'. If the block is pulled and released, the periodic time of oscillation is

Ans 1.

$$2\pi \sqrt{\frac{2x}{g}}$$

2. $2\pi \sqrt{\frac{x}{g}}$

3. $2\pi \sqrt{\frac{x}{2g}}$

4. $2\pi \sqrt{\frac{x}{4g}}$

Question Type : MCQ

Question ID : 37135116885

Option 1 ID : 37135167537

Option 2 ID : 37135167539

Option 3 ID : 37135167538

Option 4 ID : 37135167540

Status : Answered

Chosen Option : 2

Q.34

Refractive index of the medium is ' μ ' and wavelength is λ , then which of the following proportionality relation is correct?

Ans

1. $\mu \propto \frac{1}{\lambda^2}$

2. $\mu \propto \lambda^2$

3. $\mu \propto \frac{1}{\lambda}$

4. $\mu \propto \lambda$

Question Type : MCQ

Question ID : 37135116890

Option 1 ID : 37135167559

Option 2 ID : 37135167560

Option 3 ID : 37135167557

Option 4 ID : 37135167558

Status : Answered

Chosen Option : 3

Q.35

The ratio of energy required to raise a satellite of mass 'm' to a height 'h' above the earth's surface to that required to put it into the orbit at same height is
[R = radius of the earth]

Ans

1. $\frac{h}{R}$

2. $\frac{4h}{R}$

3. $\frac{3h}{R}$

4. $\frac{2h}{R}$

Question Type : **MCQ**

Question ID : **37135116876**

Option 1 ID : **37135167503**

Option 2 ID : **37135167501**

Option 3 ID : **37135167502**

Option 4 ID : **37135167504**

Status : **Answered**

Chosen Option : **1**

Q.36 In communication system, a repeater is used to extend the range of transmission.
It is the combination of

Ans  1.

modulator and power amplifier.

 2.

receiver and transmitter.

 3.

IF stage and amplifier.

 4.

rectifier and detector.

Question Type : MCQ

Question ID : 37135116894

Option 1 ID : 37135167576

Option 2 ID : 37135167575

Option 3 ID : 37135167574

Option 4 ID : 37135167573

Status : Answered

Chosen Option : 2

Q.37 The x, y components of vector \vec{P} have magnitudes 1 and 3 and the x, y components of resultant of \vec{P} and \vec{Q} have magnitudes 5 and 6 respectively. What is the magnitude of \vec{Q} ?

Ans

1. 4

2. 5

3. 3

4. 2

Question Type : **MCQ**

Question ID : **37135116863**

Option 1 ID : **37135167451**

Option 2 ID : **37135167452**

Option 3 ID : **37135167450**

Option 4 ID : **37135167449**

Status : **Answered**

Chosen Option : **2**

Q.38 The ratio of energies of photons produced due to transition of electron of hydrogen atom from its (i) second to first energy level and (ii) highest energy level to 2nd level is respectively

Ans

1. 4 : 1

2. 2 : 1

3. 2.5 : 1

4. 3 : 1

Question Type : **MCQ**

Question ID : **37135116884**

Option 1 ID : **37135167536**

Option 2 ID : **37135167533**

Option 3 ID : **37135167534**

Option 4 ID : **37135167535**

Status : **Answered**

Chosen Option : **1**



Q.39 If the angle of dip at places A and B are 30° and 45° respectively, the ratio of horizontal component of earth's magnetic field at A to that at B will be

$$\left[\sin 45^\circ = \cos 45^\circ = \frac{1}{\sqrt{2}}, \quad \sin \frac{\pi}{6} = \frac{1}{2}, \quad \cos \frac{\pi}{6} = \frac{\sqrt{3}}{2} \right]$$

Ans

1. $\sqrt{2} : 1$

2. $1 : \sqrt{2}$

3. $\sqrt{2} : \sqrt{3}$

4. $\sqrt{3} : \sqrt{2}$

Question Type : **MCQ**

Question ID : **37135116853**

Option 1 ID : **37135167411**

Option 2 ID : **37135167412**

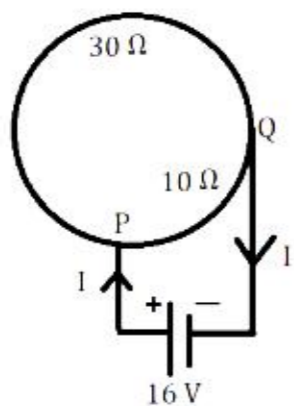
Option 3 ID : **37135167409**

Option 4 ID : **37135167410**

Status : **Answered**

Chosen Option : **4**

Q.40 A circular coil of radius 'R' has a resistance of 40Ω . Figure shows two points 'P' and 'Q' on the circumference separated by a distance $\frac{\pi R}{2}$, which are connected to a 16 V battery with internal resistance of 0.5Ω . What is the value of current 'I' flowing through the circuit?



Ans

1. 1 A

2. 0.5 A

3. 3 A

4. 2 A

Question Type : **MCQ**

Question ID : **37135116860**

Option 1 ID : **37135167439**

Option 2 ID : **37135167440**

Option 3 ID : **37135167437**

Option 4 ID : **37135167438**

Status : **Answered**

Chosen Option : **2**

Q.41

When tension 'T' is applied to a sonometer wire of length ' ℓ ', it vibrates with the fundamental frequency 'n'. Keeping the experimental setup same, when the tension is increased by 8 newton, the fundamental frequency becomes three times the earlier fundamental frequency (n). The initial tension applied to the wire in newton, was

Ans

1. 2.0

2. 0.5

3. 1.0

4. 2.5

Question Type : MCQ

Question ID : 37135116859

Option 1 ID : 37135167435

Option 2 ID : 37135167433

Option 3 ID : 37135167434

Option 4 ID : 37135167436

Status : Answered

Chosen Option : 3

Q.42

The damping force of an oscillator is directly proportional to the velocity. The unit of constant of proportionality is

Ans

1. kg m s^{-2}

2. kg s^{-1}

3. kg m s^{-1}

4. kg s

Question Type : **MCQ**

Question ID : **37135116858**

Option 1 ID : **37135167430**

Option 2 ID : **37135167431**

Option 3 ID : **37135167429**

Option 4 ID : **37135167432**

Status : **Answered**

Chosen Option : **2**

Q.43

As we go from the equator of the earth to pole of the earth, the value of acceleration due to gravity

Ans

1. decreases.

2.

remains same.

3.

decreases up to latitude of 45° and increases thereafter.

4. increases.

Question Type : **MCQ**

Question ID : **37135116852**

Option 1 ID : **37135167406**

Option 2 ID : **37135167405**

Option 3 ID : **37135167407**

Option 4 ID : **37135167408**

Status : **Answered**

Chosen Option : **4**

Q.44

A batsman hits a ball of mass 0.2 kg straight towards the bowler without changing its initial speed of 6 m/s. What is the impulse imparted to the ball?

Ans

✓ 1. 2.4 Ns

✗ 2. 1.6 Ns

✗ 3. 4 Ns

✗ 4. 3.2 Ns

Question Type : **MCQ**

Question ID : **37135116896**

Option 1 ID : **37135167582**

Option 2 ID : **37135167581**

Option 3 ID : **37135167584**

Option 4 ID : **37135167583**

Status : **Answered**

Chosen Option : **1**

Q.45

A particle performs simple harmonic motion with period of 3 second. The time taken by it to cover a distance equal to half the amplitude from mean position is

[$\sin 30^\circ = 0.5$]

Ans

✓ 1. $\frac{1}{4}$ S

✗ 2. $\frac{3}{4}$ S

✗ 3. $\frac{3}{2}$ S

✗ 4. $\frac{1}{2}$ S

Question Type : MCQ

Question ID : 37135116880

Option 1 ID : 37135167519

Option 2 ID : 37135167520

Option 3 ID : 37135167517

Option 4 ID : 37135167518

Status : Answered

Chosen Option : 1

Q.46 A square frame of each side 'L' is dipped in a soap solution and taken out. The force acting on the film formed is (T = surface tension of soap solution)

Ans

✗ 1. 2 TL

✓ 2. 8 TL

✗ 3. 12 TL

✗ 4. $R = (R_1^3 + R_2^3)^{\frac{1}{3}}$

Question Type : MCQ

Question ID : 37135116872

Option 1 ID : 37135167488

Option 2 ID : 37135167486

Option 3 ID : 37135167485

Option 4 ID : 37135167487

Status : Answered

Chosen Option : 2

Q.47 A large open tank containing water has two holes to its wall. A square hole of side 'a' is made at a depth 'y' and a circular hole of radius 'r' is made at a depth '16y' from the surface of water. If equal amount of water comes out through both the holes per second, then the relation between 'r' and 'a' will be

Ans

1. $r = \frac{2a}{\pi}$

2. $r = \frac{a}{2\sqrt{\pi}}$

3. $r = \frac{a}{2\pi}$

4. $r = \frac{2a}{\sqrt{\pi}}$

Question Type : **MCQ**

Question ID : **37135116887**

Option 1 ID : **37135167548**

Option 2 ID : **37135167546**

Option 3 ID : **37135167547**

Option 4 ID : **37135167545**

Status : **Answered**

Chosen Option : **4**

Q.48

A particle of mass 'm' is performing U.C.M. along a circle of radius 'r'. The relation between centripetal acceleration 'a' and kinetic energy 'E' is given by

Ans

✓ 1. $a = \frac{2E}{mr}$

✗ 2. $a = \left(\frac{2E}{mr}\right)^2$

✗ 3. $a = \frac{E}{mr}$

✗ 4. $a = 2 Em$

Question Type : MCQ

Question ID : 37135116889

Option 1 ID : 37135167555

Option 2 ID : 37135167553

Option 3 ID : 37135167554

Option 4 ID : 37135167556

Status : Answered

Chosen Option : 1

Q.49

A block of mass 'M' is moving on rough horizontal surface with momentum 'P'. The coefficient of friction between the block and surface is ' μ '. The distance covered by block before it stops is [g = acceleration due to gravity]

Ans

1. $\frac{2\mu Mg}{P}$

2. $\frac{P}{2\mu Mg}$

3. $\frac{P^2}{2\mu M^2 g}$

4. $\frac{2\mu M^2 g}{P^2}$

Question Type : MCQ

Question ID : 37135116892

Option 1 ID : 37135167567

Option 2 ID : 37135167566

Option 3 ID : 37135167565

Option 4 ID : 37135167568

Status : Answered

Chosen Option : 3

Q.50 The resultant of two vectors \vec{A} and \vec{B} is \vec{C} . If the magnitude of \vec{B} is doubled, the new resultant vector becomes perpendicular to \vec{A} . Then the magnitude of \vec{C} is

Ans

1. $3B$

2. $2B$

3. B

4. $4B$

Question Type : MCQ

Question ID : 37135116878

Option 1 ID : 37135167511

Option 2 ID : 37135167510

Option 3 ID : 37135167509

Option 4 ID : 37135167512

Status : Answered

Chosen Option : 2

Section: Chemistry

Q.1 Which of the following elements belongs to first inner transition series ?

Ans

1. Bk

2. Pu

3. Pr

4. Fm

Question Type : MCQ

Question ID : 37135116945

Option 1 ID : 37135167780

Option 2 ID : 37135167777

Option 3 ID : 37135167779

Option 4 ID : 37135167778

Status : Answered

Chosen Option : 2

Q.2 A solution of CuSO_4 is electrolysed using a current of 1.5 amperes for 10 minutes. What mass of Cu is deposited at cathode ? (At. mass of Cu = 63.7)

Ans

1. 0.395 g

2. 0.150 g

3. 0.637 g

4. 0.297 g

Question Type : MCQ

Question ID : 37135116942

Option 1 ID : 37135167767

Option 2 ID : 37135167765

Option 3 ID : 37135167768

Option 4 ID : 37135167766

Status : Answered

Chosen Option : 1

Q.3 What is IUPAC name of hydroquinone ?

Ans

1. Benzene -1, 4-diol

2. Benzene -1, 3, 5-triol

3. Benzene -1, 2-diol

4. Benzene -1, 2, 4-triol

Question Type : MCQ

Question ID : 37135116904

Option 1 ID : 37135167614

Option 2 ID : 37135167615

Option 3 ID : 37135167613

Option 4 ID : 37135167616

Status : Answered

Chosen Option : 4

Q.4 Which of the following is multimolecular colloid ?

Ans

✓ 1. Silver sol

✗ 2.

Solution of rubber in organic solvent

✗ 3. Aqueous solution of protein

✗ 4. Aqueous polyvinyl alcohol

Question Type : MCQ

Question ID : 37135116907

Option 1 ID : 37135167628

Option 2 ID : 37135167627

Option 3 ID : 37135167625

Option 4 ID : 37135167626

Status : Answered

Chosen Option : 3

Q.5 Equilibrium constant for a reaction is 20. What is the value of ΔG° at 300 K ? ($R = 8 \times 10^{-3} \text{ kJ}$)

Ans

✗ 1. $-5.527 \text{ kJ mol}^{-1}$

✓ 2. $-1.663 \text{ kJ mol}^{-1}$

✗ 3. $16.63 \text{ kJ mol}^{-1}$

✗ 4. $-2.763 \text{ kJ mol}^{-1}$

Question Type : MCQ

Question ID : 37135116903

Option 1 ID : 37135167610

Option 2 ID : 37135167612

Option 3 ID : 37135167611

Option 4 ID : 37135167609

Status : Answered

Chosen Option : 1

Q.6 What is osmotic pressure of a semi molar solution at 27°C ? ($R=0.082$)

Ans

1. 4.96 atm

2. 2.46 atm

3. 20.5 atm

4. 12.3 atm

Question Type : MCQ

Question ID : 37135116933

Option 1 ID : 37135167730

Option 2 ID : 37135167729

Option 3 ID : 37135167732

Option 4 ID : 37135167731

Status : Answered

Chosen Option : 4

Q.7 Identify the process of refining to obtain pig tin

Ans

1. Liquation

2. Mond process

3. van Arkel

4. Polling

Question Type : MCQ

Question ID : 37135116943

Option 1 ID : 37135167771

Option 2 ID : 37135167770

Option 3 ID : 37135167769

Option 4 ID : 37135167772

Status : Answered

Chosen Option : 1

Q.8 Which of the following actinoids exhibits only +3 oxidation state ?

Ans

✓ 1. Lr (z = 103)

✗ 2. U (z = 92)

✗ 3. Th (z = 90)

✗ 4. Pa (z = 91)

Question Type : MCQ

Question ID : 37135116949

Option 1 ID : 37135167796

Option 2 ID : 37135167794

Option 3 ID : 37135167793

Option 4 ID : 37135167795

Status : Answered

Chosen Option : 1

Q.9 60 g CH_3COOH dissolved in 1 dm^3 solvent, what is molality of solution ? (density = 1.25 g/cm^3)

Ans

✓ 1. 0.8 m

✗ 2. 0.4 m

✗ 3. 0.2 m

✗ 4. 0.6 m

Question Type : MCQ

Question ID : 37135116923

Option 1 ID : 37135167692

Option 2 ID : 37135167690

Option 3 ID : 37135167689

Option 4 ID : 37135167691

Status : Answered

Chosen Option : 1

Q.10 A first order reaction has a rate constant 0.00813 min^{-1} . How long will it take for 60% completion ?

Ans

1. 98.7 min

2. 56.35 min

3. 112.7 min

4. 62.77 min

Question Type : MCQ

Question ID : 37135116913

Option 1 ID : 37135167652

Option 2 ID : 37135167649

Option 3 ID : 37135167651

Option 4 ID : 37135167650

Status : Answered

Chosen Option : 3

Q.11 Which among the following is used as an oxidizing agent to bleach wood pulp into white paper ?

Ans

1. $\text{Mn}(\text{OH})_2$

2. Cl_2

3. H_2O_2

4. NaOCl

Question Type : MCQ

Question ID : 37135116924

Option 1 ID : 37135167693

Option 2 ID : 37135167695

Option 3 ID : 37135167696

Option 4 ID : 37135167694

Status : Answered

Chosen Option : 2

Q.12 If entropy of a solid is greater than zero, at $T=0$, it is called

Ans

- 1. standard entropy
- 2. residual entropy
- 3. formal entropy
- 4. absolute entropy

Question Type : MCQ

Question ID : 37135116944

Option 1 ID : 37135167774

Option 2 ID : 37135167773

Option 3 ID : 37135167776

Option 4 ID : 37135167775

Status : Answered

Chosen Option : 2

Q.13 Propane nitrile on reaction with ethyl magnesium iodide in presence of dry ether gives complex.
This imine complex on acid hydrolysis forms

Ans

- 1. 2-Pentanone
- 2. Butanone
- 3. Propanone
- 4. 3-Pentanone

Question Type : MCQ

Question ID : 37135116931

Option 1 ID : 37135167723

Option 2 ID : 37135167722

Option 3 ID : 37135167721

Option 4 ID : 37135167724

Status : Answered

Chosen Option : 4

Q.14 Which of the following metals is refined by vapour phase refining in Mond process ?

Ans

1. Zn

2. Si

3. Ni

4. Zr

Question Type : MCQ

Question ID : 37135116902

Option 1 ID : 37135167608

Option 2 ID : 37135167607

Option 3 ID : 37135167606

Option 4 ID : 37135167605

Status : Answered

Chosen Option : 3

Q.15 Which of the following reaction proves the chlorinating property of phosphorus pentachloride ?

Ans

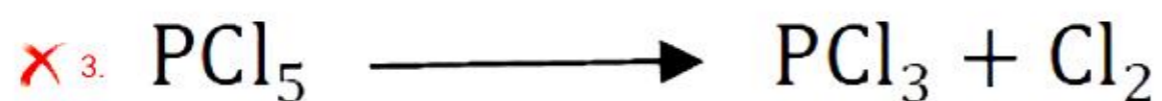
1.



2.



3.



4.



Question Type : MCQ

Question ID : 37135116912

Option 1 ID : 37135167647

Option 2 ID : 37135167645

Option 3 ID : 37135167648

Option 4 ID : 37135167646

Status : Answered

Chosen Option : 4

Q.16 What is the number of =N-OH groups present in dimethyl glyoximate ?

Ans

1. 3

2. 4

3. 1

4. 2

Question Type : MCQ

Question ID : 37135116948

Option 1 ID : 37135167791

Option 2 ID : 37135167792

Option 3 ID : 37135167789

Option 4 ID : 37135167790

Status : Answered

Chosen Option : 4

Q.17 An element crystallises in a bcc lattice with cell edge of 500 pm. The density of the element is 7.5 g cm^{-3} . How many atoms are present in 300 g of metal ?

Ans

1. 12.8×10^{23} atoms

2. 6.4×10^{23} atoms

3. 3.2×10^{23} atoms

4. 1.6×10^{23} atoms

Question Type : MCQ

Question ID : 37135116935

Option 1 ID : 37135167740

Option 2 ID : 37135167739

Option 3 ID : 37135167738

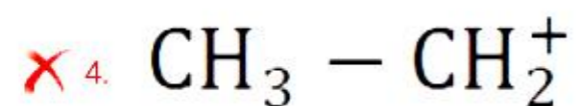
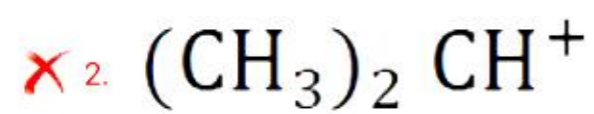
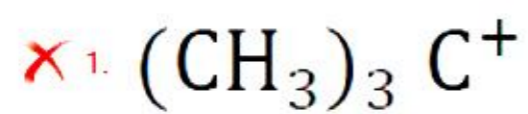
Option 4 ID : 37135167737

Status : Answered

Chosen Option : 2

Q.18 Which among the following carbocation is most reactive ?

Ans



Question Type : MCQ

Question ID : 37135116922

Option 1 ID : 37135167688

Option 2 ID : 37135167687

Option 3 ID : 37135167685

Option 4 ID : 37135167686

Status : Answered

Chosen Option : 1

Q.19 In gas phase H-O-O-H bond angle in H_2O_2 is

Ans

1. 111.5°

2. 94.8°

3. 98.4°

4. 147.5°

Question Type : MCQ

Question ID : 37135116915

Option 1 ID : 37135167657

Option 2 ID : 37135167660

Option 3 ID : 37135167659

Option 4 ID : 37135167658

Status : Answered

Chosen Option : 2

Q.20 If resistivity of 0.8 M KCl solution is $2.5 \times 10^{-3} \Omega \text{ cm}$. Calculate molar conductivity of solution ?

Ans

1. $3 \times 10^5 \Omega^{-1} \text{ cm}^2 \text{ mol}^{-1}$

2. $2 \times 10^5 \Omega^{-1} \text{ cm}^2 \text{ mol}^{-1}$

3. $4 \times 10^5 \Omega^{-1} \text{ cm}^2 \text{ mol}^{-1}$

4. $5 \times 10^5 \Omega^{-1} \text{ cm}^2 \text{ mol}^{-1}$

Question Type : MCQ

Question ID : 37135116950

Option 1 ID : 37135167797

Option 2 ID : 37135167799

Option 3 ID : 37135167800

Option 4 ID : 37135167798

Status : Answered

Chosen Option : 4

Q.21 Which among the following compound is NOT optically active ?

Ans

1. 3 - Chloropentane

2. 2 - Chloropentane

3.

2 - Chloro - 3 - methyl pentane

4.

3 - Chloro - 2 - methyl pentane

Question Type : MCQ

Question ID : 37135116914

Option 1 ID : 37135167654

Option 2 ID : 37135167653

Option 3 ID : 37135167655

Option 4 ID : 37135167656

Status : Answered

Chosen Option : 1

Q.22 Which of the following benzylic alcohol is tertiary alcohol ?

Ans

- 1. Phenyl methanol
- 2. 1- phenyl ethanol
- 3. 2- phenyl propan-2-ol
- 4. 1- phenyl propan-2-ol

Question Type : MCQ

Question ID : 37135116917

Option 1 ID : 37135167665

Option 2 ID : 37135167666

Option 3 ID : 37135167668

Option 4 ID : 37135167667

Status : Answered

Chosen Option : 3

Q.23 Which of the following pairs of aryl halides can NOT be prepared directly by electrophilic substitution ?

Ans

- 1. Aryl bromide and aryl iodide
- 2. Aryl chloride and aryl bromide
- 3. Aryl fluoride and aryl chloride
- 4. Aryl iodide and aryl fluoride

Question Type : MCQ

Question ID : 37135116936

Option 1 ID : 37135167742

Option 2 ID : 37135167741

Option 3 ID : 37135167743

Option 4 ID : 37135167744

Status : Answered

Chosen Option : 4

Q.24 Solutions A, B, C and D are respectively 0.2 M urea, 0.10 M NaCl, 0.05 M BaCl₂ and 0.05 M AlCl₃.

All solutions are isotonic with each other except

Ans

1. B

2. A

3. D

4. C

Question Type : MCQ

Question ID : 37135116939

Option 1 ID : 37135167754

Option 2 ID : 37135167753

Option 3 ID : 37135167756

Option 4 ID : 37135167755

Status : Answered

Chosen Option : 2

Q.25 Which of the following formula represents lithium imide ?

Ans

1. Li₃N

2. LiNH₂

3. Li₂NH

4. LiNH

Question Type : MCQ

Question ID : 37135116934

Option 1 ID : 37135167735

Option 2 ID : 37135167733

Option 3 ID : 37135167736

Option 4 ID : 37135167734

Status : Answered

Chosen Option : 3

Q.26 Which of the following is NOT dihydric phenol ?

Ans

- ✓ 1. α - naphthol
- ✗ 2. Resorcinol
- ✗ 3. Hydroquinone
- ✗ 4. Catechol

Question Type : MCQ

Question ID : 37135116909

Option 1 ID : 37135167636

Option 2 ID : 37135167635

Option 3 ID : 37135167634

Option 4 ID : 37135167633

Status : Answered

Chosen Option : 1

Q.27 Which of the following molecule does not contain oxygen ?

Ans

- ✗ 1. Serotonin
- ✓ 2. Phenezine
- ✗ 3. Veronal
- ✗ 4. Iproniazid

Question Type : MCQ

Question ID : 37135116932

Option 1 ID : 37135167727

Option 2 ID : 37135167725

Option 3 ID : 37135167728

Option 4 ID : 37135167726

Status : Answered

Chosen Option : 2

Q.28 Which of the following properties is of the thermosetting polymers ?

Ans 1.

These are cross linked polymers

2. These can be remoulded

3. These can be recycled

4.

On heating these become soft

Question Type : MCQ

Question ID : 37135116919

Option 1 ID : 37135167673

Option 2 ID : 37135167675

Option 3 ID : 37135167676

Option 4 ID : 37135167674

Status : Answered

Chosen Option : 1

Q.29 In which of the following compounds intra molecular hydrogen bonding is present ?

Ans

1. ethanol

2. o- nitrophenol

3. water

4. ammonia

Question Type : MCQ

Question ID : 37135116938

Option 1 ID : 37135167751

Option 2 ID : 37135167750

Option 3 ID : 37135167752

Option 4 ID : 37135167749

Status : Answered

Chosen Option : 2

Q.30 Which of the following compounds does NOT contain $>C=O$ group?

Ans

- ✓ 1. Ether
- ✗ 2. Ester
- ✗ 3. Amide
- ✗ 4. Acyl halide

Question Type : MCQ

Question ID : 37135116941

Option 1 ID : 37135167763

Option 2 ID : 37135167764

Option 3 ID : 37135167762

Option 4 ID : 37135167761

Status : Answered

Chosen Option : 1

Q.31 Silver crystallises in fcc structure, if edge length of unit cell is 316.5 pm. What is the radius of silver atom ?

Ans

- ✗ 1. 137.04 pm
- ✓ 2. 111.91 pm
- ✗ 3. 121.91 pm
- ✗ 4. 158.25 pm

Question Type : MCQ

Question ID : 37135116927

Option 1 ID : 37135167707

Option 2 ID : 37135167705

Option 3 ID : 37135167706

Option 4 ID : 37135167708

Status : Answered

Chosen Option : 2

Q.32 Which polymer from following is used as synthetic leather ?

Ans

1. Bakelite

2. PVC

3. Polystyrene

4. Polythene

Question Type : MCQ

Question ID : 37135116911

Option 1 ID : 37135167643

Option 2 ID : 37135167644

Option 3 ID : 37135167642

Option 4 ID : 37135167641

Status : Answered

Chosen Option : 3

Q.33 Which of the following is NOT a character of ideal drug ?

Ans

1.

Should destroy harmful organisms

2.

Should not disturb physiological process

3. Harmless to host

4.

Is not localised to affected site

Question Type : MCQ

Question ID : 37135116946

Option 1 ID : 37135167783

Option 2 ID : 37135167781

Option 3 ID : 37135167782

Option 4 ID : 37135167784

Status : Answered

Chosen Option : 3

Q.34 An acylchloride is hydrogenated over catalyst palladium on barium sulphate to form an aldehyde. This reaction is called as

Ans

- 1. Stephen reaction
- 2. Rosenmund reduction
- 3. Etard reaction
- 4. Wolff- Kishner reduction

Question Type : MCQ

Question ID : 37135116925

Option 1 ID : 37135167698

Option 2 ID : 37135167697

Option 3 ID : 37135167699

Option 4 ID : 37135167700

Status : Answered

Chosen Option : 2

Q.35 An element has a bcc structure with cell edge of 288 pm. The density of element is 7.2 g cm^{-3} .
What is the atomic mass of an element ?

Ans

- 1. 51.78
- 2. 25.89
- 3. 62.43
- 4. 77.68

Question Type : MCQ

Question ID : 37135116906

Option 1 ID : 37135167622

Option 2 ID : 37135167621

Option 3 ID : 37135167623

Option 4 ID : 37135167624

Status : Answered

Chosen Option : 3

Q.36 Work done when 2 mol of an ideal gas is compressed from a volume of 5m^3 to 2.5m^3 at 300 K, under a pressure of 100 k pa is

Ans

✓ 1. 497.5 kJ

✗ 2. 99.50 kJ

✗ 3. 248.7 kJ

✗ 4. 49.75 kJ

Question Type : MCQ

Question ID : 37135116908

Option 1 ID : 37135167630

Option 2 ID : 37135167632

Option 3 ID : 37135167631

Option 4 ID : 37135167629

Status : Answered

Chosen Option : 3

Q.37 What is the secondary valence of Co^{3+} ion according to Werner's theory in $[\text{Co}(\text{NH}_3)_4\text{Cl}_2]^+$?

Ans

✗ 1. 5

✗ 2. 4

✗ 3. 3

✓ 4. 6

Question Type : MCQ

Question ID : 37135116940

Option 1 ID : 37135167759

Option 2 ID : 37135167758

Option 3 ID : 37135167757

Option 4 ID : 37135167760

Status : Answered

Chosen Option : 4

Q.38 What is the value of rate constant of first order reaction, if it takes 15 minutes for consumption of 20% of reactants ?

Ans

✗ 1. $1.84 \times 10^{-2} \text{ min}^{-1}$

✗ 2. $1.38 \times 10^{-2} \text{ min}^{-1}$

✗ 3. $1.07 \times 10^{-2} \text{ min}^{-1}$

✓ 4. $1.48 \times 10^{-2} \text{ min}^{-1}$

Question Type : MCQ

Question ID : 37135116920

Option 1 ID : 37135167680

Option 2 ID : 37135167678

Option 3 ID : 37135167677

Option 4 ID : 37135167679

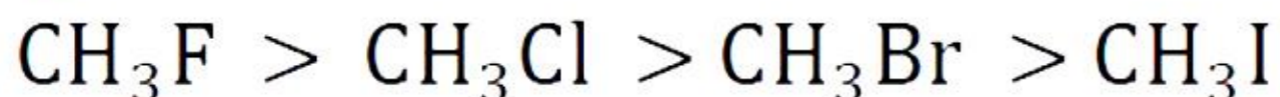
Status : Answered

Chosen Option : 3

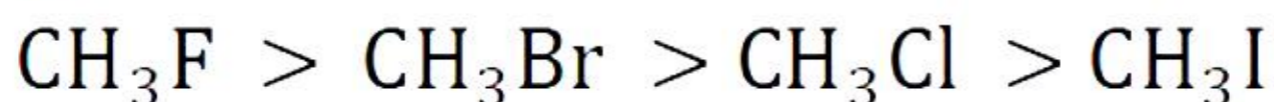
Q.39 What is correct order of C–X bond strength in $\text{CH}_3\text{–X}$?

Ans

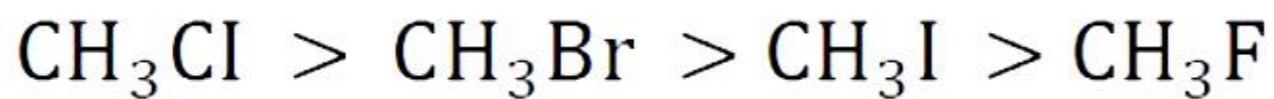
✓ 1.



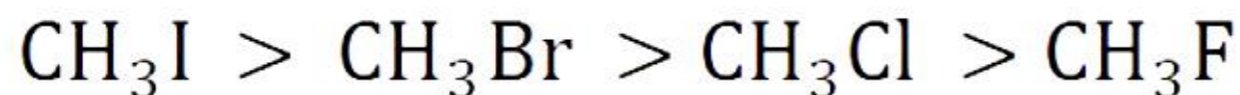
✗ 2.



✗ 3.



✗ 4.



Question Type : MCQ

Question ID : 37135116901

Option 1 ID : 37135167604

Option 2 ID : 37135167602

Option 3 ID : 37135167603

Option 4 ID : 37135167601

Status : Answered

Chosen Option : 1

Q.40 Number of oxygen atoms present in salicylaldehyde are

Ans

1. 3

2. 1

3. 2

4. 4

Question Type : MCQ

Question ID : 37135116930

Option 1 ID : 37135167717

Option 2 ID : 37135167720

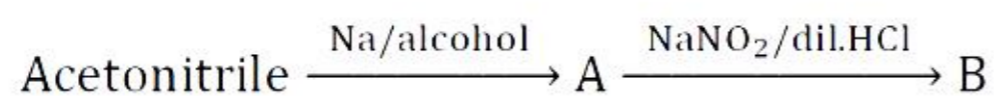
Option 3 ID : 37135167719

Option 4 ID : 37135167718

Status : Answered

Chosen Option : 3

Q.41 Identify compound 'B' in following series of reactions ?



Ans

1. Nitroethane

2. Ethyl chloride

3. Ethyl alcohol

4. Ethyl amine

Question Type : MCQ

Question ID : 37135116905

Option 1 ID : 37135167620

Option 2 ID : 37135167618

Option 3 ID : 37135167619

Option 4 ID : 37135167617

Status : Answered

Chosen Option : 1

Q.42 How many numbers of P-OH and P-O-P bonds are present in pyrophosphoric acid respectively?

Ans

1. 3, 1

2. 4, 1

3. 4, 3

4. 3, 3

Question Type : MCQ

Question ID : 37135116916

Option 1 ID : 37135167661

Option 2 ID : 37135167662

Option 3 ID : 37135167664

Option 4 ID : 37135167663

Status : Answered

Chosen Option : 2

Q.43 The common name of 1-Chloro -2, 2-dimethyl propane is

Ans

1. neo-pentyl chloride

2. isopropyl chloride

3. n-pentyl chloride

4. isopentyl chloride

Question Type : MCQ

Question ID : 37135116929

Option 1 ID : 37135167716

Option 2 ID : 37135167713

Option 3 ID : 37135167714

Option 4 ID : 37135167715

Status : Answered

Chosen Option : 1

Q.44 Identify the hydrocarbon compound from following containing carbon atoms in the range of C_6 to C_8 ?

Ans

1. Waxes

2. Petrol

3. Diesel

4. CNG

Question Type : **MCQ**

Question ID : **37135116910**

Option 1 ID : **37135167640**

Option 2 ID : **37135167638**

Option 3 ID : **37135167637**

Option 4 ID : **37135167639**

Status : **Answered**

Chosen Option : **1**

Q.45 If 2 moles of an ideal gas at 546 K has volume of 44.8 L, then what will be it's pressure ?
($R = 0.082$)

Ans

1. 1.998 atm

2. 1.098 atm

3. 2.408 atm

4. 3.129 atm

Question Type : **MCQ**

Question ID : **37135116918**

Option 1 ID : **37135167670**

Option 2 ID : **37135167669**

Option 3 ID : **37135167671**

Option 4 ID : **37135167672**

Status : **Answered**

Chosen Option : **1**

Q.46 Which of the following reaction of diazonium salt involves retention of diazonium group ?

Ans

✓ 1. Reaction with phenol

✗ 2.

Reaction with phosphinic acid

✗ 3.

Reaction with dilute sulphuric acid

✗ 4.

Reaction with HCl and Cu powder

Question Type : MCQ

Question ID : 37135116928

Option 1 ID : 37135167711

Option 2 ID : 37135167710

Option 3 ID : 37135167712

Option 4 ID : 37135167709

Status : Answered

Chosen Option : 1

Q.47 Which of the following is obtained by catalytic oxidation of ammonia ?

Ans

✗ 1. N_2O

✓ 2. NO

✗ 3. HNO_2

✗ 4. NO_2

Question Type : MCQ

Question ID : 37135116921

Option 1 ID : 37135167683

Option 2 ID : 37135167682

Option 3 ID : 37135167681

Option 4 ID : 37135167684

Status : Answered

Chosen Option : 2

Q.48 The volume of oxygen required for complete combustion of 0.25 mole of methane at S.T.P. is

Ans

- 1. 5.6 dm^3
- 2. 7.46 dm^3
- 3. 22.4 dm^3
- 4. 11.2 dm^3

Question Type : MCQ

Question ID : 37135116937

Option 1 ID : 37135167745

Option 2 ID : 37135167746

Option 3 ID : 37135167748

Option 4 ID : 37135167747

Status : Answered

Chosen Option : 1

Q.49 What is the product obtained when Br_2 water reacts with glucose ?

Ans

- 1. Gluconic acid
- 2. Saccharic acid
- 3. 1, 6- dibromo glucose
- 4. Bromohexane

Question Type : MCQ

Question ID : 37135116947

Option 1 ID : 37135167787

Option 2 ID : 37135167788

Option 3 ID : 37135167786

Option 4 ID : 37135167785

Status : Answered

Chosen Option : 3

Q.50 Which among the following compounds is obtained when glucose react with hydrogen cyanide ?

Ans

- 1. n - Hexane
- 2. Glucose cyanohydrin
- 3. Gluconic acid
- 4. Saccharic acid

Question Type : MCQ

Question ID : 37135116926

Option 1 ID : 37135167703

Option 2 ID : 37135167704

Option 3 ID : 37135167701

Option 4 ID : 37135167702

Status : Answered

Chosen Option : 2

Q.1 Mathematics

Q.1

For any non - zero vectors \vec{a} and \vec{b} , $[\vec{b} \quad \vec{a} \times \vec{b} \quad \vec{a}] =$

Ans

- 1. $|\vec{a} \times \vec{b}|$
- 2. $|\vec{a} \times \vec{b}|^2$
- 3. 0
- 4. $\vec{a} \times \vec{b}$

Question Type : MCQ

Question ID : 37135116995

Option 1 ID : 37135167978

Option 2 ID : 37135167979

Option 3 ID : 37135167980

Option 4 ID : 37135167977

Status : Answered

Chosen Option : 3

Q.2

The integrating factor of the differential equation $\sin y \left(\frac{dy}{dx} \right) = \cos y (1 - x \cos y)$ is

Ans

✓ 1. e^{-x}

✗ 2. $e^{-\cos y}$

✗ 3. e^{-y}

✗ 4. $e^{\sin y}$

Question Type : MCQ

Question ID : 37135116964

Option 1 ID : 37135167853

Option 2 ID : 37135167856

Option 3 ID : 37135167854

Option 4 ID : 37135167855

Status : Answered

Chosen Option : 2

Q.3

$$\int \frac{1 + 2e^{-x}}{1 - 2e^{-x}} dx =$$

Ans

✗ 1. $x - \log(1 - 2e^{-x}) + c$

✗ 2. $\log(1 - 2e^{-x}) + c$

✗ 3. $x + \log(1 - 2e^{-x}) + c$

✓ 4. $x + 2\log(1 - 2e^{-x}) + c$

Question Type : MCQ

Question ID : 37135116987

Option 1 ID : 37135167947

Option 2 ID : 37135167945

Option 3 ID : 37135167946

Option 4 ID : 37135167948

Status : Answered

Chosen Option : 3



Q.4

If $\sin(x+y) + \cos(x+y) = \sin\left[\cos^{-1}\left(\frac{1}{3}\right)\right]$, then $\frac{dy}{dx} =$

Ans

1. $\frac{1}{2}$

2. -1

3. 1

4. 0

Question Type : MCQ

Question ID : 37135116974

Option 1 ID : 37135167896

Option 2 ID : 37135167895

Option 3 ID : 37135167893

Option 4 ID : 37135167894

Status : Answered

Chosen Option : 2

Q.5 The area included between the parabolas $y^2 = 5x$ and $x^2 = 5y$ is

Ans

1. $\frac{25}{7}$ sq. units

2. $\frac{25}{3}$ sq. units

3. $\frac{25}{4}$ sq. units

4. 25 sq. units

Question Type : MCQ

Question ID : 37135116998

Option 1 ID : 37135167989

Option 2 ID : 37135167990

Option 3 ID : 37135167991

Option 4 ID : 37135167992

Status : Answered

Chosen Option : 2

Q.6 The micro-organisms double themselves in 3 hours. Assuming that the quantity increases at a rate proportional to it self, then the number of times it multiplies themselves in 18 years is

Ans

1. 32

2. 64

3. 128

4. 40

Question Type : MCQ

Question ID : 37135116999

Option 1 ID : 37135167993

Option 2 ID : 37135167995

Option 3 ID : 37135167996

Option 4 ID : 37135167994

Status : Answered

Chosen Option : 3

Q.7

The points A $(-a, -b)$, B $(0,0)$, C (a,b) and D (a^2, ab) are

Ans

- 1. collinear
- 2. vertices of a parallelogram
- 3. vertices of a square
- 4. vertices of a rectangle

Question Type : MCQ

Question ID : 37135116976

Option 1 ID : 37135167902

Option 2 ID : 37135167904

Option 3 ID : 37135167901

Option 4 ID : 37135167903

Status : Answered

Chosen Option : 1

Q.8

The domain of the function $f(x) = \sqrt{x}$ is

Ans

- 1. $\mathbb{R} - \{0\}$
- 2. \mathbb{R}^+
- 3. $\mathbb{R}^+ \cup \{0\}$
- 4. \mathbb{R}

Question Type : MCQ

Question ID : 37135116986

Option 1 ID : 37135167942

Option 2 ID : 37135167943

Option 3 ID : 37135167944

Option 4 ID : 37135167941

Status : Answered

Chosen Option : 4

Q.9 The cosine of the angle included between the lines
 $\vec{r} = (2\hat{i} + \hat{j} - 2\hat{k}) + \lambda(\hat{i} - 2\hat{j} - 2\hat{k})$ and $\vec{r} = (\hat{i} + \hat{j} + 3\hat{k}) + \mu(3\hat{i} + 2\hat{j} - 6\hat{k})$,
where $\lambda, \mu \in \mathbb{R}$ is

Ans

1. $\frac{13}{21}$

2. $\frac{11}{21}$

3. $\frac{3}{21}$

4. $\frac{17}{21}$

Question Type : MCQ

Question ID : 37135116952

Option 1 ID : 37135167805

Option 2 ID : 37135167806

Option 3 ID : 37135167807

Option 4 ID : 37135167808

Status : Answered

Chosen Option : 2

Q.10

The value of $\tan^{-1}\left(\frac{1}{3}\right) + \tan^{-1}\left(\frac{1}{5}\right) + \tan^{-1}\left(\frac{1}{7}\right) + \tan^{-1}\left(\frac{1}{8}\right)$ is

Ans

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

2. $\frac{\pi}{12}$

3. $\frac{\pi}{4}$

4. $\frac{\pi}{6}$

Question Type : MCQ

Question ID : 37135116961

Option 1 ID : 37135167841

Option 2 ID : 37135167844

Option 3 ID : 37135167842

Option 4 ID : 37135167843

Status : Answered

Chosen Option : 3

Q.11 The maximum value of $Z = 3x + 5y$, subject to $3x + 2y \leq 18$, $x \leq 4$, $y \leq 6$,
 $x, y \geq 0$ is

Ans

1. 30

2. 27

3. 36

4. 32

Question Type : MCQ

Question ID : 37135116958

Option 1 ID : 37135167829

Option 2 ID : 37135167831

Option 3 ID : 37135167830

Option 4 ID : 37135167832

Status : Answered

Chosen Option : 3

Q.12

$$\cos(36^\circ - A) \cos(36^\circ + A) + \cos(54^\circ + A) \cos(54^\circ - A) =$$

Ans

✓ 1. $\cos 2A$

✗ 2. $\cos A$

✗ 3. $\sin 2A$

✗ 4. $\sin A$

Question Type : MCQ

Question ID : 37135116956

Option 1 ID : 37135167823

Option 2 ID : 37135167822

Option 3 ID : 37135167821

Option 4 ID : 37135167824

Status : Answered

Chosen Option : 1

Q.13

The equation of normal to the curve $y = \sin\left(\frac{\pi x}{4}\right)$ at the point (2, 5) is

Ans

✗ 1. $x + y = 5$

✗ 2. $y = 5$

✓ 3. $x = 2$

✗ 4. $x + y = 2$

Question Type : MCQ

Question ID : 37135116959

Option 1 ID : 37135167836

Option 2 ID : 37135167835

Option 3 ID : 37135167833

Option 4 ID : 37135167834

Status : Answered

Chosen Option : 3

Q.14 For $f(x) = [x]$, where $[x]$ is the greatest integer function, which of the following is true, for every $x \in \mathbb{R}$.

Ans

✗ 1. $[x] + 1 = x$

✗ 2. $[x] + 1 \leq x$

✗ 3. $[x] + 1 > x$

✓ 4. $[x] + 1 < x$

Question Type : MCQ

Question ID : 37135116960

Option 1 ID : 37135167838

Option 2 ID : 37135167839

Option 3 ID : 37135167840

Option 4 ID : 37135167837

Status : Answered

Chosen Option : 1

Q.15 For every value of x , the function $f(x) = \frac{1}{a^x}$, $a > 0$ is

Ans

✓ 1. decreasing

✗ 2. increasing

✗ 3. Constant

✗ 4.

Neither increasing nor decreasing

Question Type : MCQ

Question ID : 37135116962

Option 1 ID : 37135167845

Option 2 ID : 37135167846

Option 3 ID : 37135167847

Option 4 ID : 37135167848

Status : Answered

Chosen Option : 1

Q.16 Let G be the centroid of a triangle ABC and O be any other point in that plane, then
 $\overline{OA} + \overline{OB} + \overline{OC} + \overline{OG} =$

Ans

✓ 1. $4 \overline{OG}$

✗ 2. \overline{O}

✗ 3. $3 \overline{OG}$

✗ 4. $2 \overline{OG}$

Question Type : MCQ

Question ID : 37135117000

Option 1 ID : 37135168000

Option 2 ID : 37135167997

Option 3 ID : 37135167999

Option 4 ID : 37135167998

Status : Answered

Chosen Option : 1

Q.17 The rate at which the metal cools in moving air is proportional to the difference of temperatures between the metal and air. If the air temperature is 290K and the metal temperature drops from 370 K to 330 K in 10 minutes, then the time required to drop the temperature upto 295 K is

Ans

✓ 1. 40 min

✗ 2. 20 min

✗ 3. 35 min

✗ 4. 30 min

Question Type : MCQ

Question ID : 37135116969

Option 1 ID : 37135167873

Option 2 ID : 37135167876

Option 3 ID : 37135167875

Option 4 ID : 37135167874

Status : Answered

Chosen Option : 2

Q.18

$$\int_{\frac{\pi}{5}}^{\frac{3\pi}{10}} \left[\frac{\tan x}{\tan x + \cot x} \right] dx =$$

Ans

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

2. $\frac{3\pi}{10}$

3. $\frac{\pi}{5}$

4. $\frac{\pi}{20}$

Question Type : MCQ

Question ID : 37135116957

Option 1 ID : 37135167827

Option 2 ID : 37135167826

Option 3 ID : 37135167825

Option 4 ID : 37135167828

Status : Answered

Chosen Option : 4

Q.19 If p, q are true statement and r is false statement, then which of the following statements is a true statement.

Ans

1. $(p \wedge q) \rightarrow r$ is true.

2. $(p \rightarrow r) \rightarrow q$ is false.

3. $(p \vee q) \vee r$ is false.

4. $(p \leftrightarrow q) \leftrightarrow r$ is false.

Question Type : MCQ

Question ID : 37135116971

Option 1 ID : 37135167881

Option 2 ID : 37135167884

Option 3 ID : 37135167882

Option 4 ID : 37135167883

Status : Answered

Chosen Option : 4

Q.20

$$\int_{-5}^5 \log \left(\frac{7-x}{7+x} \right) dx =$$

Ans

1. 5

2. 0

3. -5

4. 10

Question Type : MCQ

Question ID : 37135116996

Option 1 ID : 37135167981

Option 2 ID : 37135167984

Option 3 ID : 37135167983

Option 4 ID : 37135167982

Status : Answered

Chosen Option : 2

Q.21 The direction co-sines of the line which bisects the angle between positive direction of Y and Z axes are

Ans

1. $\frac{1}{\sqrt{2}}, 0, \frac{1}{\sqrt{2}}$

2. $\frac{1}{\sqrt{2}}, \frac{1}{\sqrt{2}}, 0$

3. $0, \frac{1}{\sqrt{2}}, \frac{1}{\sqrt{2}}$

4. $\frac{1}{\sqrt{2}}, \frac{1}{\sqrt{2}}, \frac{1}{\sqrt{2}}$

Question Type : MCQ

Question ID : 37135116968

Option 1 ID : 37135167871

Option 2 ID : 37135167869

Option 3 ID : 37135167870

Option 4 ID : 37135167872

Status : Answered

Chosen Option : 3

Q.22

If $f(x) = \frac{|x|}{x}$, for $x \neq 0$
 $= 1$, for $x = 0$, then the function is

Ans 1.

continuous but not differentiable at $x = 0$

2.

differentiable but not continuous at $x = 0$

3.

neither continuous nor differentiable at $x = 0$

4.

continuous and differentiable at $x = 0$

Question Type : **MCQ**

Question ID : **37135116984**

Option 1 ID : **37135167933**

Option 2 ID : **37135167934**

Option 3 ID : **37135167936**

Option 4 ID : **37135167935**

Status : **Answered**

Chosen Option : **3**

Q.23 Out of 100 people selected at random, 10 have common cold. If five persons selected at random from the group, then the probability that at most one person will have common cold is

Ans

1. 0.9254

2. 0.9185

3. 0.9851

4. 0.9245

Question Type : MCQ

Question ID : 37135116955

Option 1 ID : 37135167817

Option 2 ID : 37135167819

Option 3 ID : 37135167818

Option 4 ID : 37135167820

Status : Answered

Chosen Option : 4

Q.24

The matrix $A = \begin{bmatrix} a & -1 & 4 \\ -3 & 0 & 1 \\ -1 & 1 & 2 \end{bmatrix}$ is not invertible only if $a =$

Ans

1. - 17

2. - 16

3. 16

4. 17

Question Type : MCQ

Question ID : 37135116973

Option 1 ID : 37135167890

Option 2 ID : 37135167892

Option 3 ID : 37135167891

Option 4 ID : 37135167889

Status : Answered

Chosen Option : 1

Q.25

$$\int \frac{dx}{\cos 2x - \cos^2 x} =$$

Ans

1. $-\cot x + c$

2. $\tan x + c$

3. $-\tan x + c$

4. $\cot x + c$

Question Type : MCQ

Question ID : 37135116993

Option 1 ID : 37135167970

Option 2 ID : 37135167971

Option 3 ID : 37135167972

Option 4 ID : 37135167969

Status : Answered

Chosen Option : 4

Q.26 The straight lines represented by the equation $9x^2 - 12xy + 4y^2 = 0$ are

Ans

1. coincident

2. perpendicular

3. intersect at 60°

4. parallel

Question Type : MCQ

Question ID : 37135116963

Option 1 ID : 37135167852

Option 2 ID : 37135167850

Option 3 ID : 37135167851

Option 4 ID : 37135167849

Status : Answered

Chosen Option : 1

Q.27 The length of latus -rectum of the parabola $x^2 + 2y = 8x - 7$ is

Ans

1. 8

2. 2

3. 6

4. 4

Question Type : MCQ

Question ID : 37135116951

Option 1 ID : 37135167804

Option 2 ID : 37135167801

Option 3 ID : 37135167803

Option 4 ID : 37135167802

Status : Answered

Chosen Option : 1

Q.28

In a ΔABC if $2 \cos C = \sin B \cdot \operatorname{cosec} A$, then

Ans

1. $a = b$

2. $b = c$

3. $a = c$

4. $a = b = c$

Question Type : MCQ

Question ID : 37135116991

Option 1 ID : 37135167963

Option 2 ID : 37135167961

Option 3 ID : 37135167962

Option 4 ID : 37135167964

Status : Answered

Chosen Option : 3

Q.29

If $f(x) = \sin^{-1} \left(\sqrt{\frac{1-x}{2}} \right)$, then $f'(x) =$

Ans

✓ 1. $\frac{-1}{2\sqrt{1-x^2}}$

✗ 2. $\frac{1}{\sqrt{1-x^2}}$

✗ 3. $\frac{-1}{2\sqrt{1+x^2}}$

✗ 4. $\frac{1}{2\sqrt{1+x^2}}$

Question Type : MCQ

Question ID : 37135116975

Option 1 ID : 37135167897

Option 2 ID : 37135167898

Option 3 ID : 37135167900

Option 4 ID : 37135167899

Status : Answered

Chosen Option : 1

Q.30

$$\left[\sin \left(\tan^{-1} \frac{3}{4} \right) \right]^2 + \left[\sin \left(\tan^{-1} \frac{4}{3} \right) \right]^2 =$$

Ans

1. 5

2. 1

3. -1

4. 0

Question Type : MCQ

Question ID : 37135116988

Option 1 ID : 37135167952

Option 2 ID : 37135167949

Option 3 ID : 37135167951

Option 4 ID : 37135167950

Status : Answered

Chosen Option : 2

Q.31

The function $f(x) = \frac{x+1}{9x+x^3}$ is

Ans 1.

discontinuous at exactly two points.

2.

continuous for all real values of x .

3.

discontinuous at exactly three points.

4.

discontinuous at exactly one point.

Question Type : MCQ

Question ID : 37135116967

Option 1 ID : 37135167866

Option 2 ID : 37135167868

Option 3 ID : 37135167867

Option 4 ID : 37135167865

Status : Answered

Chosen Option : 1

Q.32

$$\tan A + 2 \tan 2A + 4 \tan 4A + 8 \cot 8A =$$

Ans

✗ 1. $\tan A$

✓ 2. $\cot A$

✗ 3. $\tan 2A$

✗ 4. $\cot 2A$

Question Type : MCQ

Question ID : 37135116965

Option 1 ID : 37135167857

Option 2 ID : 37135167860

Option 3 ID : 37135167858

Option 4 ID : 37135167859

Status : Answered

Chosen Option : 1

Q.33

The particular solution of the differential equation $y \left(\frac{dx}{dy} \right) = x \log x$ at $x = e$ and $y = 1$ is

Ans

✗ 1. $e^{xy} = 2$

✓ 2. $x = e^y$

✗ 3. $xy = 2$

✗ 4. $\log x = 2y$

Question Type : MCQ

Question ID : 37135116953

Option 1 ID : 37135167812

Option 2 ID : 37135167810

Option 3 ID : 37135167811

Option 4 ID : 37135167809

Status : Answered

Chosen Option : 2

Q.34

If $A = \begin{bmatrix} 2 & 3 \\ 1 & 2 \end{bmatrix}$, $B = \begin{bmatrix} 1 & 0 \\ 3 & 1 \end{bmatrix}$, then $B^{-1}A^{-1} =$

Ans

✓^{1.} $\begin{bmatrix} 2 & -3 \\ -7 & 11 \end{bmatrix}$

✗^{2.} $\begin{bmatrix} 2 & 3 \\ 7 & 11 \end{bmatrix}$

✗^{3.} $\begin{bmatrix} -2 & -3 \\ -7 & 11 \end{bmatrix}$

✗^{4.} $\begin{bmatrix} -2 & -3 \\ -7 & -11 \end{bmatrix}$

Question Type : MCQ

Question ID : 37135116985

Option 1 ID : 37135167939

Option 2 ID : 37135167940

Option 3 ID : 37135167937

Option 4 ID : 37135167938

Status : Answered

Chosen Option : 1

Q.35

The odds in favour of drawing a king from a pack of 52 playing cards is

Ans

✓^{1.} 1 : 12

✗^{2.} 4 : 1

✗^{3.} 12 : 1

✗^{4.} 1 : 4

Question Type : MCQ

Question ID : 37135116989

Option 1 ID : 37135167955

Option 2 ID : 37135167954

Option 3 ID : 37135167956

Option 4 ID : 37135167953

Status : Answered

Chosen Option : 1



Q.36

The eccentricity of the ellipse $y^2 + 4x^2 - 12x + 6y + 14 = 0$ is

Ans

✓ 1. $\frac{\sqrt{3}}{2}$

✗ 2. $\frac{1}{\sqrt{3}}$

✗ 3. $\frac{1}{2}$

✗ 4. $\frac{1}{\sqrt{2}}$

Question Type : **MCQ**

Question ID : **37135116979**

Option 1 ID : **37135167915**

Option 2 ID : **37135167916**

Option 3 ID : **37135167913**

Option 4 ID : **37135167914**

Status : **Answered**

Chosen Option : **1**

Q.37 If the equation $ax^2 + 2hxy + by^2 + 2gx + 2fy = 0$ has one line as the bisector of the angle between co-ordinate axes, then

Ans

✗ 1. $(a + b)^2 = 4(h^2 + g^2)$

✓ 2. $(a + b)^2 = 4h^2$

✗ 3. $(a + b)^2 = 4(h^2 + f^2)$

✗ 4. $(a + b)^2 = 4(h^2 + g^2 + f^2)$

Question Type : MCQ

Question ID : 37135116992

Option 1 ID : 37135167965

Option 2 ID : 37135167966

Option 3 ID : 37135167967

Option 4 ID : 37135167968

Status : Answered

Chosen Option : 2

Q.38 If the volume of the parallelepiped whose conterminous edges are along the vectors $\vec{a}, \vec{b}, \vec{c}$ is 12, then the volume of the tetrahedron whose conterminous edges are $\vec{a} + \vec{b}, \vec{b} + \vec{c}$ and $\vec{c} + \vec{a}$ is

Ans

✓^{1.} $4 (\text{units})^3$

✗^{2.} $24 (\text{units})^3$

✗^{3.} $6 (\text{units})^3$

✗^{4.} $12 (\text{units})^3$

Question Type : MCQ

Question ID : 37135116966

Option 1 ID : 37135167861

Option 2 ID : 37135167863

Option 3 ID : 37135167864

Option 4 ID : 37135167862

Status : Answered

Chosen Option : 1

Q.39

If the plane $2x + 3y + 5z = 1$ intersects the co-ordinate axes at the points A,B,C, then the centroid of ΔABC is

Ans

1. $\left(\frac{3}{2}, 1, \frac{3}{5}\right)$

2. $\left(\frac{1}{2}, \frac{1}{3}, \frac{1}{5}\right)$

3. $\left(\frac{1}{6}, \frac{1}{9}, \frac{1}{15}\right)$

4. $(2, 3, 5)$

Question Type : MCQ

Question ID : 37135116978

Option 1 ID : 37135167911

Option 2 ID : 37135167909

Option 3 ID : 37135167912

Option 4 ID : 37135167910

Status : Answered

Chosen Option : 3

Q.40

The angle between the lines $\frac{x-1}{4} = \frac{y-3}{1} = \frac{z}{8}$ and $\frac{x-2}{2} = \frac{y+1}{2} = \frac{z-4}{1}$ is

Ans

1. $\cos^{-1} \left(\frac{3}{4} \right)$

2. $\cos^{-1} \left(\frac{1}{3} \right)$

3. $\cos^{-1} \left(\frac{1}{2} \right)$

4. $\cos^{-1} \left(\frac{2}{3} \right)$

Question Type : MCQ

Question ID : 37135116983

Option 1 ID : 37135167932

Option 2 ID : 37135167930

Option 3 ID : 37135167929

Option 4 ID : 37135167931

Status : Answered

Chosen Option : 4

Q.41 The p.d.f. of a continuous r.v. X is given by $f(x) = \frac{x}{8}, 0 < x < 4$
 $= 0$, otherwise, then $P(X \leq 2)$ is

Ans

1. $\frac{5}{16}$

2. $\frac{9}{16}$

3. $\frac{7}{16}$

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

Question Type : MCQ

Question ID : 37135116977

Option 1 ID : 37135167906

Option 2 ID : 37135167908

Option 3 ID : 37135167907

Option 4 ID : 37135167905

Status : Answered

Chosen Option : 3

Q.42

$$\int \left[\frac{\log x - 1}{1 + (\log x)^2} \right]^2 dx =$$

Ans

1. $\frac{x}{(1+\log x)} + c$

2. $\frac{x}{1+(\log x)^2} + c$

3. $\frac{x^2}{1+(\log x)^2} + c$

4. $\frac{1}{1+(\log x)^2} + c$

Question Type : MCQ

Question ID : 37135116980

Option 1 ID : 37135167919

Option 2 ID : 37135167920

Option 3 ID : 37135167918

Option 4 ID : 37135167917

Status : Answered

Chosen Option : 2

Q.43

If a die is thrown at random, then the expectation of the number on it is

Ans

1. $2 \cdot 4$

2. $3 \cdot 5$

3. $2 \cdot 1$

4. $3 \cdot 3$

Question Type : MCQ

Question ID : 37135116997

Option 1 ID : 37135167986

Option 2 ID : 37135167988

Option 3 ID : 37135167985

Option 4 ID : 37135167987

Status : Answered

Chosen Option : 4

Q.44

If $x + y = \frac{\pi}{2}$, then the maximum value of $\sin x \cdot \sin y$ is

Ans

1. $\frac{1}{2}$

2. $\frac{-1}{2}$

3. $\frac{-1}{\sqrt{2}}$

4. $\frac{1}{\sqrt{2}}$

Question Type : MCQ

Question ID : 37135116990

Option 1 ID : 37135167959

Option 2 ID : 37135167960

Option 3 ID : 37135167958

Option 4 ID : 37135167957

Status : Answered

Chosen Option : 1

Q.45

If $a = \sin 175^\circ + \cos 175^\circ$, then

Ans

1. $a > 0$

2. $a = 0$

3. $a < 0$

4. $a = 1$

Question Type : MCQ

Question ID : 37135116970

Option 1 ID : 37135167877

Option 2 ID : 37135167879

Option 3 ID : 37135167878

Option 4 ID : 37135167880

Status : Answered

Chosen Option : 2

Q.46

The rational form of a number $1.\overline{41}$ is

Ans

1. $\frac{154}{99}$

2. $\frac{55}{99}$

3. $\frac{140}{99}$

4. $\frac{41}{99}$

Question Type : MCQ

Question ID : 3713516994

Option 1 ID : 37135167974

Option 2 ID : 37135167975

Option 3 ID : 37135167976

Option 4 ID : 37135167973

Status : Answered

Chosen Option : 1

Q.47

The order and degree of the differential equation $\left[1 + \left(\frac{dy}{dx}\right)^3\right]^{\frac{7}{3}} = 7\frac{d^2y}{dx^2}$ are respectively.

Ans

1. 2, 1

2. 2, 3

3. 1, 2

4. 3, 2

Question Type : MCQ

Question ID : 37135116972

Option 1 ID : 37135167888

Option 2 ID : 37135167886

Option 3 ID : 37135167887

Option 4 ID : 37135167885

Status : Answered

Chosen Option : 2

Q.48 The negation of the statement 'He is poor but happy' is

Ans

1. He is poor but not happy.

2. He is not poor or not happy.

3. He is not poor and not happy.

4. He is neither poor nor happy.

Question Type : MCQ

Question ID : 37135116954

Option 1 ID : 37135167816

Option 2 ID : 37135167815

Option 3 ID : 37135167814

Option 4 ID : 37135167813

Status : Answered

Chosen Option : 2

Q.49 If the line $\vec{r} = (\hat{i} - 2\hat{j} + 3\hat{k}) + \lambda (2\hat{i} + \hat{j} + 2\hat{k})$ is parallel to the plane $\vec{r} \cdot (3\hat{i} - 2\hat{j} + m\hat{k}) = 10$, then the value of m is

Ans

1. 2

2. -3

3. -2

4. 3

Question Type : MCQ

Question ID : 37135116981

Option 1 ID : 37135167921

Option 2 ID : 37135167924

Option 3 ID : 37135167922

Option 4 ID : 37135167923

Status : Answered

Chosen Option : 3

Q.50

$$\int_0^1 \left(\frac{x^2 - 2}{x^2 + 1} \right) dx =$$

Ans

✗ 1. $1 + \frac{3\pi}{4}$

✓ 2. $1 - \frac{3\pi}{4}$

✗ 3. $1 - \frac{\pi}{4}$

✗ 4. $1 + \frac{\pi}{4}$

Question Type : MCQ

Question ID : 37135116982

Option 1 ID : 37135167928

Option 2 ID : 37135167927

Option 3 ID : 37135167926

Option 4 ID : 37135167925

Status : Answered

Chosen Option : 2