

MHT CET 2nd and 3rd May 2019

Test Date	02/05/2019
Test Time	9:00 AM - 12:00 PM
Subject	PCM

Section : Physics

Q.1 A stone of mass 1kg is tied to a string 2m long and is rotated at constant speed of 40 ms^{-1} in a vertical circle. The ratio of the tension at the top and the bottom is [Take $g = 10 \text{ ms}^{-2}$]

Ans

1. $\frac{81}{79}$

2. $\frac{79}{81}$

3. $\frac{19}{12}$

4. $\frac{12}{19}$

Question Type : MCQ

Question ID : 469665457

Option 1 ID : 4696651826

Option 2 ID : 4696651825

Option 3 ID : 4696651828

Option 4 ID : 4696651827

Status : Answered

Chosen Option : 2

Q.2 Two coils have a mutual inductance of 0.01 H. The current in the first coil changes according to equation $I = 5 \sin 200\pi t$. The maximum value of e.m.f induced in the second coil is

Ans

1. 10π volt

2. 0.1π volt

3. π volt

4. 0.01π volt

Question Type : MCQ

Question ID : 469665460

Option 1 ID : 4696651839

Option 2 ID : 4696651840

Option 3 ID : 4696651837

Q.3 The radius of the earth and the radius of orbit around the sun are 6371 km and 149×10^6 km respectively. The order of magnitude of the diameter of the orbit is greater than that of earth by

Ans

1. 10^3

2. 10^2

3. 10^4

4. 10^5

Question Type : MCQ

Question ID : 469665485

Option 1 ID : 4696651938

Option 2 ID : 4696651937

Option 3 ID : 4696651939

Option 4 ID : 4696651940

Status : Not Attempted and Marked For Review

Chosen Option : --

Q.4 Two open pipes of different lengths and of same diameter in which the air column vibrates with fundamental frequencies ' n_1 ', and ' n_2 ' respectively. When both pipes are joined to form a single pipe, its fundamental frequency will be

Ans

1. $\frac{n_1 + n_2}{n_1 n_2}$

2. $\frac{n_1 n_2}{2n_2 + n_1}$

3. $\frac{2n_2 + n_1}{n_1 n_2}$

4. $\frac{n_1 n_2}{n_1 + n_2}$

Question Type : MCQ

Question ID : 469665464

Option 1 ID : 4696651856

Option 2 ID : 4696651853

Option 3 ID : 4696651855

Option 4 ID : 4696651854

Status : Answered

Chosen Option : 4

Q.5 If ' C_p ' and ' C_v ' are molar specific heats of an ideal gas at constant pressure and volume respectively, If ' λ ' is ratio of two specific heats and ' R ' is universal gas constant then ' C_p ' is equal to

Ans

1. $\frac{R\gamma}{\gamma-1}$

2. γR

3. $\frac{1+\gamma}{1-\gamma}$

4. $\frac{R}{\gamma-1}$

Question Type : MCQ

Question ID : 469665462

Option 1 ID : 4696651847

Option 2 ID : 4696651846

Option 3 ID : 4696651848

Option 4 ID : 4696651845

Status : Answered

Chosen Option : 1

Q.6 In a series LCR circuit $R=300\Omega$, $L=0.9H$, $C=2\mu F$, $\omega =1000\text{rad/s}$. The impedance of the circuit is

Ans 1. 500Ω

2. 1300Ω

3. 400Ω

4. 900Ω

Question Type : MCQ

Question ID : 469665497

Option 1 ID : 4696651986

Option 2 ID : 4696651988

Option 3 ID : 4696651985

Option 4 ID : 4696651987

Status : Answered

Chosen Option : 1

Q.7 The quantity which does not vary periodically for a particle performing S.H.M. is

Ans 1. acceleration

2. total energy

3. displacement

4. velocity

Question Type : MCQ

Question ID : 469665483

Option 1 ID : 4696651931

Option 2 ID : 4696651932

Option 3 ID : 4696651929

Option 4 ID : 4696651930

Status : Answered

Chosen Option : 2

Q.8

Which of the following combinations of 7 identical capacitors each of $2\mu F$ gives a resultant capacitance of $\frac{10}{11}\mu F$?

Ans 1. 3 in parallel and 4 in series.

2. 2 in parallel and 5 in series.

3. 4 in parallel and 3 in series.

4. 5 in parallel and 2 in series.

Question Type : MCQ

Question ID : 469665473

Option 1 ID : 4696651891

Option 2 ID : 4696651892

Option 3 ID : 4696651890

Option 4 ID : 4696651889

Status : Answered

Chosen Option : 4

Q.9 Bohr model is applied to a particle of mass ' m ' and charge ' q ' moving in a plane under the influence of a transverse magnetic field ' B '. The energy of the charged particle in the n^{th} level will be (h = Planck's constant)

Ans

1. $2nhq B / \pi m$

2. $nhq B / 2\pi m$

3. $nhq B / 4\pi m$

4. $nhq B / \pi m$

Question Type : MCQ

Question ID : 469665455

Option 1 ID : 4696651820

Option 2 ID : 4696651818

Option 3 ID : 4696651819

Option 4 ID : 4696651817

Status : Answered

Chosen Option : 3

Q.1 In moving coil galvanometer, strong horse shoe magnet of concave shaped pole pieces is used to

Ans 1. increase space for roatation of coil.

2. reduce weight of galvanometer.

3. produce magnetic field which is parallel to plane of coil at any position.

4. make magnetic induction weak at the centre.

Question Type : MCQ

Question ID : 469665454

Option 1 ID : 4696651814

Option 2 ID : 4696651813

Option 3 ID : 4696651815

Option 4 ID : 4696651816

Status : Answered

Chosen Option : 2

Q.1 Two identical wires of substances 'P' and 'Q' are subjected to equal stretching force along the length. If the elongation of 'Q' is more than that of 'P', then

- Ans 1. both P and Q are equally elastic.
2. P is more elastic than Q.
3. P is plastic and Q is elastic.
4. Q is more elastic than P.

Question Type : MCQ

Question ID : 469665500

Option 1 ID : 4696651999

Option 2 ID : 4696651997

Option 3 ID : 4696652000

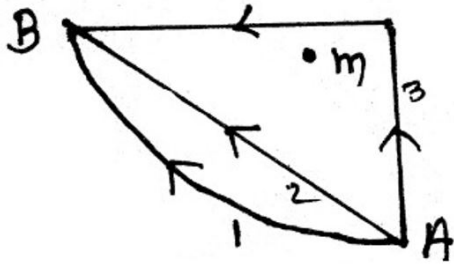
Option 4 ID : 4696651998

Status : Answered

Chosen Option : 4

Q.1
2

If W_1 , W_2 and W_3 represent the work done in moving a particle from A to B along three different paths 1, 2 and 3 (as shown in fig) in the gravitational field of the point mass 'm'. Find the correct relation between ' W_1 ', ' W_2 ' and ' W_3 '



- Ans 1. $W_1 < W_3 < W_2$
2. $W_1 < W_2 < W_3$
3. $W_1 = W_2 = W_3$
4. $W_1 > W_3 > W_2$

Question Type : MCQ

Question ID : 469665469

Option 1 ID : 4696651875

Option 2 ID : 4696651876

Option 3 ID : 4696651874

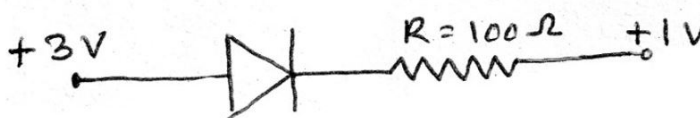
Option 4 ID : 4696651873

Status : Answered

Chosen Option : 3

Q.1
3

Assuming that the junction diode is ideal, the current in the arrangement shown in figure is



- Ans 1. 30mA
2. 40mA
3. 20mA

 4. 10 mA

Question Type : MCQ

Question ID : 469665466

Option 1 ID : 4696651863

Option 2 ID : 4696651864

Option 3 ID : 4696651862

Option 4 ID : 4696651861

Status : Answered

Chosen Option : 3

Q.1


4


The equation of simple harmonic progressive wave is given by


$$Y = a \sin 2\pi (bt - cx)$$


The maximum particle velocity will be twice the wave velocity if

Ans

 1. $c = \pi a$

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

 3. $c = \frac{1}{\pi a}$

 4. $c = 2\pi a$

Question Type : MCQ

Question ID : 469665479

Option 1 ID : 4696651914

Option 2 ID : 4696651915

Option 3 ID : 4696651913


Option 4 ID : 4696651916


Status : Answered


Chosen Option : 3

Q.1 In fundamental mode, the time required for the sound wave to reach upto the closed end of a
5 pipe filled with air is 't' second . The frequency of vibration of air column is

Ans

 1. $(2t)^{-1}$

 2. $4(t)^{-1}$

 3. $2(t)^{-1}$

 4. $(4t)^{-1}$

Question Type : MCQ

Question ID : 469665452

Option 1 ID : 4696651807

Option 2 ID : 4696651805

Option 3 ID : 4696651806

Option 4 ID : 4696651808
Status : Answered
Chosen Option : 1

Q.1 Two small drops of mercury each of radius 'R' coalesce to form a large single drop. The ratio
6 of the total surface energies before and after the change is

- Ans
- 1. $2^{2/3} : 1$
 - 2. $\sqrt{2} : 1$
 - 3. $2^{1/3} : 1$
 - 4. $2 : 1$

Question Type : MCQ
Question ID : 469665451
Option 1 ID : 4696651802
Option 2 ID : 4696651804
Option 3 ID : 4696651801
Option 4 ID : 4696651803
Status : Answered
Chosen Option : 3

Q.1 If radius of the solid sphere is doubled by keeping its mass constant, the ratio of their
7 moment of inertia about any of its diameter is

- Ans
- 1. 1:8
 - 2. 2:5
 - 3. 2:3
 - 4. 1:4

Question Type : MCQ
Question ID : 469665496
Option 1 ID : 4696651981
Option 2 ID : 4696651983
Option 3 ID : 4696651984
Option 4 ID : 4696651982
Status : Answered
Chosen Option : 4

Q.1 For a metallic wire, the ratio of voltage to corresponding current is
8

- Ans
- 1. independent of temperature.
 - 2. increases with rise in temperature.
 - 3. increases or decreases with rise in temperature depending upon the metal.
 - 4. decreases with rise in temperature.

Question Type : MCQ
Question ID : 469665477
Option 1 ID : 4696651905
Option 2 ID : 4696651906
Option 3 ID : 4696651908
Option 4 ID : 4696651907

Q.1 In air, a charged soap bubble of radius 'R' breaks into 27 small soap bubbles of equal radius 'r'.
9 Then the ratio of mechanical force acting per unit area of big soap bubble to that of a small soap bubble is

Ans

1. $\frac{1}{81}$

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

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

4. $\frac{9}{1}$

Question Type : **MCQ**
Question ID : **469665490**
Option 1 ID : **4696651957**
Option 2 ID : **4696651959**
Option 3 ID : **4696651958**
Option 4 ID : **4696651960**
Status : **Answered**
Chosen Option : 3

Q.2 Two parallel conductors carrying unequal currents in the same direction _____
0

- Ans
- 1. neither attract nor repel each other.
 - 2. repel each other.
 - 3. attract each other.
 - 4. will have rotational motion.

Question Type : **MCQ**
Question ID : **469665468**
Option 1 ID : **4696651871**
Option 2 ID : **4696651870**
Option 3 ID : **4696651869**
Option 4 ID : **4696651872**
Status : **Answered**
Chosen Option : 3

Q.2 A layer of atmosphere that reflects medium frequency radio waves which is ineffective during
1 night, is

- Ans
- 1. F layer
 - 2. E layer
 - 3. stratosphere
 - 4. thermosphere

Question Type : **MCQ**
Question ID : **469665459**
Option 1 ID : **4696651834**

Option 2 ID : 4696651835
Option 3 ID : 4696651833
Option 4 ID : 4696651836
Status : **Marked For Review**
Chosen Option : 4

Q.2 A transverse wave is propagating on the string. The linear density of a vibrating string is 10^{-3} kg/m. The equation of the wave is $Y = 0.05 \sin(x+15t)$ where x and Y are in metre and time in second. The tension in the string is

- Ans
- 1. 0.2 N
 - 2. 0.250 N
 - 3. 0.225 N
 - 4. 0.325 N

Question Type : **MCQ**
Question ID : 469665481
Option 1 ID : 4696651921
Option 2 ID : 4696651923
Option 3 ID : 4696651922
Option 4 ID : 4696651924
Status : **Answered**
Chosen Option : 3

Q.2 The kinetic energy of a revolving satellite (mass m) at a height equal to thrice the radius of the earth (R) is

- Ans
- 1. $\frac{mgR}{8}$
 - 2. $\frac{mgR}{16}$
 - 3. $\frac{mgR}{2}$
 - 4. $\frac{mgR}{4}$

Question Type : **MCQ**
Question ID : 469665476
Option 1 ID : 4696651903
Option 2 ID : 4696651904
Option 3 ID : 4696651901
Option 4 ID : 4696651902
Status : **Answered**
Chosen Option : 1

Q.2 A particle executes the simple harmonic motion with an amplitude 'A'. The distance travelled by it in one periodic time is

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

3. 2A

4. 4A

Question Type : MCQ

Question ID : 469665491

Option 1 ID : 4696651961

Option 2 ID : 4696651962

Option 3 ID : 4696651963

Option 4 ID : 4696651964

Status : Answered

Chosen Option : 4

Q.2 A galvanometer has resistance of 100Ω and a current of 10mA produces full scale deflection 5 in it. The resistance to be connected to it in series, to get a voltmeter of range 50 volt is

Ans 1. 3900Ω

2. 4000Ω

3. 4600Ω

4. 4900Ω

Question Type : MCQ

Question ID : 469665489

Option 1 ID : 4696651953

Option 2 ID : 4696651954

Option 3 ID : 4696651955

Option 4 ID : 4696651956

Status : Answered

Chosen Option : 4

Q.2 The angle made by orbital angular momentum of electron with the direction of the orbital 6 magnetic moment is

Ans 1. 120°

2. 60°

3. 180°

4. 90°

Question Type : MCQ

Question ID : 469665488

Option 1 ID : 4696651951

Option 2 ID : 4696651949

Option 3 ID : 4696651952

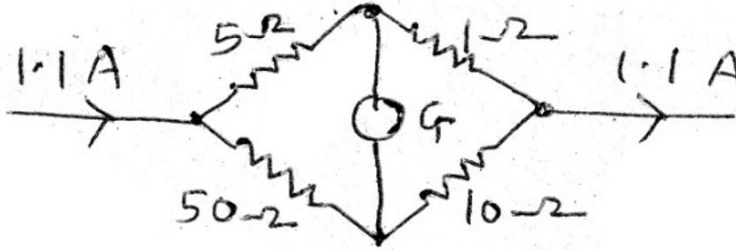
Option 4 ID : 4696651950

Status : Marked For Review

Chosen Option : 3

Q.2
7

The current in 1Ω resistor in the following circuit is



- Ans
- 1. 1A
 - 2. 0.5A
 - 3. 1.1A
 - 4. 0.8A

Question Type : MCQ

Question ID : 469665461

Option 1 ID : 4696651843

Option 2 ID : 4696651841

Option 3 ID : 4696651844

Option 4 ID : 4696651842

Status : Answered

Chosen Option : 1

Q.2 The wave length of the first line in Balmer series in the hydrogen spectrum is ' λ '. What is the 8 wavelength of the second line in the same series?

- Ans
- 1. $\frac{20}{27} \lambda$
 - 2. $\frac{3}{16} \lambda$
 - 3. $\frac{5}{36} \lambda$
 - 4. $\frac{3}{4} \lambda$

Question Type : MCQ

Question ID : 469665495

Option 1 ID : 4696651977

Option 2 ID : 4696651978

Option 3 ID : 4696651979

Option 4 ID : 4696651980

Status : Answered

Chosen Option : 1

Q.2 Work done in stretching a wire through 1mm is 2J. What amount of work will be done for 9 elongating another wire of same material, with half the length and double the radius of cross section, by 1 mm?

- Ans
- 1. 2J
 - 2. 4J
 - 3. 8J
 - 4. 16J

Question Type : MCQ
Question ID : 469665465
Option 1 ID : 4696651857
Option 2 ID : 4696651858
Option 3 ID : 4696651859
Option 4 ID : 4696651860
Status : Answered
Chosen Option : 4

Q.3
0 The resultant \vec{R} of \vec{P} and \vec{Q} is perpendicular to \vec{P} . Also $|\vec{P}| = |\vec{R}|$. The angle between \vec{P} and \vec{Q} is $[\tan 45^\circ = 1]$

- Ans
- 1. $\frac{5\pi}{4}$
 - 2. $\frac{7\pi}{4}$
 - 3. $\frac{\pi}{4}$
 - 4. $\frac{3\pi}{4}$

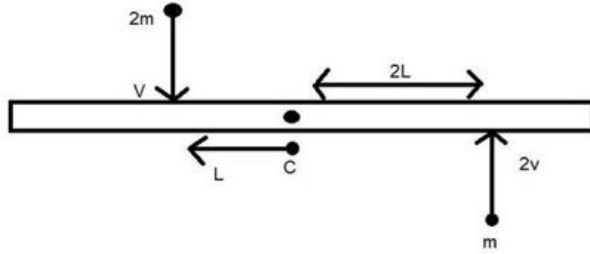
Question Type : MCQ
Question ID : 469665475
Option 1 ID : 4696651899
Option 2 ID : 4696651900
Option 3 ID : 4696651897
Option 4 ID : 4696651898
Status : Answered
Chosen Option : 3

Q.3 A telescope has large diameter of the objective. Then its resolving power is
1

- Ans
- 1. independent of the diameter of the objective.
 - 2. low.
 - 3. zero.
 - 4. high.

Question Type : MCQ
Question ID : 469665482
Option 1 ID : 4696651928
Option 2 ID : 4696651927
Option 3 ID : 4696651925
Option 4 ID : 4696651926
Status : Answered
Chosen Option : 2

- Q.3
2 A uniform rod of length '6L' and mass '8m' is pivoted at its centre 'C'. Two masses 'm' and '2m' with speed 2v, v as shown strikes the rod and stick to the rod. Initially the rod is at rest. Due to impact, if it rotates with angular velocity ' ω_1 ' then ' ω ' will be.



Ans

- ✓ 1. $\frac{v}{5L}$
- ✗ 2. Zero
- ✗ 3. $\frac{8v}{6L}$
- ✗ 4. $\frac{11v}{3L}$

Question Type : MCQ

Question ID : 469665463

Option 1 ID : 4696651852

Option 2 ID : 4696651849

Option 3 ID : 4696651850

Option 4 ID : 4696651851

Status : Marked For Review

Chosen Option : 4

- Q.3
3 If $\sqrt{A^2 + B^2}$ represents the magnitude of resultant of two vectors $(\vec{A} + \vec{B})$ and $(\vec{A} - \vec{B})$, then the angle between two vectors is

Ans

- ✗ 1. $\cos^{-1}\left[-\frac{2(A^2 - B^2)}{(A^2 + B^2)}\right]$
- ✗ 2. $\cos^{-1}\left[-\frac{A^2 - B^2}{A^2 B^2}\right]$
- ✓ 3. $\cos^{-1}\left[-\frac{(A^2 + B^2)}{2(A^2 - B^2)}\right]$
- ✗ 4. $\cos^{-1}\left[-\frac{(A^2 - B^2)}{A^2 + B^2}\right]$

Question Type : MCQ

Question ID : 469665494

Option 1 ID : 4696651976

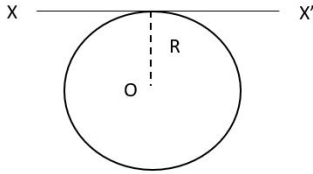
Option 2 ID : 4696651975

Option 3 ID : 4696651973

Option 4 ID : 4696651974

Q.3
4

A thin metal wire of length 'L' and uniform linear mass density ' ρ ' is bent into a circular coil with 'o' as centre. The moment of inertia of a coil about the axis XX' is



Ans

- 1. $3\rho L^3/8\pi^2$
- 2. $\rho L^3/4\pi^2$
- 3. $3\rho L^2/4\pi^2$
- 4. $\rho L^3/8\pi^2$

Question Type : **MCQ**

Question ID : **469665471**

Option 1 ID : **4696651881**

Option 2 ID : **4696651884**

Option 3 ID : **4696651883**

Option 4 ID : **4696651882**

Status : **Answered**

Chosen Option : 1

Q.3 The dimensions of torque are same as that of
5

Ans

- 1. moment of force.
- 2. pressure.
- 3. acceleration.
- 4. impulse.

Question Type : **MCQ**

Question ID : **469665484**

Option 1 ID : **4696651933**

Option 2 ID : **4696651934**

Option 3 ID : **4696651935**

Option 4 ID : **4696651936**

Status : **Answered**

Chosen Option : 1

Q.3 For transistor, the current ratio ' β_{dc} ' is defined as the ratio of
6

Ans

- 1. collector current to emitter current
- 2. collector current to base current
- 3. base current to collector current
- 4. emitter current to collector current

Question Type : MCQ

Question ID : 469665487

Option 1 ID : 4696651946

Option 2 ID : 4696651948

Option 3 ID : 4696651945

Option 4 ID : 4696651947

Status : Marked For Review

Chosen Option : 3

Q.3 A clock pendulum having coefficient of linear expansion $\alpha = 9 \times 10^{-7}/^{\circ}\text{C}$ has a period of 0.5 s at 20°C . If the clock is used in a climate where the temperature is 30°C , how much time does the clock lose in each oscillation?($g=\text{constant}$)

- Ans
- 1. $2.5 \times 10^{-7}\text{s}$
 - 2. $5 \times 10^{-7}\text{s}$
 - 3. $1.125 \times 10^{-6}\text{s}$
 - 4. $2.25 \times 10^{-6}\text{s}$

Question Type : MCQ

Question ID : 469665480

Option 1 ID : 4696651917

Option 2 ID : 4696651918

Option 3 ID : 4696651919

Option 4 ID : 4696651920

Status : Answered

Chosen Option : 4

Q.3 Two capillary tubes of different diameters are dipped in water .The rise of water is

- 8
- Ans
- 1. zero in both the tubes
 - 2. same in both the tubes
 - 3. more in the tube of larger diameter
 - 4. more in the tube of smaller diameter

Question Type : MCQ

Question ID : 469665472

Option 1 ID : 4696651888

Option 2 ID : 4696651887

Option 3 ID : 4696651885

Option 4 ID : 4696651886

Status : Answered

Chosen Option : 4

Q.3 A thin hollow prism of refracting angle 3° , filled with water gives a deviation of 1° .The refractive index of water is

- 9
- Ans
- 1. 1.59
 - 2. 1.33
 - 3. 1.46
 - 4. 1.51

Question Type : MCQ

Question ID : 469665486

Option 1 ID : 4696651944

Option 2 ID : 4696651941

Option 3 ID : 4696651942
Option 4 ID : 4696651943
Status : Answered
Chosen Option : 2

Q.4 A body is projected vertically from the surface of the earth of radius 'R' with velocity equal to 0 half of the escape velocity. The maximum height reached by the body is

- Ans
- 1. $R/5$
 - 2. $R/3$
 - 3. $R/2$
 - 4. $R/4$

Question Type : MCQ
Question ID : 469665470
Option 1 ID : 4696651880
Option 2 ID : 4696651878
Option 3 ID : 4696651877
Option 4 ID : 4696651879
Status : Answered
Chosen Option : 2

Q.4 In biprism experiment ,the distance between source and eyepiece is 1.2 m,the distance 1 between two virtual sources is 0.84 mm. Then the wavelength of light used if eyepiece is to be moved transversely through a distance of 2.799 cm to shift 30 fringes is

- Ans
- 1. 6533 Å
 - 2. 6537 Å
 - 3. 6535 Å
 - 4. 6351 Å

Note: For this question, discrepancy is found in question/answer. Full Marks is being awarded to all candidates.

Question Type : MCQ
Question ID : 469665453
Option 1 ID : 4696651810
Option 2 ID : 4696651812
Option 3 ID : 4696651811
Option 4 ID : 4696651809
Status : Answered
Chosen Option : 4

Q.4 2 When photons of energy $h\nu$ fall on metal plate of work function ' W_0 ', photoelectrons of maximum kinetic energy ' K ' are ejected. If the frequency of the radiation is doubled, the maximum kinetic energy of the ejected photoelectrons will be

- Ans
- 1. $K + W_0$
 - 2. $K+h\nu$
 - 3. K
 - 4. $2K$

Question Type : MCQ
Question ID : 469665493
Option 1 ID : 4696651971

Option 2 ID : 4696651972
Option 3 ID : 4696651969
Option 4 ID : 4696651970
Status : Answered
Chosen Option : 2

Q.4 If a star emitting yellow light is accelerated towards earth, then to an observer on earth it will
3 appear

- Ans
- 1. becoming orange.
 - 2. shining yellow.
 - 3. gradually changing to blue.
 - 4. gradually changing to red.

Question Type : MCQ
Question ID : 469665478
Option 1 ID : 4696651910
Option 2 ID : 4696651909
Option 3 ID : 4696651912
Option 4 ID : 4696651911
Status : Answered
Chosen Option : 3

Q.4 The magnitude of magnetic induction at a point on the axis at a large
4 distance (r) from the centre of circular coil of ' n ' turns, and area ' A ' carrying current (I) is given by

- Ans
- 1. $B_{axis} = \frac{\mu_0}{4\pi} \cdot \frac{nA}{r^3}$
 - 2. $B_{axis} = \frac{\mu_0}{4\pi} \cdot \frac{2nIA}{r^3}$
 - 3. $B_{axis} = \frac{\mu_0}{4\pi} \cdot \frac{2nI}{Ar^3}$
 - 4. $B_{axis} = \frac{\mu_0}{4\pi} \cdot \frac{nIA}{r^3}$

Question Type : MCQ
Question ID : 469665456
Option 1 ID : 4696651822
Option 2 ID : 4696651824
Option 3 ID : 4696651823
Option 4 ID : 4696651821
Status : Answered
Chosen Option : 2

Q.4 A metal sphere of radius 'R' and density ' ρ_1 ' is dropped in a liquid of density ' σ ' moves with
5 terminal velocity 'V'. Another metal sphere of same radius and density ' ρ_2 ' is dropped in the same liquid, its terminal velocity will be

- Ans
- 1. $V[(\rho_2 + \sigma)/(\rho_1 + \sigma)]$
 - 2. $V[(\rho_1 + \sigma)/(\rho_2 + \sigma)]$
 - 3. $V[(\rho_2 - \sigma)/(\rho_1 - \sigma)]$

~~X~~ 4. $V[(Q_1 - \sigma)/(Q_2 - \sigma)]$

Question Type : MCQ

Question ID : 469665458

Option 1 ID : 4696651830

Option 2 ID : 4696651832

Option 3 ID : 4696651829

Option 4 ID : 4696651831

Status : Answered

Chosen Option : 3

Q.4 If α is the coefficient of performance of a refrigerator and ' Q_1 ' is heat released to the hot reservoir, then the heat extracted from the cold reservoir ' Q_2 ' is

Ans

~~X~~ 1. $\frac{\alpha Q_1}{\alpha - 1}$

~~X~~ 2. $\frac{\alpha - 1}{\alpha} Q_1$

✓ 3. $\frac{\alpha Q_1}{1 + \alpha}$

~~X~~ 4. $\frac{1 + \alpha}{\alpha} Q_1$

Question Type : MCQ

Question ID : 469665492

Option 1 ID : 4696651967

Option 2 ID : 4696651966

Option 3 ID : 4696651968

Option 4 ID : 4696651965

Status : Answered

Chosen Option : 2

Q.4 The real force ' F ' acting on a particle of mass ' m ' performing circular motion acts along the radius of circle ' r ' and is directed towards the centre of circle. The square root of magnitude of such force is (T = periodic time)

Ans

✓ 1. $\frac{2\pi}{T} \sqrt{mr}$

~~X~~ 2. $\frac{Tmr}{4\pi}$

~~X~~ 3. $\frac{2\pi T}{\sqrt{mr}}$

~~X~~ 4. $\frac{T^2 mr}{4\pi}$

Question Type : MCQ

Question ID : 469665498

Option 1 ID : 4696651991

Option 2 ID : 4696651989
Option 3 ID : 4696651992
Option 4 ID : 4696651990
Status : Answered
Chosen Option : 1

Q.4 Dimensions of Gyromagnetic ratio are
8

- Ans
- 1. $[L^1 M^0 T^{-1} I^1]$
 - 2. $[L^0 M^{-1} T^{-1} I^1]$
 - 3. $[L^1 M^0 T^0 I^{-1}]$
 - 4. $[L^{-1} M^0 T^{-1} I^1]$

Question Type : MCQ
Question ID : 469665467
Option 1 ID : 4696651865
Option 2 ID : 4696651867
Option 3 ID : 4696651868
Option 4 ID : 4696651866
Status : Marked For Review
Chosen Option : 3

Q.4
9 The maximum velocity of the photoelectron emitted by the metal surface is ' V '. Charge and mass of the photoelectron is denoted by ' e ' and ' m ' respectively. The stopping potential in volt is

- Ans
- 1. $\frac{V^2}{2\left(\frac{m}{e}\right)}$
 - 2. $\frac{V^2}{2\left(\frac{e}{m}\right)}$
 - 3. $\frac{V^2}{\left(\frac{e}{m}\right)}$
 - 4. $\frac{V^2}{\left(\frac{m}{e}\right)}$

Question Type : MCQ
Question ID : 469665499
Option 1 ID : 4696651995
Option 2 ID : 4696651993
Option 3 ID : 4696651994
Option 4 ID : 4696651996
Status : Answered
Chosen Option : 2

Q.5
0 The equiconvex lens has a focal length ' f '. If the lens is cut along the line perpendicular to principal axis and passing through the pole, what will be the focal length of any half part ?

Ans

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

2. $2f$

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

4. f

Question Type : MCQ

Question ID : 469665474

Option 1 ID : 4696651893

Option 2 ID : 4696651896

Option 3 ID : 4696651895

Option 4 ID : 4696651894

Status : Answered

Chosen Option : 4

Section : Chemistry

Q.1 Which of following methods is used to separate wolframite and stannic oxide present in cassiterite?

Ans 1. Hydraulic washing using Wilfley table

2. Froth flotation

3. Hydraulic classifier

4. Magnetic separation

Question Type : MCQ

Question ID : 469665526

Option 1 ID : 4696652104

Option 2 ID : 4696652101

Option 3 ID : 4696652103

Option 4 ID : 4696652102

Status : Answered

Chosen Option : 4

Q.2 In the reaction , $\text{MnO}_4^{-1}(\text{aq.}) + \text{Br}^{-1}(\text{aq.}) \rightarrow \text{MnO}_{2(\text{s})} + \text{BrO}_3^{-1}(\text{aq.})$,the correct change in oxidation number of the species involved is

Ans 1. Br^{+5} to Br^{-1}

2. Mn^{+7} to Mn^{+2}

3. Mn^{+7} to Mn^{+3}

4. Br^{-1} to Br^{+5}

Question Type : MCQ

Question ID : 469665534

Option 1 ID : 4696652136

Option 2 ID : 4696652133

Option 3 ID : 4696652134

Option 4 ID : 4696652135
Status : Answered
Chosen Option : 4

Q.3 How many isoprene units are present in abscisic acid ?

- Ans 1. Three
 2. Two
 3. Four
 4. Five

Question Type : MCQ
Question ID : 469665536
Option 1 ID : 4696652142
Option 2 ID : 4696652141
Option 3 ID : 4696652143
Option 4 ID : 4696652144
Status : Answered
Chosen Option : 1

Q.4 Action of hydrogen iodide on anisole gives,

- Ans 1. phenol and iodomethane
 2. iodobenzene and methanol
 3. phenol and methanol
 4. iodobenzene and iodomethane

Question Type : MCQ
Question ID : 469665528
Option 1 ID : 4696652110
Option 2 ID : 4696652109
Option 3 ID : 4696652112
Option 4 ID : 4696652111
Status : Answered
Chosen Option : 1

Q.5 Which among the following compounds is used to decaffeinate coffee?

- Ans 1. Iodoform
 2. Carbon tetrachloride
 3. Methylene dichloride
 4. Chloroform

Question Type : MCQ
Question ID : 469665508
Option 1 ID : 4696652032
Option 2 ID : 4696652030
Option 3 ID : 4696652031
Option 4 ID : 4696652029
Status : Marked For Review
Chosen Option : 2

Q.6 Which complex among the following gives a white precipitate on treatment with an aqueous solution of barium chloride?

- Ans 1. $[\text{Pt}(\text{NH}_3)_4\text{Br}_2]\text{Cl}_2$

2. $[\text{Co}(\text{NH}_3)_5\text{SO}_4]\text{NO}_2$

3. $[\text{Co}(\text{NH}_3)_5\text{NO}_2]\text{SO}_4$

4. $[\text{Pt}(\text{NH}_3)_4\text{Cl}_2] \text{Br}_2$

Question Type : MCQ

Question ID : 469665504

Option 1 ID : 4696652015

Option 2 ID : 4696652016

Option 3 ID : 4696652014

Option 4 ID : 4696652013

Status : Answered

Chosen Option : 3

Q.7 When CuSO_4 solution in water is treated with concentrated HCl it turns

Ans 1. Violet

2. Yellow

3. Purple

4. Green

Question Type : MCQ

Question ID : 469665513

Option 1 ID : 4696652051

Option 2 ID : 4696652050

Option 3 ID : 4696652052

Option 4 ID : 4696652049

Status : Marked For Review

Chosen Option : 2

Q.8 Which of the following polymer is used in paints ?

Ans 1. Gutta percha

2. Melamine

3. Buna-S

4. Novolac

Question Type : MCQ

Question ID : 469665541

Option 1 ID : 4696652162

Option 2 ID : 4696652161

Option 3 ID : 4696652164

Option 4 ID : 4696652163

Status : Marked For Review

Chosen Option : 4

Q.9 Three moles of an ideal gas are expanded isothermally from a volume of 300 cm^3 to 2.5 L at 300 K against a pressure of 1.9 atm . The work done in joules is

Ans 1. -423.56 J

2. $+423.56 \text{ J}$

3. -4.18 J

4. $+4.8 \text{ J}$

Question Type : MCQ

Question ID : 469665509

Option 1 ID : 4696652034

Option 2 ID : 4696652036

Option 3 ID : 4696652033

Option 4 ID : 4696652035

Status : **Marked For Review**

Chosen Option : 1

Q.1 Which among the following is used in the treatment of cancer?

0

- Ans
- 1. cis-[Pt(en)₂Cl₂]
 - 2. cis-[PtCl₂(NH₃)₂]
 - 3. trans-[Pt(en)₂Cl₂]
 - 4. trans-[Pt(NH₃)₂Cl₂]

Question Type : **MCQ**

Question ID : 469665502

Option 1 ID : 4696652006

Option 2 ID : 4696652005

Option 3 ID : 4696652008

Option 4 ID : 4696652007

Status : **Answered**

Chosen Option : 2

Q.1 Which among the following pairs of compounds is *NOT* isomorphous?

1

- Ans
- 1. NaNO₃ and CaCO₃
 - 2. K₂SO₄ and K₂SeO₄
 - 3. NaCl and KCl
 - 4. NaF and MgO

Question Type : **MCQ**

Question ID : 469665525

Option 1 ID : 4696652098

Option 2 ID : 4696652099

Option 3 ID : 4696652100

Option 4 ID : 4696652097

Status : **Marked For Review**

Chosen Option : 2

Q.1 Which among the following compounds is used as selective weed killer?

2

- Ans
- 1. Picric acid
 - 2. 2,4-dichlorophenoxy acetic acid
 - 3. 2,4,6- trichlorophenoxy acetic acid
 - 4. Salol

Question Type : **MCQ**

Question ID : 469665518

Option 1 ID : 4696652070

Option 2 ID : 4696652071

Option 3 ID : 4696652072

Option 4 ID : 4696652069

Status : **Marked For Review**

Chosen Option : 3

Q.1 Calculate the difference between heat of combustion of carbon monoxide gas at constant pressure and at constant volume at 27°C? ($R = 2\text{Cal K}^{-1}\text{mol}^{-1}$)

- Ans
- 1. 54 cal
 - 2. -600 cal
 - 3. -300 cal
 - 4. 27 cal

Question Type : MCQ

Question ID : 469665511

Option 1 ID : 4696652044

Option 2 ID : 4696652042

Option 3 ID : 4696652041

Option 4 ID : 4696652043

Status : Answered

Chosen Option : 3

Q.1 The conductivity of an electrolytic solution decreases on dilution due to

- Ans
- 1. decrease in number of ions per unit volume
 - 2. increase in ionic mobility of ions
 - 3. increase in percentage ionisation
 - 4. increase in number of ions per unit volume

Question Type : MCQ

Question ID : 469665505

Option 1 ID : 4696652017

Option 2 ID : 4696652019

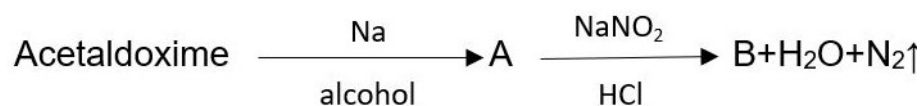
Option 3 ID : 4696652020

Option 4 ID : 4696652018

Status : Answered

Chosen Option : 1

Q.1
5 Identify B in the following reaction,



- Ans
- 1. $\text{CH}_3\text{CH}_2\text{CH}_2\text{OH}$
 - 2. $\text{C}_2\text{H}_5\text{OH}$
 - 3. $\text{C}_2\text{H}_5\text{Cl}$
 - 4. $\text{C}_2\text{H}_5\text{NH}_2$

Question Type : MCQ

Question ID : 469665527

Option 1 ID : 4696652108

Option 2 ID : 4696652107

Option 3 ID : 4696652106

Option 4 ID : 4696652105

Q.1 Which among the following solids shows Frenkel defect ?

6

- Ans
- 1. NaCl
 - 2. C_5Cl
 - 3. KCl
 - 4. AgCl

Question Type : **MCQ**

Question ID : **469665520**

Option 1 ID : **4696652077**

Option 2 ID : **4696652080**

Option 3 ID : **4696652078**

Option 4 ID : **4696652079**

Status : **Marked For Review**

Chosen Option : 1

Q.1 A cold drink bottle contains 200 mL liquid in which CO_2 is 0.1 molar . Considering CO_2 as an
7 ideal gas the volume of the dissolved CO_2 at S.T.P is

- Ans
- 1. 22.4 L
 - 2. 0.224 L
 - 3. 2.24 L
 - 4. 0.448 L

Question Type : **MCQ**

Question ID : **469665533**

Option 1 ID : **4696652132**

Option 2 ID : **4696652129**

Option 3 ID : **4696652131**

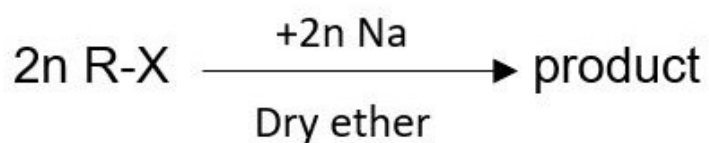
Option 4 ID : **4696652130**

Status : **Answered**

Chosen Option : 4

Q.1
8

In the reaction,



The product obtained is

- Ans
- 1. $2n$ Alkene
 - 2. n Sodium halide
 - 3. n Alcohol

✓ 4. n Alkane

Question Type : MCQ

Question ID : 469665522

Option 1 ID : 4696652088

Option 2 ID : 4696652086

Option 3 ID : 4696652085

Option 4 ID : 4696652087

Status : Answered

Chosen Option : 4

Q.1 The bacteriostatic antibiotic from the following is

9

Ans ✓ 1. Tetracycline

✗ 2. Aminoglycosides

✗ 3. Penicillin

✗ 4. Ofloxacin

Question Type : MCQ

Question ID : 469665506

Option 1 ID : 4696652023

Option 2 ID : 4696652024

Option 3 ID : 4696652022

Option 4 ID : 4696652021

Status : Answered

Chosen Option : 1

Q.2 Nitroalkanes are obtained in laboratory from primary or secondary alkyl halides by the action

0 of

Ans ✓ 1. AgNO_2

✗ 2. NaNO_3

✗ 3. AgNO_3

✗ 4. HNO_3

Question Type : MCQ

Question ID : 469665532

Option 1 ID : 4696652128

Option 2 ID : 4696652126

Option 3 ID : 4696652125

Option 4 ID : 4696652127

Status : Marked For Review

Chosen Option : 4

Q.2 Which of following bonds has maximum bond length ?

1

Ans ✗ 1. C - O

✓ 2. C - H

✗ 3. C - C

✗ 4. C - N

Question Type : MCQ

Question ID : 469665544

Option 1 ID : 4696652176

Option 2 ID : 4696652174
Option 3 ID : 4696652175
Option 4 ID : 4696652173
Status : Answered
Chosen Option : 3

Q.2 Which of the following sets of components form homogeneous mixture?

2

- Ans 1. Phenol + Water
 2. Sugar + Benzene
 3. Silver chloride + Water
 4. Ethyl alcohol + Water

Question Type : MCQ
Question ID : 469665524
Option 1 ID : 4696652095
Option 2 ID : 4696652093
Option 3 ID : 4696652096
Option 4 ID : 4696652094
Status : Answered
Chosen Option : 4

Q.2 Which among the following compounds in crystalline form is used for making Nicol's prism?

3

- Ans 1. CaSO_4
 2. Na_2AlF_6
 3. CaCO_3
 4. Al_2O_3

Question Type : MCQ
Question ID : 469665512
Option 1 ID : 4696652046
Option 2 ID : 4696652048
Option 3 ID : 4696652047
Option 4 ID : 4696652045
Status : Marked For Review
Chosen Option : 4

Q.2 Two electrolytic cells are connected in series containing CuSO_4 solution and molten AlCl_3 . If in electrolysis 0.4 moles of 'Cu' are deposited on cathode of first cell. The number of moles of 'Al' deposited on cathode of the second cell is

4

- Ans 1. 0.6 moles
 2. 0.27 moles
 3. 0.18 moles
 4. 0.4 moles

Question Type : MCQ
Question ID : 469665501
Option 1 ID : 4696652003
Option 2 ID : 4696652004
Option 3 ID : 4696652001
Option 4 ID : 4696652002
Status : Answered
Chosen Option : 2

Q.2 Mandelonitrile is obtained by the reaction between hydrogen cyanide and

5

Ans 1. Propionaldehyde

2. Benzaldehyde

3. Acetaldehyde

4. Acetone

Question Type : MCQ

Question ID : 469665521

Option 1 ID : 4696652084

Option 2 ID : 4696652081

Option 3 ID : 4696652082

Option 4 ID : 4696652083

Status : Answered

Chosen Option : 3

Q.2 The ionic charges on chromate ion and dichromate ion respectively is

6

Ans 1. -2,-2

2. -3,-2

3. -2,-4

4. -4,-2

Question Type : MCQ

Question ID : 469665523

Option 1 ID : 4696652090

Option 2 ID : 4696652092

Option 3 ID : 4696652089

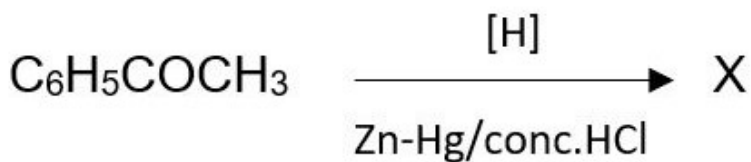
Option 4 ID : 4696652091

Status : Answered

Chosen Option : 1

Q.2
7

In the reaction,



X is

Ans 1. toluene

2. methylbenzene

3. benzylalcohol

4. ethylbenzene

Question Type : MCQ

Question ID : 469665530
Option 1 ID : 4696652117
Option 2 ID : 4696652118
Option 3 ID : 4696652120
Option 4 ID : 4696652119
Status : Answered
Chosen Option : 4

Q.2 What is the percentage of carbon in urea ? (At mass C=12, H=1, N=14,O=16)
8

- Ans 1. 20%
 2. 26.6%
 3. 6.67%
 4. 46.0%

Question Type : MCQ
Question ID : 469665538
Option 1 ID : 4696652149
Option 2 ID : 4696652150
Option 3 ID : 4696652152
Option 4 ID : 4696652151
Status : Answered
Chosen Option : 2

Q.2 α - butylene when subjected to hydroboration oxidation reaction, yields
9

- Ans 1. iso-butyl alcohol
 2. sec-butyl alcohol
 3. n-butyl alcohol
 4. tert-butyl alcohol

Question Type : MCQ
Question ID : 469665514
Option 1 ID : 4696652055
Option 2 ID : 4696652053
Option 3 ID : 4696652056
Option 4 ID : 4696652054
Status : Answered
Chosen Option : 3

Q.3 Calculate Vant Hoff factor for 0.2 m aqueous solution of KCl which freezes at -0.680°C .
0 ($K_f=1.86 \text{ K kg mol}^{-1}$)

- Ans 1. 3.72
 2. 1.83
 3. 6.8
 4. 1.86

Question Type : MCQ
Question ID : 469665542
Option 1 ID : 4696652166
Option 2 ID : 4696652165
Option 3 ID : 4696652167
Option 4 ID : 4696652168

Status : Answered
Chosen Option : 2

Q.3 Which among the following sets of compounds is used as raw material for the preparation of sodium carbonate by solvay process?

- Ans
- 1. NaOH , HCl , CO₂
 - 2. NH₄Cl , H₂O , NaCl
 - 3. NaCl , NH₃ , Ca(OH)₂
 - 4. NaCl , CaCO₃ , H₂SO₄

Question Type : MCQ
Question ID : 469665546
Option 1 ID : 4696652182
Option 2 ID : 4696652184
Option 3 ID : 4696652181
Option 4 ID : 4696652183
Status : Marked For Review
Chosen Option : 2

Q.3 What is the H-S-H bond angle in H₂S?

- Ans
- 1. 104.5°
 - 2. 92.1°
 - 3. 91°
 - 4. 90°

Question Type : MCQ
Question ID : 469665547
Option 1 ID : 4696652185
Option 2 ID : 4696652186
Option 3 ID : 4696652187
Option 4 ID : 4696652188
Status : Answered
Chosen Option : 1

Q.3 'K' is Henry's constant and has the unit

- Ans
- 1. atm mol⁻¹dm³
 - 2. mol⁻¹dm³atm⁻¹
 - 3. atm mol dm⁻³
 - 4. mol dm⁻³atm⁻¹

Question Type : MCQ
Question ID : 469665517
Option 1 ID : 4696652067
Option 2 ID : 4696652065
Option 3 ID : 4696652066
Option 4 ID : 4696652068
Status : Answered
Chosen Option : 4

Q.3 For the conversion of oxygen to ozone in the atmosphere, nitric oxide in gaseous phase acts as

- Ans
- 1. enzyme catalyst
 - 2. Inhibitor
 - 3. homogeneous catalyst
 - 4. heterogeneous catalyst

Question Type : MCQ
Question ID : 469665539
Option 1 ID : 4696652155
Option 2 ID : 4696652153
Option 3 ID : 4696652156
Option 4 ID : 4696652154
Status : Answered
Chosen Option : 1

Q.3 Which among the following group 15 elements does not exhibit allotropy ?

5

- Ans
- 1. N
 - 2. As
 - 3. Sb
 - 4. Bi

Question Type : MCQ
Question ID : 469665535
Option 1 ID : 4696652137
Option 2 ID : 4696652138
Option 3 ID : 4696652139
Option 4 ID : 4696652140
Status : Answered
Chosen Option : 4

Q.3 Which among the following oxides of nitrogen is called nitrogen sesquioxide?

6

- Ans
- 1. NO₂
 - 2. N₂O₃
 - 3. N₂O₄
 - 4. N₂O₅

Question Type : MCQ
Question ID : 469665545
Option 1 ID : 4696652177
Option 2 ID : 4696652179
Option 3 ID : 4696652178
Option 4 ID : 4696652180
Status : Answered
Chosen Option : 4

Q.3 For the elementary reaction $2\text{SO}_2(\text{g}) + \text{O}_2(\text{g}) \rightarrow 2\text{SO}_3(\text{g})$, identify the correct among the following relations

7

Ans

1. $\frac{-d[\text{SO}_2(\text{g})]}{dt} = \frac{-d[\text{O}_2(\text{g})]}{dt}$

2. $\frac{+1}{2} \frac{d[SO_3(g)]}{dt} = \frac{d[SO_2(g)]}{dt}$

3. $\frac{+d[SO_3(g)]}{dt} = \frac{-2d[O_2(g)]}{dt}$

4. $\frac{+d[SO_2(g)]}{dt} = \frac{-d[O_2(g)]}{dt}$

Question Type : MCQ

Question ID : 469665503

Option 1 ID : 4696652010

Option 2 ID : 4696652012

Option 3 ID : 4696652011

Option 4 ID : 4696652009

Status : Answered

Chosen Option : 3

Q.3 For a process, entropy change of a system is expressed as
8

Ans 1. H-TS

2. $\frac{q_{rev}}{T}$

3. $\frac{T}{q_{rev}}$

4. $q_{rev} \times T$

Question Type : MCQ

Question ID : 469665549

Option 1 ID : 4696652196

Option 2 ID : 4696652194

Option 3 ID : 4696652195

Option 4 ID : 4696652193

Status : Answered

Chosen Option : 2

Q.3 Which among the following is NOT a semi-synthetic polymer.
9

Ans 1. Terylene

2. Viscose-Rayon

3. Cupra-ammonium silk

4. Acetate Rayon

Question Type : MCQ

Question ID : 469665548

Option 1 ID : 4696652191

Option 2 ID : 4696652189
Option 3 ID : 4696652190
Option 4 ID : 4696652192
Status : Answered
Chosen Option : 1

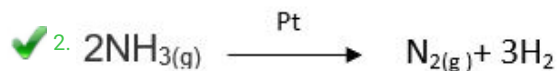
Q.4 Bassemmerization is used in the extraction of
0

- Ans 1. Iron
 2. Copper
 3. Aluminium
 4. Zinc

Question Type : MCQ
Question ID : 469665529
Option 1 ID : 4696652114
Option 2 ID : 4696652116
Option 3 ID : 4696652115
Option 4 ID : 4696652113
Status : Marked For Review
Chosen Option : 2

Q.4 Which among the following reaction is an example of a zero order reaction?
1

Ans 1. $C_{12}H_{22}O_{11}(aq) + H_2O(l) \rightarrow C_6H_{12}O_6(aq) + C_6H_{12}O_6(aq)$



3. $2H_2O_2(l) \rightarrow 2H_2O(l) + O_2(g)$

4. $H_2(g) + I_2(g) \rightarrow 2HI(g)$

Question Type : MCQ
Question ID : 469665507
Option 1 ID : 4696652027
Option 2 ID : 4696652028
Option 3 ID : 4696652026
Option 4 ID : 4696652025
Status : Answered
Chosen Option : 2

Q.4
2 The resistance of $\frac{1}{10}$ M solution is 2.5×10^3 ohm. What is the molar conductivity of solution? (cell constant = 1.25 cm^{-1})

- Ans 1. $3.5 \text{ ohm}^{-1} \text{ cm}^2 \text{ mol}^{-1}$
 2. $5.0 \text{ ohm}^{-1} \text{ cm}^2 \text{ mol}^{-1}$
 3. $2.5 \text{ ohm}^{-1} \text{ cm}^2 \text{ mol}^{-1}$
 4. $2.0 \text{ ohm}^{-1} \text{ cm}^2 \text{ mol}^{-1}$

Question Type : MCQ
Question ID : 469665531
Option 1 ID : 4696652124
Option 2 ID : 4696652122
Option 3 ID : 4696652121

Option 4 ID : 4696652123
Status : Answered
Chosen Option : 2

Q.4 If the Vant Hoff factor for 0.1 M $\text{Ba}(\text{NO}_3)_2$ solution is 2.74, the degree of dissociation is

3

- Ans 1. 0.87
 2. 0.74
 3. 0.91
 4. 87

Question Type : MCQ
Question ID : 469665519
Option 1 ID : 4696652074
Option 2 ID : 4696652076
Option 3 ID : 4696652073
Option 4 ID : 4696652075
Status : Answered
Chosen Option : 1

Q.4 What happens when ionic hydrides of S-block elements in molten state are electrolysed?

4

- Ans 1. Hydride ion migrates at cathode
 2. Dihydrogen is liberated at cathode
 3. Hydride ion reforms metal hydride
 4. Dihydrogen is liberated at anode

Question Type : MCQ
Question ID : 469665515
Option 1 ID : 4696652058
Option 2 ID : 4696652057
Option 3 ID : 4696652060
Option 4 ID : 4696652059
Status : Marked For Review
Chosen Option : 2

Q.4 Which of following is NOT a property of red phosphorus ?

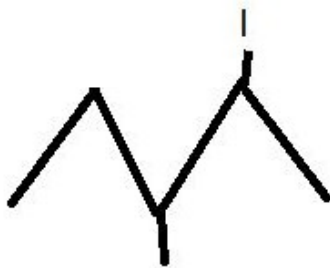
5

- Ans 1. Insoluble in carbon disulphide
 2. It does not show chemiluminescence by action of air
 3. It forms phosphine when treated with hot sodium hydroxide solution
 4. It is non-poisonous

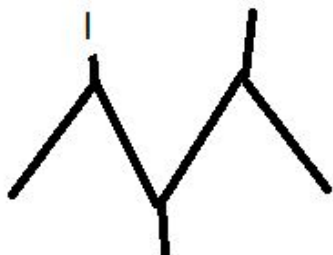
Question Type : MCQ
Question ID : 469665537
Option 1 ID : 4696652145
Option 2 ID : 4696652148
Option 3 ID : 4696652147
Option 4 ID : 4696652146
Status : Answered
Chosen Option : 3

Q.4 The bond line formula of 1-iodo -2,3-dimethyl pentane is

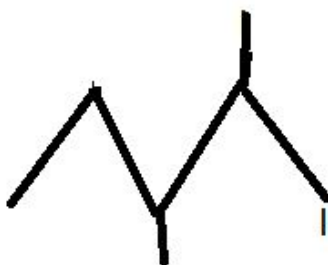
✗ 1.



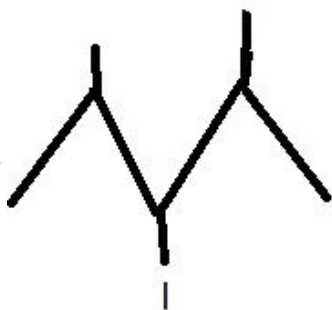
✗ 2.



✓ 3.



✗ 4.



Question Type : MCQ

Question ID : 469665550

Option 1 ID : 4696652199

Option 2 ID : 4696652198

Option 3 ID : 4696652197

Option 4 ID : 4696652200

Status : Answered

Chosen Option : 3

Q.4 When propene reacts with HCl in presence of peroxide, the product is

7

Ans ✗ 1. 1-chloro propane

✗ 2. 1,1-dichloro propane

✓ 3. 2-chloro propane

4. 1,2-dichloro propane

Question Type : MCQ

Question ID : 469665516

Option 1 ID : 4696652061

Option 2 ID : 4696652064

Option 3 ID : 4696652062

Option 4 ID : 4696652063

Status : Answered

Chosen Option : 1

Q.4 Which hydride among the following is strongest reducing agent ?

8

Ans 1. AsH₃

2. BiH₃

3. PH₃

4. SbH₃

Question Type : MCQ

Question ID : 469665543

Option 1 ID : 4696652172

Option 2 ID : 4696652171

Option 3 ID : 4696652169

Option 4 ID : 4696652170

Status : Answered

Chosen Option : 2

Q.4 Which of the following is NOT an antiseptic compound?

9

Ans 1. Boric acid

2. Iodoform

3. Hydrogen peroxide

4. Potassium sulphite

Question Type : MCQ

Question ID : 469665510

Option 1 ID : 4696652038

Option 2 ID : 4696652037

Option 3 ID : 4696652040

Option 4 ID : 4696652039

Status : Marked For Review

Chosen Option : 4

Q.5 β -pleated sheets of polypeptide chains are present in

0

Ans 1. Secondary structure

2. Primary structure

3. Tertiary structure

4. quaternary structure

Question Type : MCQ

Question ID : 469665540

Option 1 ID : 4696652158

Option 2 ID : 4696652157
Option 3 ID : 4696652159
Option 4 ID : 4696652160
Status : Answered
Chosen Option : 3

Section : Mathematics

Q.1 If $P(x_1, y_1)$ is a point on the hyperbola $x^2 - y^2 = a^2$, then $SP \cdot S'P = \dots\dots$

Ans

1. $\frac{x_1^2 - y_1^2}{a^2}$

2. $\frac{x_1^2 + y_1^2}{a^2}$

3. $x_1^2 - y_1^2$

4. $x_1^2 + y_1^2$


Question Type : MCQ
Question ID : 469665599
Option 1 ID : 4696652395
Option 2 ID : 4696652396
Option 3 ID : 4696652393
Option 4 ID : 4696652394
Status : Answered
Chosen Option : 4

Q.2 If $f(x) = \cos^{-1} \left[\frac{1 - (\log x)^2}{1 + (\log x)^2} \right]$, then $f'(e) = \dots\dots$

Ans

1. $\frac{1}{e}$



2. $\frac{2}{e^2}$

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

 4. 1

Question Type : MCQ
Question ID : 469665579
Option 1 ID : 4696652316
Option 2 ID : 4696652314
Option 3 ID : 4696652315
Option 4 ID : 4696652313
Status : Answered
Chosen Option : 1

Q.3 The order of the differential equation of all circles whose radius is 4 , is

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

Question Type : MCQ
Question ID : 469665577
Option 1 ID : 4696652305
Option 2 ID : 4696652306
Option 3 ID : 4696652307
Option 4 ID : 4696652308
Status : Answered
Chosen Option : 3

Q.4 If $A = \begin{bmatrix} x & 1 \\ 1 & 0 \end{bmatrix}$ and $A=A^{-1}$, then $x = \dots\dots$

- Ans  1. 0
 2. 4
 3. 2
 4. 1

Question Type : MCQ
Question ID : 469665572
Option 1 ID : 4696652285
Option 2 ID : 4696652288
Option 3 ID : 4696652287
Option 4 ID : 4696652286
Status : Answered
Chosen Option : 1

Q.5 Which of the following function is not continuous at $x = 0$?

Ans

✗ 1.

$$f(x) = (1 + 2x)^{1/x} , x \neq 0$$
$$= e^2 , x = 0$$

✗ 2.

$$f(x) = \sin x - \cos x , x \neq 0$$
$$= -1 , x = 0$$

✓ 3.

$$f(x) = \frac{e^{1/x} - 1}{e^{1/x} + 1} , x \neq 0$$
$$= -1 , x = 0$$

✗ 4.

$$f(x) = \frac{e^{5x} - e^{2x}}{\sin 3x} , x \neq 0$$
$$= 1 , x = 0$$

Question Type : MCQ

Question ID : 469665580

Option 1 ID : 4696652318

Option 2 ID : 4696652319

Option 3 ID : 4696652320

Option 4 ID : 4696652317

Status : Answered

Chosen Option : 3

Q.6 It is observed that 25 % of the cases related to child labour reported to the police station are solved. If 6 new cases are reported, then the probability that atleast 5 of them will be solved is

.....

Ans

1. $\left(\frac{1}{4}\right)^6$

2. $\frac{19}{1024}$

3. $\frac{19}{2048}$

4. $\frac{19}{4096}$

Question Type : MCQ

Question ID : 469665576

Option 1 ID : 4696652302

Option 2 ID : 4696652304

Option 3 ID : 4696652301

Option 4 ID : 4696652303

Status : Answered

Chosen Option : 4

Q.7 For a G.P. , if $S_n = \frac{4^n - 3^n}{3^n}$, then $t_2 = \dots\dots$

Ans

1. $\frac{1}{9}$

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

✗ 3.

$$\frac{7}{9}$$

✓ 4.

$$\frac{4}{9}$$

Question Type : MCQ

Question ID : 469665561

Option 1 ID : 4696652244

Option 2 ID : 4696652243

Option 3 ID : 4696652241

Option 4 ID : 4696652242

Status : Answered

Chosen Option : 4

Q.8 The area of the region bounded by the curve $y = 2x - x^2$ and the line $y = x$ is square units.

Ans

✓ 1.

$$\frac{1}{6}$$

✗ 2.

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

✗ 3.

$$\frac{1}{3}$$

✗ 4.

$$\frac{7}{6}$$

Question Type : MCQ

Question ID : 469665578

Option 1 ID : 4696652311

Option 2 ID : 4696652309
Option 3 ID : 4696652310
Option 4 ID : 4696652312
Status : Answered
Chosen Option : 1

Q.9 The general solution of $x \frac{dy}{dx} = y - x \tan\left(\frac{y}{x}\right)$ is

Ans

✗_{1.} $x^2 \sin\left(\frac{x}{y}\right) = c$

✗_{2.} $x \sin\left(\frac{x}{y}\right) = c$

✓_{3.} $x \sin\left(\frac{y}{x}\right) = c$

✗_{4.} $x^2 \sin\left(\frac{y}{x}\right) = c$

Question Type : MCQ
Question ID : 469665552
Option 1 ID : 4696652208
Option 2 ID : 4696652207
Option 3 ID : 4696652206
Option 4 ID : 4696652205
Status : Answered
Chosen Option : 3

Q.1₀ The statement pattern $(p \wedge q) \wedge [\sim r \vee (p \wedge q)] \vee (\sim p \wedge q)$ is equivalent to

Ans

✗_{1.} r

✓_{2.} q

✗_{3.} $p \wedge q$

✗_{4.} p

Question Type : MCQ

Question ID : 469665585

Option 1 ID : 4696652340

Option 2 ID : 4696652339

Option 3 ID : 4696652338

Option 4 ID : 4696652337

Status : Answered

Chosen Option : 2

Q.1 A bag contain 6 white and 4 black balls. Two balls are drawn at random. The probability that

1 they are of the same colour is

Ans

1. $\frac{5}{7}$

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

3. $\frac{7}{15}$

4. $\frac{1}{15}$

Question Type : MCQ

Question ID : 469665573

Option 1 ID : 4696652292

Option 2 ID : 4696652291

Option 3 ID : 4696652290

Option 4 ID : 4696652289

Status : Answered

Chosen Option : 3

Q.1
2

$$\int \frac{\cos x + x \sin x}{x^2 + x \cos x} dx = \dots$$

Ans

✗ 1. $\log \left| \frac{x \sin x}{x + \cos x} \right| + c$

✓ 2. $\log \left| \frac{x}{x + \cos x} \right| + c$

✗ 3. $\log |\cos x + x \sin x| + c$

✗ 4. $\log |x^2 + x \cos x| + c$

Question Type : MCQ

Question ID : 469665591

Option 1 ID : 4696652364

Option 2 ID : 4696652362

Option 3 ID : 4696652363

Option 4 ID : 4696652361

Status : Answered

Chosen Option : 2

Q.1 A stone is dropped into a pond. Waves in the form of circles are generated and radius of 3 outermost ripple increases at the rate of 5 cm/sec. Then area increased after 2 seconds is

Ans ✓ 1. $100 \pi \text{ cm}^2/\text{sec}$

✗ 2. $40 \text{ cm}^2/\text{sec}$

✗ 3. $50 \text{ cm}^2/\text{sec}$

✗ 4. $25 \text{ cm}^2/\text{sec}$

Question Type : MCQ

Question ID : 469665588

Option 1 ID : 4696652350

Option 2 ID : 4696652352

Option 3 ID : 4696652349

Option 4 ID : 4696652351

Status : Answered

Chosen Option : 1

Q.1
4 If $f(x) = 3x - 2$ and $g(x) = x^2$, then $f \circ g(x) = \dots\dots\dots$

Ans ✓ 1. $3x^2 - 2$

2. $3x^2 + 2$

3. $3x - 2$

4. $2 - 3x^2$

Question Type : MCQ

Question ID : 469665574

Option 1 ID : 4696652295

Option 2 ID : 4696652294

Option 3 ID : 4696652293

Option 4 ID : 4696652296

Status : Answered

Chosen Option : 1

Q.1
5 Which of the following is NOT equivalent to $p \rightarrow q$.

Ans

1. p only if q

2. q is necessary for p

3. q only if p

4. p is sufficient for q

Question Type : MCQ

Question ID : 469665597

Option 1 ID : 4696652386

Option 2 ID : 4696652387

Option 3 ID : 4696652388

Option 4 ID : 4696652385

Status : Answered

Chosen Option : 3

Q.1
6 The value of $\int_{-3}^3 (ax^5 + bx^3 + cx + k)dx$, where a, b, c, k are constants, depends only on

Ans

1. a, b and c

✓ 2. k

✗ 3. a and b

✗ 4. a and k

Question Type : MCQ

Question ID : 469665553

Option 1 ID : 4696652212

Option 2 ID : 4696652209

Option 3 ID : 4696652211

Option 4 ID : 4696652210

Status : Answered

Chosen Option : 2

Q.1 The general solution of the differential equation of all circles having centre at A (-1, 2) is

7

Ans ✗ 1.

$$x^2 + y^2 + x - 2y + c = 0$$

✗ 2.

$$x^2 + y^2 - 2x + 4y + c = 0$$

✗ 3. $x^2 + y^2 - x + 2y + c = 0$

✓ 4.

$$x^2 + y^2 + 2x - 4y + c = 0$$

Question Type : MCQ

Question ID : 469665565

Option 1 ID : 4696652259

Option 2 ID : 4696652258

Option 3 ID : 4696652257

Option 4 ID : 4696652260

Status : Answered

Chosen Option : 4

Q.1 If A is non-singular matrix such that $(A-2I)(A-4I) = 0$ then $A+8A^{-1} = \dots$

8

Ans ✗ 1. I

✗ 2. 0

✗ 3. 3I

✓ 4. 6I

Question Type : MCQ

Question ID : 469665584

Option 1 ID : 4696652334

Option 2 ID : 4696652333

Option 3 ID : 4696652335

Option 4 ID : 4696652336

Status : Answered

Chosen Option : 4

Q.1 If G (3 , -5 , r) is centroid of triangle ABC where A (7,-8,1) , B (p , q , 5) and C (q+1 , 5p , 0)
9 are vertices of a triangle then values of p , q , r are respectively

Ans ✗ 1. 6 , 5 , 4

✗ 2. -4 , 5 , 4

✗ 3. -3 , 4 , 3

✓ 4. -2 , 3 , 2

Question Type : MCQ

Question ID : 469665582

Option 1 ID : 4696652328

Option 2 ID : 4696652325

Option 3 ID : 4696652327

Option 4 ID : 4696652326

Status : Answered

Chosen Option : 4

Q.2
0 $\int \frac{1}{(x^2+1)^2} dx = \dots\dots\dots$

Ans

✗ 1. $\tan^{-1}x - \frac{1}{2x(x^2 + 1)} + c$

✓ 2. $\frac{1}{2} \tan^{-1}x + \frac{x}{2(x^2 + 1)} + c$

✗ 3. $\tan^{-1}x + \frac{1}{x^2 + 1} + c$

$$\times 4. \tan^{-1}x + \frac{1}{2(x^2 + 1)} + c$$

Question Type : MCQ

Question ID : 469665566

Option 1 ID : 4696652264

Option 2 ID : 4696652262

Option 3 ID : 4696652261

Option 4 ID : 4696652263

Status : Answered

Chosen Option : 2

Q.2
1

$$\text{If } \theta = \frac{17\pi}{3} \text{ then } \tan\theta - \cot\theta = \dots\dots\dots$$

Ans

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

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

$$\times 3. \frac{2}{\sqrt{3}}$$

$$\checkmark 4. -\frac{2}{\sqrt{3}}$$

Question Type : MCQ

Question ID : 469665600

Option 1 ID : 4696652397

Option 2 ID : 4696652398

Option 3 ID : 4696652399

Option 4 ID : 4696652400

Status : Answered

Q.2
2 Derivative of $\log_{e^2}(\log x)$ with respect to x is

Ans

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

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

3. $\frac{1}{x \log x^2}$

4. $\frac{2}{\log x}$

Question Type : MCQ

Question ID : 469665592

Option 1 ID : 4696652368

Option 2 ID : 4696652365

Option 3 ID : 4696652366

Option 4 ID : 4696652367

Status : Answered

Chosen Option : 3

Q.2
3 In ΔABC ; with usual notations, if $\cos A = \frac{\sin B}{\sin C}$, then the triangle is

Ans 1. Acute angled triangle

2. Equilateral triangle

3. Obtuse angled triangle

4. Right angled triangle

Question Type : MCQ

Question ID : 469665559

Option 1 ID : 4696652233

Option 2 ID : 4696652236

Option 3 ID : 4696652235

Option 4 ID : 4696652234

Q.2
4 For a G.P, if $(m + n)^{th}$ term is p and $(m - n)^{th}$ term is q , then m^{th} term is

Ans

1. pq

2. \sqrt{pq}

3. $\frac{p}{q}$

4. $\frac{q}{p}$

Question Type : MCQ

Question ID : 469665598

Option 1 ID : 4696652389

Option 2 ID : 4696652392

Option 3 ID : 4696652391

Option 4 ID : 4696652390

Status : Answered

Chosen Option : 2

Q.2
5 A random variable X has following probability distribution

$X=x$	1	2	3	4	5	6
$P(X=x)$	K	3K	5K	7K	8K	K

Then $P(2 \leq X < 5) = \dots\dots$

Ans

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

2. $\frac{7}{25}$

3. $\frac{23}{25}$

4. $\frac{24}{25}$

Question Type : MCQ

Question ID : 469665564

Option 1 ID : 4696652253

Option 2 ID : 4696652254

Option 3 ID : 4696652255

Option 4 ID : 4696652256

Status : Answered

Chosen Option : 1

Q.2
6 The equation of normal to the curve $y = \log_e x$ at the point P (1,0) is

Ans

1. $2x + y = 2$

2. $x - 2y = 1$

3. $x - y = 1$

4. $x + y = 1$

Question Type : MCQ

Question ID : 469665551

Option 1 ID : 4696652203

Option 2 ID : 4696652204

Option 3 ID : 4696652202

Option 4 ID : 4696652201

Status : Answered

Chosen Option : 4

Q.2
7 The values of x in $(0, \frac{\pi}{2})$ satisfying the equation $\sin x \cos x = \frac{1}{4}$ are

Ans

1. $\frac{\pi}{6}, \frac{\pi}{12}$

✓ 2. $\frac{\pi}{12}, \frac{5\pi}{12}$

✗ 3. $\frac{\pi}{8}, \frac{3\pi}{8}$

✗ 4. $\frac{\pi}{8}, \frac{\pi}{4}$

Question Type : MCQ

Question ID : 469665583

Option 1 ID : 4696652329

Option 2 ID : 4696652331

Option 3 ID : 4696652330

Option 4 ID : 4696652332

Status : Answered

Chosen Option : 2

Q.2
8 If $\vec{a} + \vec{b}, \vec{b} + \vec{c}$ and $\vec{c} + \vec{a}$ are coterminous edges of a parallelepiped then its volume is.....

Ans

✗ 1. $3[\vec{a} \vec{c} \vec{b}]$

✗ 2. 0

✓ 3. $2[\vec{a} \vec{b} \vec{c}]$

✗ 4. $4[\vec{b} \vec{a} \vec{c}]$

Question Type : MCQ

Question ID : 469665570

Option 1 ID : 4696652278

Option 2 ID : 4696652280

Option 3 ID : 4696652277

Option 4 ID : 4696652279

Status : Answered

Chosen Option : 3

If the c.d.f (cumulative distribution function) is given by $F(x) = \frac{x-25}{10}$,

then $P(27 \leq x \leq 33) = \dots\dots$

Ans

✓ 1. $\frac{3}{5}$

✗ 2. $\frac{3}{10}$

✗ 3. $\frac{1}{5}$

✗ 4. $\frac{1}{10}$

Question Type : MCQ

Question ID : 469665589

Option 1 ID : 4696652354

Option 2 ID : 4696652355

Option 3 ID : 4696652356

Option 4 ID : 4696652353

Status : Answered

Chosen Option : 1

Q.3
0 The joint equation of pair of straight lines passing through origin and having slopes $(1 + \sqrt{2})$ and $(\frac{1}{1+\sqrt{2}})$ is

Ans

✓ 1. $x^2 - 2\sqrt{2}xy + y^2 = 0$

✗ 2. $x^2 - 2\sqrt{2}xy - y^2 = 0$

✗ 3. $x^2 + 2xy - y^2 = 0$

X 4. $x^2 + 2xy + y^2 = 0$

Question Type : **MCQ**

Question ID : **469665558**

Option 1 ID : **4696652229**

Option 2 ID : **4696652230**

Option 3 ID : **4696652231**

Option 4 ID : **4696652232**

Status : **Answered**

Chosen Option : **1**

Q.3
1 The angle between lines $\frac{x-2}{2} = \frac{y-3}{-2} = \frac{z-5}{1}$ and $\frac{x-2}{1} = \frac{y-3}{2} = \frac{z-5}{2}$ is

Ans

X 1. 30°

X 2. 60°

X 3. 45°

✓ 4. 90°

Question Type : **MCQ**

Question ID : **469665569**

Option 1 ID : **4696652273**

Option 2 ID : **4696652275**

Option 3 ID : **4696652274**

Option 4 ID : **4696652276**

Status : **Answered**

Chosen Option : **4**

Q.3
2 If the line passes through the points P(6,-1,2), Q(8,-7,2λ) and R(5,2,4) then value of λ is

Ans

X 1. -3

X 2. 0

✓ 3. -1

X 4. 2

Question Type : **MCQ**

Question ID : **469665594**

Option 1 ID : **4696652376**

Option 2 ID : **4696652374**

Option 3 ID : **4696652375**

Option 4 ID : **4696652373**

Status : **Answered**

Q.3
3 The equivalent form of the statement $\sim(p \rightarrow \sim q)$ is

Ans

✓ 1. $p \wedge q$

✗ 2. $p \wedge \sim q$

✗ 3. $p \vee \sim q$

✗ 4. $\sim p \vee q$

Question Type : MCQ

Question ID : 469665560

Option 1 ID : 4696652239

Option 2 ID : 4696652240

Option 3 ID : 4696652238

Option 4 ID : 4696652237

Status : Answered

Chosen Option : 1

Q.3
4 If $A = \{x \in \mathbb{R} : x^2 - 5|x| + 6 = 0\}$, then $n(A) = \dots\dots\dots$

Ans

✗ 1. 2

✗ 2. 0

✗ 3. 1

✓ 4. 4

Question Type : MCQ

Question ID : 469665586

Option 1 ID : 4696652343

Option 2 ID : 4696652341

Option 3 ID : 4696652342

Option 4 ID : 4696652344

Status : Answered

Chosen Option : 4

Q.3
5 If the function $f(x) = \frac{\log(1+ax) - \log(1-bx)}{x}$, $x \neq 0$ is continuous at $x = 0$ then,

$f(0) = \dots$

Ans

✗ 1. $\log a - \log b$

✓ 2. $a + b$

\times 3. $\log a + \log b$

\times 4. $a - b$

Question Type : MCQ

Question ID : 469665555

Option 1 ID : 4696652218

Option 2 ID : 4696652219

Option 3 ID : 4696652217

Option 4 ID : 4696652220

Status : Answered

Chosen Option : 2

Q.3
6 The coordinates of the foot of perpendicular drawn from origin to the plane $2x - y + 5z - 3 = 0$ are

Ans

\times 1. $\left(\frac{2}{\sqrt{30}}, \frac{-1}{\sqrt{30}}, \frac{5}{\sqrt{30}}\right)$

\times 2. $(2, -1, 5)$

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

\checkmark 4. $\left(\frac{1}{5}, \frac{-1}{10}, \frac{1}{2}\right)$

Question Type : MCQ

Question ID : 469665556

Option 1 ID : 4696652223

Option 2 ID : 4696652222

Option 3 ID : 4696652224

Option 4 ID : 4696652221

Status : Answered

Chosen Option : 4

Q.3
7 $\int \frac{\sqrt{x^2 - a^2}}{x} dx = \dots\dots$

Ans \checkmark 1.

$$\sqrt{x^2 - a^2} - a \cos^{-1} \left(\frac{a}{x} \right) + c$$

✗ 2.

$$x\sqrt{x^2 - a^2} - \frac{1}{a} \tan^{-1} \left(\frac{x}{a} \right) + c$$

✗ 3. $\sqrt{x^2 - a^2} + a \sec^{-1} \left(\frac{x}{a} \right) + c$

✗ 4.

$$\sqrt{x^2 - a^2} + \frac{1}{x} \sec^{-1}(x) + c$$

Question Type : MCQ

Question ID : 469665554

Option 1 ID : 4696652213

Option 2 ID : 4696652216

Option 3 ID : 4696652214

Option 4 ID : 4696652215

Status : Answered

Chosen Option : 1

Q.3
8

The maximum value of $z = 9x + 11y$ subject to $3x + 2y \leq 12, 2x + 3y \leq 12,$

$x \geq 0, y \geq 0$ is _____ .

Ans ✗ 1. 44

✗ 2. 54

✗ 3. 36

✓ 4. 48

Question Type : MCQ

Question ID : 469665593

Option 1 ID : 4696652370

Option 2 ID : 4696652372

Option 3 ID : 4696652369

Option 4 ID : 4696652371

Status : Answered

Chosen Option : 4

Q.3
9

$$\int_0^4 \frac{1}{1 + \sqrt{x}} dx = \dots$$

Ans

1. $\log\left(\frac{e^4}{6}\right)$

2. $\log\left(\frac{e^4}{3}\right)$

3. $\log\left(\frac{e^4}{9}\right)$

4. $\log\left(\frac{e^3}{4}\right)$

Question Type : MCQ

Question ID : 469665590

Option 1 ID : 4696652359

Option 2 ID : 4696652358

Option 3 ID : 4696652360

Option 4 ID : 4696652357

Status : Answered

Chosen Option : 3

Q.4 The number of solutions of $\sin^2\theta = \frac{1}{2}$ in $[0, \pi]$ is

Ans 1. three

2. four

3. two

4. one

Question Type : MCQ

Question ID : 469665596

Option 1 ID : 4696652383

Option 2 ID : 4696652384

Option 3 ID : 4696652382
Option 4 ID : 4696652381
Status : Answered
Chosen Option : 3

Q.4
1 If \vec{p}, \vec{q} and \vec{r} are nonzero, noncoplanar vectors then $[\vec{p} + \vec{q} - \vec{r} \quad \vec{p} - \vec{q} \quad \vec{q} - \vec{r}] = \dots$

Ans

1. $3[\vec{p} \quad \vec{q} \quad \vec{r}]$

2. 0

3. $[\vec{p} \quad \vec{q} \quad \vec{r}]$

4. $2[\vec{p} \quad \vec{q} \quad \vec{r}]$

Question Type : MCQ
Question ID : 469665557
Option 1 ID : 4696652227
Option 2 ID : 4696652228
Option 3 ID : 4696652225
Option 4 ID : 4696652226
Status : Answered
Chosen Option : 3

Q.4 Which of the following equation has no solution ?

2

Ans

1. $\sec\theta = 23$

2. $\cos\theta = \sqrt{2}$

3. $\tan\theta = 2019$

4. $\sin\theta = -\frac{1}{5}$

Question Type : MCQ
Question ID : 469665575
Option 1 ID : 4696652299
Option 2 ID : 4696652298
Option 3 ID : 4696652300
Option 4 ID : 4696652297

Status : Answered
Chosen Option : 2

Q.4
3 The minimum value of $z = 10x + 25y$ subject to $0 \leq x \leq 3, 0 \leq y \leq 3, x + y \geq 5$ is ...

- Ans
- 1. 80
 - 2. 95
 - 3. 105
 - 4. 30

Question Type : MCQ
Question ID : 469665568
Option 1 ID : 4696652270
Option 2 ID : 4696652272
Option 3 ID : 4696652271
Option 4 ID : 4696652269
Status : Answered
Chosen Option : 1

Q.4
4 If $f(x) = 3x^3 - 9x^2 - 27x + 15$, then the maximum value of $f(x)$ is

- Ans
- 1. -66
 - 2. 30
 - 3. -30
 - 4. 66

Question Type : MCQ
Question ID : 469665563
Option 1 ID : 4696652249
Option 2 ID : 4696652250
Option 3 ID : 4696652252
Option 4 ID : 4696652251
Status : Answered
Chosen Option : 2

Q.4 The equation of the plane passing through the point $(-1, 2, 1)$ and perpendicular to the line joining the points $(-3, 1, 2)$ and $(2, 3, 4)$ is

Ans

- 1. $\vec{r} \cdot (5\hat{i} + 2\hat{j} + 2\hat{k}) = 1$
- 2. $\vec{r} \cdot (5\hat{i} + 2\hat{j} + 2\hat{k}) = -1$
- 3. $\vec{r} \cdot (5\hat{i} - 2\hat{j} + 2\hat{k}) = -5$
- 4. $\vec{r} \cdot (5\hat{i} - 2\hat{j} - 2\hat{k}) = 1$

Question Type : MCQ

Question ID : 469665581

Option 1 ID : 4696652322

Option 2 ID : 4696652321

Option 3 ID : 4696652323

Option 4 ID : 4696652324

Status : Answered

Chosen Option : 1

Q.4
6 If the lengths of the transverse axis and the latus rectum of a hyperbola are 6 and $\frac{8}{3}$ respectively, then the equation of the hyperbola is

Ans

1. $4x^2 - 9y^2 = 72$

2. $4x^2 - 9y^2 = 36$

3. $9x^2 - 4y^2 = 72$

4. $9x^2 - 4y^2 = 36$

Question Type : MCQ

Question ID : 469665562

Option 1 ID : 4696652247

Option 2 ID : 4696652245

Option 3 ID : 4696652248

Option 4 ID : 4696652246

Status : Answered

Chosen Option : 2

Q.4
7 The value of $\tan^{-1}\frac{1}{3} + \tan^{-1}\frac{1}{5} + \tan^{-1}\frac{1}{7} + \tan^{-1}\frac{1}{8}$ is

Ans

1. $\frac{11\pi}{5}$

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

3. π

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

Question Type : MCQ

Question ID : 469665571

Option 1 ID : 4696652282

Option 2 ID : 4696652284

Option 3 ID : 4696652283

Option 4 ID : 4696652281

Status : Answered

Chosen Option : 2

Q.4 The joint equation of the lines passing through the origin and trisecting the first quadrant is
8

Ans

1. $\sqrt{3}x^2 - 4xy + \sqrt{3}y^2 = 0$

2. $x^2 + \sqrt{3}xy - y^2 = 0$

3. $3x^2 - y^2 = 0$

4. $x^2 - \sqrt{3}xy - y^2 = 0$

Question Type : MCQ

Question ID : 469665595

Option 1 ID : 4696652379

Option 2 ID : 4696652377

Option 3 ID : 4696652380

Option 4 ID : 4696652378

Status : Answered

Chosen Option : 1

Q.4
9 If P(2,2) , Q(-2,4) and R(3,4) are the vertices of ΔPQR then the equation of the median through vertex R is

Ans

1. $x + 3y + 9 = 0$

2. $x - 3y + 9 = 0$

✗^{3.} $x - 3y - 9 = 0$

✗^{4.} $x + 3y - 9 = 0$

Question Type : MCQ

Question ID : 469665587

Option 1 ID : 4696652345

Option 2 ID : 4696652347

Option 3 ID : 4696652346

Option 4 ID : 4696652348

Status : Answered

Chosen Option : 2

Q.5
0 If $x = \sqrt{a^{\sin^{-1} t}}$, $y = \sqrt{a^{\cos^{-1} t}}$, then $\frac{dy}{dx} = \dots\dots$

Ans

✓^{1.} $\frac{-y}{x}$

✗^{2.} $\frac{x}{y}$

✗^{3.} $\frac{y}{x}$

✗^{4.} $\frac{-x}{y}$

Question Type : MCQ

Question ID : 469665567

Option 1 ID : 4696652267

Option 2 ID : 4696652266

Option 3 ID : 4696652265

Option 4 ID : 4696652268

Status : Answered

Chosen Option : 1

