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 sotne 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 = 10ms^{-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 200πt. The maximum value of e.m.f induced in the second coil is**

Ans

✓ 1. 10 π volt

✗ 2. 0.1 π volt

✗ 3. π volt

✗ 4. 0.01 π volt

Question Type : **MCQ**
Question ID : **469665460**
Option 1 ID : **4696651839**
Option 2 ID : **4696651840**
Option 3 ID : **4696651837**

Option 4 ID : **4696651838**
Status : **Answered**
Chosen Option : **1**

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. $\frac{n_1+n_2}{n_1n_2}$

✗ 2. $\frac{n_1n_2}{2n_2+n_1}$

✗ 3. $\frac{2n_2+n_1}{n_1n_2}$

✓ 4. $\frac{n_1n_2}{n_1+n_2}$

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=300Ω ,L=0.9H,C=2μF , ω =1000rad/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 2μF gives a resultant capacitance of $^{10}/_{11}$ μF?

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.10 **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**

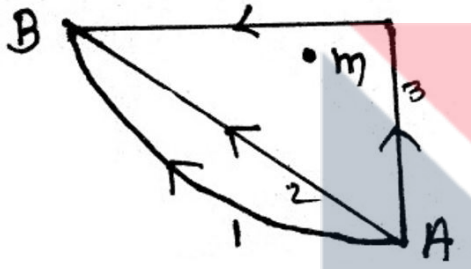
Q.11 **Two identical wires of substances 'P' and 'Q' are subjected to equal stretching force along the length. If the elongation of 'Q' is more than that of 'P', then**

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.12

If W_1, W_2 and W_3 represent the work done in moving a particle from A to B along three different paths1,2 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'

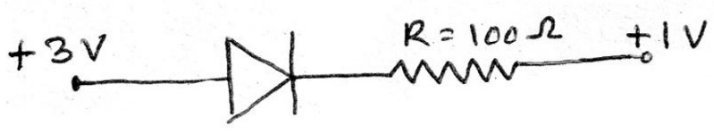


Ans
✗ 1. W1<W3<W2
✗ 2. W1<W2<W3
✓ 3. W1=W2=W3
✗ 4. W1>W3>W2

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.13

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.14 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. $c = \dfrac{1}{2\pi a}$

✓ 3. $c = \dfrac{1}{\pi a}$

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

Ans

✗ 1. $(2t)^{-1}$

✗ 2. $4(\mathrm{t})^{-1}$

✗ 3. $2(\mathrm{t})^{-1}$

✓ 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.16 Two small drops of mercury each of radius 'R' coalesce to form a large single drop. The ratio 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.17 If radius of the solid sphere is doubled by keeping its mass constant, the ratio of their 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.18 For a metallic wire, the ratio of voltage to corresponding current is

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**

Status : **Marked For Review**
Chosen Option : **2**

Q.19 In air, a charged soap bubble of radius 'R' breaks into 27 small soap bubbles of equal radius 'r'. 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.20 Two parallel conductors carrying unequal currents in the same direction _____

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.21 A layer of atmosphere that reflects medium frequency radio waves which is ineffective during 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.22 **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.23 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.24 **A particle executes the simple hormonic 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.25 A galvanometer has resistance of 100Ω and a current of 10mA produces full scale deflection 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.26 The angle made by orbital angular momentum of electron with the direction of the orbital magnetic moment is

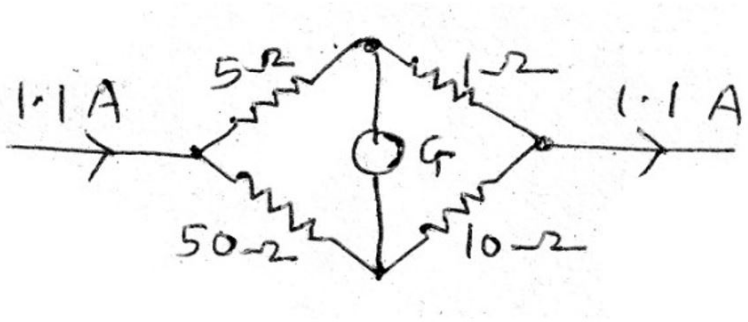
Ans

1. 120^o
2. 60^o
3. 180^o
4. 90^o

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.27

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.28 The wave length of the first line in Balmer series in the hydrogen spectrum is 'λ'. What is the 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.29 Work done in stretching a wire through 1mm is 2J. What amount of work will be done for 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.30 The resultant $\vec{R}$ of $\vec{P}$ and $\vec{Q}$ is perpendicular to $\vec{P}$. Also $|\vec{P}| = |\vec{R}|$. The angle between $\bar{P}$ and $\bar{Q}$ is $[\tan 45^o = 1]$

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

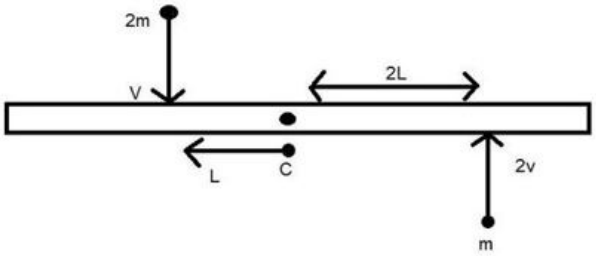
Question Type : **MCQ**
Question ID : **469665475**
Option 1 ID : **4696651899**
Option 2 ID : **4696651900**
Option 3 ID : **4696651897**
Option 4 ID : **4696651898**
Status : **Answered**
Chosen Option : **3**

Q.31 **A telescope has large diameter of the objective.Then its resolving power is**

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.32 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.33 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. $\cos^{-1}[-\frac{2(A^2-B^2)}{(A^2+B^2)}]$

✘ 2. $\cos^{-1}[-\frac{A^2-B^2}{A^2B^2}]$

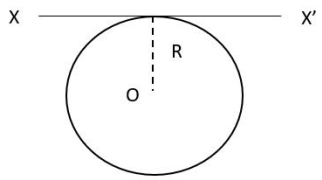
✔ 3. $\cos^{-1}[-\frac{(A^2+B^2)}{2(A^2-B^2)}]$

✘ 4. $\cos^{-1}[-\frac{(A^2-B^2)}{A^2+B^2}]$

Question Type : **MCQ**
Question ID : **469665494**
Option 1 ID : **4696651976**
Option 2 ID : **4696651975**
Option 3 ID : **4696651973**
Option 4 ID : **4696651974**

Status : **Answered**
Chosen Option : **4**

Q.34 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. $3\varrho L^3/8\pi^2$

✘ 2. $\varrho L^3/4\pi^2$

✘ 3. $3\varrho L^2/4\pi^2$

✘ 4. $\varrho L^3/8\pi^2$

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.35 **The dimensions of torque are same as that of**

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

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.37 **A clock pendulum having coefficient of linear expansion $\alpha = 9\times10^{-7}/^{\circ}C$ has a period of 0.5 s at 20^{o} C. If the clock is used in a climate where the temperature is 30^{o} C , how much time does the clock lose in each oscillation?(g=constant)**

Ans
✗ 1. 2.5×10^{-7}s
✗ 2. 5×10^{-7}s
✗ 3. 1.125×10^{-6}s
✓ 4. 2.25×10^{-6}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.38 **Two capillary tubes of different diameters are dipped in water .The rise of water is**

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.39 **A thin hollow prism of refracting angle 3^{o} , filled with water gives a deviation of 1^{o}.The refractive index of water is**

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.40 **A body is projected vertically from the surface of the earth of radius 'R' with velocity equal to 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.41 **In biprism experiment ,the distance between source and eyepiece is 1.2 m,the distance 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.42 When photons of energy $h\nu$ fall on metal plate of work function 'W_o', photoelectrons of maximum kinetic enrgy '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.43 **If a star emitting yellow light is accelerated towards earth, them to an observer on earth it will 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.44 The magnitude of magnetic induction at a point on the axis at a large distance (r) from the centre of circular coil of ' n ' turns, and area ' A ' carrying current (I) is given by

Ans

✗ 1. $B_{axis} = \frac{\mu_0}{4\pi} \cdot \frac{nA}{Ir^3}$

✓ 2. $Baxis = \frac{\mu_0}{4\pi} \cdot \frac{2nIA}{r^3}$

✗ 3. $Baxis = \frac{\mu_0}{4\pi} \cdot \frac{2nI}{Ar^3}$

✗ 4. $Baxis = \frac{\mu_0}{4\pi} \cdot \frac{nIA}{r^3}$

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.45 **A metal sphere of radius 'R' and density 'ϱ_1' is dropped in a liquid of density 'σ' moves with 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. $V[(\varrho_2+\sigma)/(\varrho_1+\sigma)]$

✗ 2. $V[(\varrho_1+\sigma)/(\varrho_2+\sigma)]$

✓ 3. $V[(\varrho_2-\sigma)/(\varrho_1-\sigma)]$

✗ 4. V[(ϱ_1-σ)/(ϱ_2-σ)]

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.46 **If ∝ 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

✗ 1. $\frac{\alpha Q_1}{\alpha - 1}$

✗ 2. $\frac{\alpha - 1}{\alpha} Q_1$

✓ 3. $\frac{\alpha Q_1}{1 + \alpha}$

✗ 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.47 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. $\frac{2\pi}{T}\sqrt{mr}$

✗ 2. $\frac{Tmr}{4\pi}$

✗ 3. $\frac{2\pi T}{\sqrt{mr}}$

✗ 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.48 **Dimensions of Gyromagnetic ratio are**

Ans

✗ 1. $[L^1M^0T^1I^1]$

✓ 2. $[L^0M^{-1}T^1I^1]$

✗ 3. $[L^1M^0T^0I^{-1}]$

✗ 4. $[L^{-1}M^0T^1I^1]$

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.49 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. $\frac{V^2}{2(\frac{m}{e})}$

✓ 2. $\frac{V^2}{2(\frac{e}{m})}$

✗ 3. $\frac{V^2}{(\frac{e}{m})}$

✗ 4. $\frac{V^2}{(\frac{m}{e})}$

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.50 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 , $MnO_4^{-1}{}_{(aq.)} + Br^{-1}{}_{(aq.)} \rightarrow MnO_{2(s)} + BrO_{3(aq)}^{-1}$,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. $[Pt(NH_3)_4Br_2]Cl_2$

2. $[Co(NH_3)_5SO_4]NO_2$

3. $[Co(NH_3)_5NO_2]SO_4$

4. $[Pt(NH_3)_4Cl_2]\ Br_2$

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 J

3. -4.18 J

4. +4.8 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.10 **Which among the following is used in the treatment of cancer?**

Ans
✗ 1. cis-$[Pt(en)_2Cl_2]$
✓ 2. cis-$[PtCl_2(NH_3)_2]$
✗ 3. trans-$[Pt(en)_2Cl_2]$
✗ 4. trans-$[Pt(NH_3)_2Cl_2]$

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

Ans
✗ 1. $NaNO_3$ and $CaCO_3$
✗ 2. K_2SO_4 and K_2SeO_4
✓ 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.12 **Which among the following compounds is used as selective weed killer?**

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.13 **Calculate the difference between heat of combustion of carbon monoxide gas at constant pressure and at constant volume at 27°C? (R = 2Cal K^{-1} 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.14 **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.15

Identify B in the following reaction,

$$\text{Acetaldoxime} \xrightarrow[\text{alcohol}]{\text{Na}} A \xrightarrow[\text{HCl}]{NaNO_2} B + H_2O + N_2\uparrow$$

Ans

✗ 1. $CH_3CH_2CH_2OH$

✓ 2. C_2H_5OH

✗ 3. C_2H_5Cl

✗ 4. $C_2H_5NH_2$

Question Type : **MCQ**
Question ID : **469665527**
Option 1 ID : **4696652108**
Option 2 ID : **4696652107**
Option 3 ID : **4696652106**
Option 4 ID : **4696652105**

Status : **Marked For Review**
Chosen Option : **2**

Q.16 **Which among the following solids shows Frenkel defect ?**

Ans
✗ 1. NaCl
✗ 2. C_sCl
✗ 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.17 **A cold drink bottle contains 200 mL liquid in which CO_2 is 0.1 molar . Considering CO_2 as an 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.18

In the reaction,

$$2n\ R\text{-}X \xrightarrow[\text{Dry ether}]{+2n\ Na} \text{product}$$

The product obtained is

Ans
✗ 1. 2n Alkene
✗ 2. n Sodium halide
✗ 3. n Alchol

✔ 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.19 **The bacteriostatic antibiotic from the following is**

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.20 **Nitroalkanes are obtained in laboratory from primary or secondary alkyl halides by the action 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.21 **Which of following bonds has maximum bond length ?**

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.25 Mandelonitrile is obatined by the reaction between hydrogen cyanide and

Ans
- ✗ 1. Propionaldehyde
- ✓ 2. Benzaldehyde
- ✗ 3. Acetaldehyde
- ✗ 4. Acetone

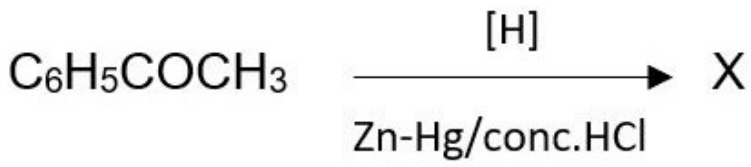
Question Type : **MCQ**
Question ID : **469665521**
Option 1 ID : **4696652084**
Option 2 ID : **4696652081**
Option 3 ID : **4696652082**
Option 4 ID : **4696652083**
Status : **Answered**
Chosen Option : **3**

Q.26 The ionic charges on chromate ion and dichromate ion respectively is

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.27 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.28 **What is the percentage of carbon in urea ? (At mass C=12, H=1, N=14,O=16)**

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.29 **∝ - butylene when subjected to hydroboration oxidation reaction, yields**

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.30 **Calculate Vant Hoff factor for 0.2 m aqueous solution of KCl which freezes at -0.680^{0}C. (K_f=1.86 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.31 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 , CO_2

✗ 2. NH_4Cl , H_2O , $NaCl$

✓ 3. $NaCl$, NH_3 ,$Ca(OH)_2$

✗ 4. $NaCl$, $CaCO_3$, H_2SO_4

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.32 What is the H-S-H bond angle in H_2S?

Ans

✗ 1. 104.5^0

✓ 2. 92.1^0

✗ 3. 91^0

✗ 4. 90^0

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.33 ' K ' is Henry's constant and has the unit

Ans

✗ 1. atm $mol^{-1}dm^3$

✗ 2. $mol^{-1}dm^3atm^{-1}$

✗ 3. atm mol dm^{-3}

✓ 4. mol $dm^{-3}atm^{-1}$

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.34 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.35 Which among the following group 15 elements does not exhibit allotropy ?

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

Ans
✗ 1. NO_2
✓ 2. N_2O_3
✗ 3. N_2O_4
✗ 4. N_2O_5

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.37 For the elementary reaction $2SO_{2(g)} + O_{2(g)} \rightarrow 2SO_{3(g)}$, identify the correct among the following relations

Ans
✗ 1. $\frac{-d[SO_{2(g)}]}{dt} = \frac{-d[O_{2(g)}]}{dt}$

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.38 For a process, entropy change of a system is expressed as

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.39 Which among the following is NOT a semi-synthetic polymer.

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.40 **Bassemerization is used in the extraction of**

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.41 **Which among the following reaction is an example of a zero order reaction?**

Ans
✗ 1. $C_{12}H_{22}O_{11(aq.)} + H_2O_{(l)} \rightarrow C_6H_{12}O_{6(aq.)} + C_6H_{12}O_{6(aq.)}$
✓ 2. $2NH_{3(g)} \xrightarrow{Pt} N_{2(g)} + 3H_2$
✗ 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.42 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 $ohm^{-1}cm^2mol^{-1}$
✓ 2. 5.0 $ohm^{-1}cm^2mol^{-1}$
✗ 3. 2.5 $ohm^{-1}cm^2mol^{-1}$
✗ 4. 2.0 $ohm^{-1}cm^2mol^{-1}$

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 $Ba(NO_3)_2$ solution is 2.74, the degree of dissociaion 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**

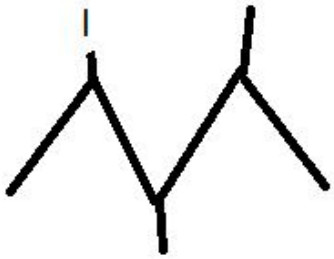
Q.4 The bond line formula of 1-iodo -2,3-dimethyl pentane is

6

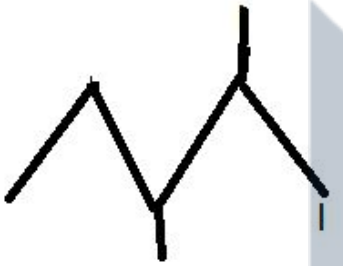
Ans

✗ 1.

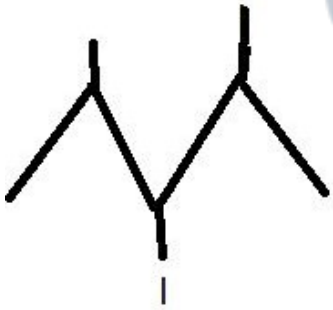
✗ 2.



✓ 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.48 **Which hydride among the following is strongest reducing agent ?**

Ans
✗ 1. AsH_3
✓ 2. BiH_3
✗ 3. PH_3
✗ 4. SbH_3

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.49 **Which of the following is <u>NOT</u> an antiseptic compound?**

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.50 **β-pleated sheets of polypeptide chains are present in**

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.S'P = ...

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 $f'(e)$ =.....

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 $x = \ldots\ldots$

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.

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

$$= e^2 \quad , x = 0$$

✗ 2.

$$f(x) = sinx - cosx \quad , \quad x \neq 0$$

$$= -1 \quad , \quad x = 0$$

✓ 3.

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

$$= -1 \quad , x = 0$$

✗ 4.

$$f(x) = \frac{e^{5x} - e^{2x}}{sin3x} \quad , x \neq 0$$

$$= 1 \quad , x = 0$$

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 =.....

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 $x\frac{dy}{dx} = y - xtan\left(\frac{y}{x}\right)$ 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 1 **A bag contain 6 white and 4 black balls. Two balls are drawn at random. The probability that 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

$$\int \frac{cosx + xsinx}{x^2 + xcosx} dx = \cdots$$

Ans

✗ 1. $log\left|\frac{xsinx}{x+cosx}\right|+c$

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

✗ 3. $log|cosx+xsinx|+c$

✗ 4. $log|x^2+xcosx|+c$

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

Ans

✓ 1. 100 Π cm^2/sec

✗ 2. 40cm^2/sec

✗ 3. 50cm^2/sec

✗ 4. 25cm^2/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.14 If $f(x)=3x-2\ and\ g(x)=x^2$, then $fog(x)=$ …….

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.15 Which of the following is NOT equivalent to $p \longrightarrow q$.

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.16 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.17 The general solution of the differential equation of all circles having centre at A (-1 , 2) is .....

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

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.19 **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) 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.20 $\int \frac{1}{(x^2+1)^2} dx = ...$

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

✗ 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.21 If $\theta = \frac{17\pi}{3}$ then $tan\theta - cot\theta = ...$

Ans

✗ 1. $\frac{1}{2\sqrt{3}}$

✗ 2. $\frac{-1}{2\sqrt{3}}$

✗ 3. $\frac{2}{\sqrt{3}}$

✓ 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**

Chosen Option : **4**

Q.22 Derivative of $log_{e^2}(logx)$ with respect to x is .....

Ans

✗ 1. $\frac{2}{xlogx}$

✗ 2. $\frac{1}{xlogx}$

✔ 3. $\frac{1}{xlogx^2}$

✗ 4. $\frac{2}{logx}$

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.23 In ΔABC ; with usual notations, if $cosA = \frac{SinB}{SinC}$, 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**

Status : **Answered**
Chosen Option : **4**

Q.24 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.25 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 $P(2 \leq X < 5)$ =.....

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.26 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.27 The values of x in $(0, \frac{\pi}{2})$ satisfying the equation $sinxcosx = \frac{1}{4}$ 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.28 If $\bar{a}+\bar{b}, \bar{b}+\bar{c}$ and $\bar{c}+\bar{a}$ are coterminous edges of a parallelepiped then its volume is……..

Ans

✘ 1. $3[\bar{a}\ \bar{c}\ \bar{b}]$

✘ 2. 0

✔ 3. $2[\bar{a}\ \bar{b}\ \bar{c}]$

✘ 4. $4[\bar{b}\ \bar{a}\ \bar{c}]$

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**

Q.29

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

then P $(27 \leq x \leq 33) =$ ……

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.30 The joint equation of pair of straight lines passing through origin and having slopes $(1+\sqrt{2})$ and $\left(\frac{1}{1+\sqrt{2}}\right)$ is ……

Ans

✔ 1. $x^2 - 2\sqrt{2}xy + y^2 = 0$

✘ 2. $x^2 - 2\sqrt{2}xy - y^2 = 0$

✘ 3. $x^2 + 2xy - y^2 = 0$

✗ 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.31 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

✗ 1. 30°

✗ 2. 60°

✗ 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.32 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

✗ 1. -3

✗ 2. 0

✓ 3. -1

✗ 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**

Chosen Option : **3**

Q.33 The equivalent form of the statement $\sim(p \longrightarrow \sim q)$ 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.34 If A = $\{ x \in R : x^2 - 5|x| + 6 = 0 \}$, then $n(A)$ = ...

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

$f(0) = \ldots$

Ans

✘ 1. loga-logb

✔ 2. $a + b$

✗ 3. $loga + logb$

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

Ans

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

✗ 2. (2 , -1 , 5)

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

✓ 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.37 $\int \frac{\sqrt{x^2 - a^2}}{x} dx = \ldots\ldots$

Ans ✓ 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.38 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.39

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

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.40 The number of solutions of $sin^2\theta = \frac{1}{2}$ in [0, π] 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.41 If $\bar{p}, \bar{q}$ and $\bar{r}$ are nonzero, noncoplanar vectors then $[\bar{p}+\bar{q}-\bar{r} \quad \bar{p}-\bar{q} \quad \bar{q}-\bar{r}] = \ldots$

Ans

✗ 1. $3[\bar{p}\ \bar{q}\ \bar{r}]$

✗ 2. 0

✓ 3. $[\bar{p}\ \bar{q}\ \bar{r}]$

✗ 4. $2[\bar{p}\ \bar{q}\ \bar{r}]$

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.42 **Which of the following equation has no solution ?**

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.43 The minimum value of $z = 10x + 25y$ subject to $0 \le x \le 3$, $0 \le y \le 3$, $x + y \ge 5$ 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.44 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.45 **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. $\bar{r}.\left(5\hat{i} + 2\hat{j} + 2\hat{k}\right) = 1$

✘ 2. $\bar{r}.\left(5\hat{i} + 2\hat{j} + 2\hat{k}\right) = -1$

✘ 3. $\bar{r}.\left(5\hat{i} - 2\hat{j} + 2\hat{k}\right) = -5$

✘ 4. $\bar{r}.\left(5\hat{i} - 2\hat{j} - 2\hat{k}\right) = 1$

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.46 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.47 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.48 **The joint equation of the lines passing through the origin and trisecting the first quadrant is .....**

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.49 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.50 If $x = \sqrt{a^{\sin^{-1}t}}$, $y = \sqrt{a^{\cos^{-1}t}}$, then $\frac{dy}{dx} = \ldots\ldots$

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**