National Testing Agency

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B. Tech

Group Number :	1
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Group Marks :	300

Mathematics Section A

Section Id :	69527831
Section Number :	1
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	20
Number of Questions to be attempted :	20
Section Marks :	80
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	69527831
Question Shuffling Allowed :	Yes
Is Section Default? :	No

Question Number : 1 Question Id : 695278376 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

For the function $f: [1,\infty) \to [1, \infty)$ defined by $f(x) = (x-1)^4 + 1$, among the two statements:

(I) The set $S = \{x \in [1, \infty) : f(x) = f^{-1}(x)\}$ contains exactly two elements, and

(II) The set $S = \{x \in [1, \infty) : f(x) = f^{-1}(x+1)\}$ is an empty set,

Options :

6952781276. only (I) is TRUE

6952781277. only (II) is TRUE

6952781278. both (I) and (II) are TRUE

6952781279. neither (I) nor (II) is TRUE

Question Number : 2 Question Id : 695278377 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Let $S = \{z \in \mathbb{C} : z^2 + 4z + 16 = 0\}$. Then $\sum_{z \in S} | z + \sqrt{3}\,i |^2$ is equal to:

Options :

6952781280. 42

6952781281. 23

6952781282. 27

6952781283. 38

Question Number : 3 Question Id : 695278378 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

If the system of equations:

$x + y + z = 5$

$x + 2y + 3z = 9$

$x + 3y + \lambda z = \mu$

has infinitely many solutions, then the value of $\lambda + \mu$ is:

Options :

6952781284. 16

6952781285. 18

6952781286. 19

6952781287. 21

Question Number : 4 Question Id : 695278379 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

If $\alpha = 1$ and $\beta = 1 + i\sqrt{2}$, where $i = \sqrt{-1}$ are two roots of the equation

$x^3 + ax^2 + bx + c = 0$, $a, b, c \in \mathbb{R}$, then $\int_{-1}^{1} \left(x^3 + ax^2 + bx + c\right) dx$ is equal to:

Options :

6952781288. -2

6952781289. -4

6952781290. -8

6952781291. -10

Question Number : 5 Question Id : 695278380 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

If the quadratic equation $(\lambda + 2)x^2 - 3\lambda x + 4\lambda = 0$, $\lambda \neq -2$, has two positive roots, then the number of possible integral values of λ is:

Options :

6952781292. 1

6952781293. 2

6952781294. 3

6952781295. 4

Question Number : 6 Question Id : 695278381 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Let $A=\begin{bmatrix}1 & 2 & 7\\ 4 & -2 & 8\\ 3 & 8 & -7\end{bmatrix}$ and $\det(A-\alpha I)=0$, where α is a real number. If the largest possible value of α is p, then the circle $(x-p)^2+(y-2p)^2=320$, intersects the co-ordinate axes at

Options :

6952781296. 1 point

6952781297. 2 points

6952781298. 3 points

6952781299. 4 points

Question Number : 7 Question Id : 695278382 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Let $\alpha=\frac{1}{4}+\frac{1}{8}+\frac{1}{16}+\ldots\infty$ and $\beta=\frac{1}{3}+\frac{1}{9}+\frac{1}{27}+\ldots\infty$. Then the value of $(0.2)^{\log_{\sqrt{5}}(\alpha)}+(0.04)^{\log_5(\beta)}$ is equal to:

Options :

6952781300. 4

6952781301. 5

6952781302. 8

6952781303. 25

Question Number : 8 Question Id : 695278383 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

For 10 observations $x_1, x_2, \ldots, x_{10}$, if $\sum_{i=1}^{10}(x_i+2)^2=180$ and $\sum_{i=1}^{10}(x_i-1)^2=90$, then their standard deviation is:

Options :

6952781304. 2

6952781305. $\sqrt{3}$

6952781306. $2\sqrt{2}$

6952781307. 3

Question Number : 9 Question Id : 695278384 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

In the expansion of $\left(9x-\frac{1}{3\sqrt{x}}\right)^{18}$, $x>0$, if the term independent of x is (221)k, then k is equal to:

Options :

6952781308. 84

6952781309. 78

6952781310. 168

6952781311. 198

Question Number : 10 Question Id : 695278385 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Let P (3cos α, 2sin α), $\alpha \neq 0$, be a point on the ellipse $\frac{x^2}{9}+\frac{y^2}{4}=1$, Q be a point on the circle $x^2+y^2-14x-14y+82=0$ and R be a point on the line $x+y=5$ such that the centroid of the triangle PQR is $\left(2+\cos\alpha, 3+\frac{2}{3}\sin\alpha\right)$. Then the sum of the ordinates of all possible points R is:

Options :

6952781312. 6

6952781313. 2

6952781314. 4

6952781315. 8

Question Number : 11 Question Id : 695278386 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Let $H: \frac{x^2}{a^2}-\frac{y^2}{b^2}=1$ be a hyperbola such that the distance between its foci is 6 and the distance between its directrices is $\frac{8}{3}$. If the line $x=\alpha$ intersects the hyperbola H at the points A and B such that the area of the triangle AOB is $4\sqrt{15}$, where O is the origin, then α^2 equals

Options :

6952781316. 12

6952781317. 16

6952781318. 24

6952781319. 25

Question Number : 12 Question Id : 695278387 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

$\max\limits_{0 \le x \le \pi}\left(16\sin\left(\frac{x}{2}\right)\cos^3\left(\frac{x}{2}\right)\right)$ is equal to:

Options :

6952781320. $\frac{3\sqrt{3}}{2}$

6952781321. $3\sqrt{3}$

6952781322. $4\sqrt{3}$

6952781323. $6\sqrt{3}$

Question Number : 13 Question Id : 695278388 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The shortest distance between the lines

$\vec{r} = \left(\frac{1}{3}\hat{i} + 2\hat{j} + \frac{8}{3}\hat{k}\right) + \lambda\left(2\hat{i} - 5\hat{j} + 6\hat{k}\right)$

and $\vec{r} = \left(-\frac{2}{3}\hat{i} - \frac{1}{3}\hat{k}\right) + \mu\left(\hat{j} - \hat{k}\right), \lambda, \mu \in \mathbb{R}$, is:

Options :

6952781324. $\sqrt{5}$

6952781325. 3

6952781326. $2\sqrt{3}$

6952781327. $\sqrt{15}$

Question Number : 14 Question Id : 695278389 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

If $\left(2\alpha + 1, \alpha^2 - 3\alpha, \frac{\alpha - 1}{2}\right)$ is the image of $(\alpha, 2\alpha, 1)$ in the line

$\frac{x-2}{3} = \frac{y-1}{2} = \frac{z}{1}$, then the possible value(s) of α is (are)

Options :

6952781328. Only 3

6952781329. Only 3 and -1

6952781330. Only 3, $\frac{1}{4}$ and -1

6952781331. Only 3 and $\frac{1}{4}$

Question Number : 15 Question Id : 695278390 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Let $\hat{u}$ and $\hat{v}$ be unit vectors inclined at an acute angle such that $\left|\hat{u}\times\hat{v}\right|=\frac{\sqrt{3}}{2}$. If $\vec{A}=\lambda\,\hat{u}+\hat{v}+\left(\hat{u}\times\hat{v}\right)$, then λ is equal to:

Options :

6952781332. $\frac{4}{3}\left(\vec{A}\cdot\hat{u}\right)-\frac{2}{3}\left(\vec{A}\cdot\hat{v}\right)$

6952781333. $\frac{2}{3}\left(\vec{A}\cdot\hat{u}\right)-\frac{1}{3}\left(\vec{A}\cdot\hat{v}\right)$

6952781334. $\frac{4}{3}\left(\vec{A}\cdot\hat{u}\right)+\frac{2}{3}\left(\vec{A}\cdot\hat{v}\right)$

6952781335. $\left(\vec{A}\cdot\hat{u}\right)-\frac{1}{2}\left(\vec{A}\cdot\hat{v}\right)$

Question Number : 16 Question Id : 695278391 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Let for some $\alpha\in\mathbb{R}$, $f:\mathbb{R}\to\mathbb{R}$ be a function satisfying $f(x+y)=f(x)+2y^2+y+\alpha xy$ for all $x, y\in\mathbb{R}$. If $f(0)=-1$ and $f(1)=2$, then the value of $\sum_{n=1}^{5}\left(\alpha+f\left(n\right)\right)$ is:

Options :

6952781336. 110

6952781337. 140

6952781338. 150

6952781339. 170

Question Number : 17 Question Id : 695278392 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Let

$A=\{(a, b, c) : a, b, c$ are non-negative integers and $a+b+2c=22\}$.

Then $n(A)$ is equal to:

Options :

6952781340. 121

6952781341. 124

6952781342. 144

6952781343. 169

Question Number : 18 Question Id : 695278393 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The area of the region bounded by the curves $x + 3y^2 = 0$ and $x + 4y^2 = 1$ is equal to:

Options :

6952781344. $\frac{1}{3}$

6952781345. $\frac{2}{3}$

6952781346. $\frac{4}{3}$

6952781347. $\frac{5}{3}$

Question Number : 19 Question Id : 695278394 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Let $y = y(x)$ be the solution of the differential equation:

$$\frac{dy}{dx} + \left(\frac{6x^2 + \left(3x^2 + 2x^3 + 4\right)e^{-2x}}{\left(x^3 + 2\right)\left(2 + e^{-2x}\right)} \right) y = 2 + e^{-2x},$$

$x \in (-1, 2)$, satisfying $y(0) = \frac{3}{2}$. If $y(1) = \alpha(2 + e^{-2})$, then α is equal to:

Options :

6952781348. $\frac{13}{8}$

6952781349. $\frac{6}{13}$

6952781350. $\frac{12}{13}$

6952781351. $\frac{13}{12}$

Question Number : 20 Question Id : 695278395 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The integral $\int_0^1 \cot^{-1}\left(1 + x + x^2\right) dx$ is equal to:

Options :

6952781352. $2\tan^{-1}2+\frac{1}{2}\log_e\left(\frac{5}{4}\right)+\frac{\pi}{2}$

6952781353. $2\tan^{-1}2+\frac{1}{2}\log_e\left(\frac{5}{4}\right)-\frac{\pi}{2}$

6952781354. $2\tan^{-1}2-\frac{1}{2}\log_e\left(\frac{5}{4}\right)+\frac{\pi}{2}$

6952781355. $2\tan^{-1}2-\frac{1}{2}\log_e\left(\frac{5}{4}\right)-\frac{\pi}{2}$

Mathematics Section B

Section Id :	69527832
Section Number :	2
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	5
Number of Questions to be attempted :	5
Section Marks :	20
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	69527832
Question Shuffling Allowed :	Yes
Is Section Default? :	No

Question Number : 21 Question Id : 695278396 Question Type : SA Display Question Number : Yes Keyboard Layout : Inscript

From a month of 31 days, 3 different dates are selected at random. If the probability that these dates are in an increasing A.P. is equal to $\frac{a}{b}$, where $a, b \in$ N and $gcd\,(a, b) = 1$, then $a + b$ is equal to _____

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
1

Question Number : 22 Question Id : 695278397 Question Type : SA Display Question Number : Yes Keyboard Layout : Inscript

Let $f(x)=\begin{cases} e^{x-1} & , x<0 \\ x^2-5x+6 & , x\geq 0 \end{cases}$ and $g(x)=f(|x|)+|f(x)|$. If the number of points where g is not continuous and is not differentiable are α and β respectively, then $\alpha + \beta$ is equal to _____

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal

Text Areas : PlainText
Possible Answers :
1

Question Number : 23 Question Id : 695278398 Question Type : SA Display Question Number : Yes Keyboard Layout : Inscript

Let A, B be points on the two half-lines $x - \sqrt{3}|y| = \alpha$, $\alpha > 0$ at a distance of α from their point of intersection P. The line segment AB meets the angle bisector of the given half-lines at the point Q. If $PQ = \frac{9}{2}$ and R is the radius of the circumcircle of ΔPAB, then $\frac{\alpha^2}{R}$ is equal to _____

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
1

Question Number : 24 Question Id : 695278399 Question Type : SA Display Question Number : Yes Keyboard Layout : Inscript

Let A, B and C be the vertices of a variable right angled triangle inscribed in the parabola $y^2 = 16x$. Let the vertex B containing the right angle be (4, 8) and the locus of the centroid of ΔABC be a conic C_o. Then three times the length of latus rectum of C_o is _____

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
1

Question Number : 25 Question Id : 695278400 Question Type : SA Display Question Number : Yes Keyboard Layout : Inscript

Let f be a twice differentiable function such that

$$f(x) = \int_0^x \tan(t-x)\,dt - \int_0^x f(t)\tan t\,dt,\ x \in \left(-\frac{\pi}{2}, \frac{\pi}{2}\right).$$

Then $f''\left(\frac{\pi}{6}\right) + 12\,f'\left(-\frac{\pi}{6}\right) + f\left(\frac{\pi}{6}\right)$ is equal to _____

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
1

Physics Section A

Section Id : 69527833
Section Number : 3

Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	20
Number of Questions to be attempted :	20
Section Marks :	80
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	69527833
Question Shuffling Allowed :	Yes
Is Section Default? :	No

Question Number : 26 Question Id : 695278401 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Match the **LIST-I** with **LIST-II**

List-I		List-II	
A.	Planck's constant	I.	$M L^2 T^{-2}$
B.	Stopping potential	II.	T^{-1}
C.	Work function	III.	$M L^2 T^{-1}$
D.	Threshold frequency	IV.	$M L^2 T^{-3} A^{-1}$

Choose the ***correct*** answer from the options given below:

Options :

6952781361. A-III, B-IV, C-I, D-II

6952781362. A-I, B-II, C-III, D-IV

6952781363. A-IV, B-III, C-I, D-II

6952781364. A-I, B-IV, C-III, D-II

Question Number : 27 Question Id : 695278402 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Two cars *A* and *B* are moving in the same direction along a straight line with speeds 100 km/h and 80 km/h, respectively such that car *A* is moving ahead of car *B*. A person in car *B* throws a stone with a speed *v* so that it hits the car *A* with a speed of 5 m/s. The value of *v* is _____ km/h.

Options :

6952781365. 18

6952781366. 28

6952781367. 38

6952781368. 48

Question Number : 28 Question Id : 695278403 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

At $t = 0$, a body of mass 100 g starts moving under the influence of a force $\left(5\hat{i}+10\hat{j}\right)$N. After 2 s its position is $\left(2x\hat{i}+5y\hat{j}\right)$ m. The ratio $x : y$ is_____.

Options :

6952781369. $1:2$

6952781370. $2:5$

6952781371. $5:2$

6952781372. $5:4$

Question Number : 29 Question Id : 695278404 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

If x and y coordinates of a projectile as a function of time (t) are given as $24t$ and $43.6t - 4.9t^2$, respectively, then the angle (in degrees) made by the projectile with horizontal when $t = 2$ s is _____.

Options :

6952781373. 60

6952781374. 45

6952781375. 30

6952781376. 75

Question Number : 30 Question Id : 695278405 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The height in terms of radius of the earth (R), at which the acceleration due to gravity becomes $\frac{g}{9}$, where g is acceleration due to gravity on earth's surface, is _____.

Options :

6952781377. $\sqrt{3}R$

6952781378. $2\sqrt{2}R$

6952781379. $2R$

6952781380. $\frac{4}{9}R$

Question Number : 31 Question Id : 695278406 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A metal string A is suspended from a rigid support and its free end is attached to a block of mass M. Second block having mass 2M is suspended at the bottom of the first block using a string B. The area of cross sections of strings A and B are same. The ratio of lengths of strings of A to B is 2 and the ratio of their Young's moduli (Y_A/ Y_B) is 0.5. The ratio of elongations in A to B is _____.

Options :

6952781381. 1

6952781382. 4

6952781383. 8

6952781384. 6

Question Number : 32 Question Id : 695278407 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A water spray gun is attached to a hose of cross sectional area 30 cm^2. The gun comprises of 10 perforations each of cross sectional area of 15 mm^2. If the water flows in the hose with the speed of 50 cm/s, calculate the speed at which the water flows out from each perforation. (Neglect any edge effects)

Options :

6952781385. 100 m/s

6952781386. 10 m/s

6952781387. 1000 m/s

6952781388. 15×10^2 m/s

Question Number : 33 Question Id : 695278408 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Given below are two statements: one is labelled as **Assertion A** and the other is labelled as **Reason R**

Assertion A: If the average kinetic energy of H_2 and O_2 molecules, kept in two different sized containers are same, then their temperatures will be same.

Reason R: The r.m.s. speed of H_2 and O_2 molecules are same at same temperature.

Choose the ***correct*** answer from the options given below

Options :

6952781389. Both **A** and **R** are true and **R** is the correct explanation of **A**

6952781390. Both **A** and **R** are true but **R** is **NOT** the correct explanation of **A**

6952781391. **A** is true but **R** is false

6952781392. **A** is false but **R** is true

Question Number : 34 Question Id : 695278409 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The temperature of a metal strip having coefficient of linear expansion α is increased from T_1 to T_2 resulting in increase of its length by ΔL_1. The temperature is further increased from T_2 to T_3 such that the increase in its length is ΔL_2.

Given $T_3 + T_1 = 2T_2$ and $T_2 - T_1 = \Delta T$, the value of ΔL_2 is _____.

Options :

6952781393. $\Delta L_1[1+ 2\alpha^2 (\Delta T)^2]$

6952781394. $\Delta L_1[1+\alpha^2(\Delta T)^2]$

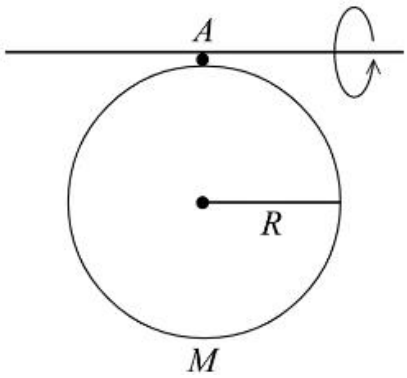
6952781395. $\Delta L_1[1+2\alpha\Delta T]$

6952781396. $\Delta L_1[1+\alpha\Delta T]$

Question Number : 35 Question Id : 695278410 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A uniform disc of radius R and mass M is free to oscillate about the axis A as shown in the figure. For small oscillations the time period is _____.

(g is acceleration due to gravity)



Options :

6952781397. $2\pi\sqrt{\frac{5R}{4g}}$

6952781398. $2\pi\sqrt{\frac{2R}{3g}}$

6952781399. $2\pi\sqrt{\frac{3R}{2g}}$

6952781400. $2\pi\sqrt{\frac{3R}{g}}$

Question Number : 36 Question Id : 695278411 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A rigid dipole undergoes a simple harmonic motion about its centre in the presence of an electric field $\vec{E}_1 = E_0\hat{x}$. If another electric field $\vec{E}_2 = 2E_0(\hat{y}+\hat{z})$ is introduced to the system, what will be the percentage change in the frequency of the oscillation (approximate)?

Options :

6952781401. 73%

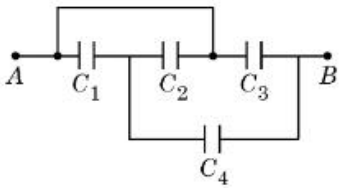
6952781402. 63%

6952781403. 83%

6952781404. 53%

Question Number : 37 Question Id : 695278412 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

From the circuit given below, the capacitance between terminals A and B shown in the circuit is _____ μF.
(take $C_1 = C_2 = C_3 = 1$ μF and $C_4 = 2$ μF.)



Options :

6952781405. 2

6952781406. 7/2

6952781407. 7/3

6952781408. 5/2

Question Number : 38 Question Id : 695278413 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Given below are two statements: one is labelled as **Assertion A** and the other is labelled as **Reason R**

Assertion A: In electrostatics, a conductor does not store any net charge inside.

Reason R: Inside the capacitor (with no dielectric medium), the free charge carriers, if placed between the plates of capacitor, experience force and drift.

Choose the ***correct*** answer from the options given below

Options :

6952781409. Both **A** and **R** are true and **R** is the correct explanation of **A**

6952781410. Both **A** and **R** are true but **R** is **NOT** the correct explanation of **A**

6952781411. **A** is true but **R** is false

6952781412. **A** is false but **R** is true

Question Number : 39 Question Id : 695278414 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A solenoid has a core made of material with relative permeability 400. The magnetic field produced in the interior of solenoid is 1.0 T. The magnetic intensity in SI units is $\alpha \times 10^5$. The value of α is _____.

(Free space permeability $\mu_0 = 4\pi \times 10^{-7}$ SI units.)

Options :

6952781413. $\frac{25}{\pi}$

6952781414. $\frac{1}{16\pi}$

6952781415. $\frac{1}{\pi}$

6952781416. $\frac{1}{4\pi}$

Question Number : 40 Question Id : 695278415 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A magnetic field vector in an electromagnetic wave is represented by $\vec{B} = B_0 \sin\left(2\pi vt - \frac{2\pi x}{\lambda}\right)\hat{j}$. Its associated electric field vector is _____.

Options :

6952781417. $\vec{E} = -v\lambda B_0 \sin\left(2\pi vt - \frac{2\pi x}{\lambda}\right)\hat{k}$

6952781418. $\vec{E} = -v\lambda B_0 \sin\left(2\pi vt - \frac{2\pi x}{\lambda}\right)\hat{i}$

6952781419. $\vec{E} = v\lambda B_0 \sin\left(2\pi vt - \frac{2\pi x}{\lambda}\right)\hat{k}$

6952781420. $\vec{E} = v\lambda B_0 \sin\left(2\pi vt - \frac{2\pi x}{\lambda}\right)\hat{i}$

Question Number : 41 Question Id : 695278416 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A convex lens is made from glass material having refractive index of 1.4 with same radius of curvature on both sides. The ratio of its focal length and radius of curvature is _____.

Options :

6952781421. 0.5

6952781422. 2.5

6952781423. 0.8

6952781424. 1.25

Question Number : 42 Question Id : 695278417 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

An unpolarized light of certain intensity passes through a combination of two polarizers whose transmission axes are at 30° and 90°, respectively, with respect to the horizontal axis. A third polarizer with its transmission axis at 60° with the horizontal axis is placed between the two existing polarizers. The ratio of the output intensities with and without the third polarizer is _____.

Options :

6952781425. 3/4

6952781426. 4/3

6952781427. 9/4

6952781428. 4/9

Question Number : 43 Question Id : 695278418 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

In Rutherford's alpha-particle scattering experiment, only a few alpha particles rebound back because

A. The size of gold nucleus is very small as compared to the size of gold atom.
B. Alpha particle and gold nucleus have equal charge.
C. The impact parameter is minimum for a few alpha particles.
D. A few alpha particles have very high kinetic energy.
E. Only a few alpha particles undergo head-on collision with the nuclei.

Choose the correct answer from the options given below:

Options :

6952781429. A, B Only

6952781430. B, E Only

6952781431. C, D Only

6952781432. A, C, E Only

Question Number : 44 Question Id : 695278419 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The de Broglie wavelength associated with an electron accelerated through a potential difference V is λ_e and the de Broglie wavelength associated with a proton accelerated through the same potential difference is λ_p . If their corresponding masses are m_e and m_p, respectively, then the ratio of their de Broglie wavelengths $\left(\frac{\lambda_e}{\lambda_p}\right)$ is _____.

Options :

6952781433. $\sqrt{\frac{m_p}{m_e}}$

6952781434. $\sqrt{\frac{m_e}{m_p}}$

6952781435. $\frac{m_p}{m_e}$

6952781436. $\left(\frac{m_p}{m_e}\right)^2$

Question Number : 45 Question Id : 695278420 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Given below are two statements: one is labelled as **Assertion A** and the other is labelled as **Reason R**

Assertion A: A diode under reverse-biased condition provides very small current which is nearly independent of voltage until a critical limit at which the current increases drastically.

Reason R: Below the critical voltage limit, only majority charge carriers flow which increases drastically above critical voltage.

choose the ***correct*** answer from the options given below

Options :

6952781437. Both **A** and **R** are true and **R** is the correct explanation of **A**

6952781438. Both **A** and **R** are true but **R** is **NOT** the correct explanation of **A**

6952781439. **A** is true but **R** is false

6952781440. **A** is false but **R** is true

Physics Section B

Section Id :	69527834
Section Number :	4
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	5
Number of Questions to be attempted :	5
Section Marks :	20
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	69527834
Question Shuffling Allowed :	Yes
Is Section Default? :	No

Question Number : 46 Question Id : 695278421 Question Type : SA Display Question Number : Yes Keyboard Layout : Inscript

A diode has Zener voltage of 10 V and maximum power dissipation of 0.5 W, then the minimum resistance to be used in series with this diode for safety when it is connected to a 25 V power supply is _____Ω.

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
1

Question Number : 47 Question Id : 695278422 Question Type : SA Display Question Number : Yes Keyboard Layout : Inscript

A gun mounted on the ground fires bullets in all directions with same speed. The farthest distance the bullets could reach is 6.4 m. The speed of the bullets from the gun is _____m/s.

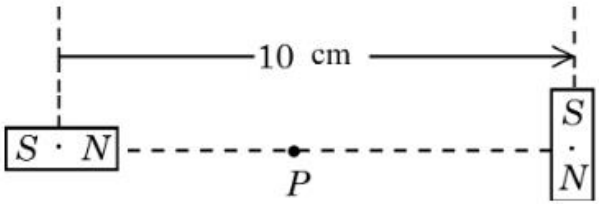
(take g = 10 m/s^2)

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
1

Question Number : 48 Question Id : 695278423 Question Type : SA Display Question Number : Yes Keyboard Layout : Inscript

Two identical small bar magnets each of dipole moment $3\sqrt{5}$ J/T are placed at a center to center separation of 10 cm, with their axes perpendicular to each other as shown in figure. The value of magnetic field at the point P midway between the magnets is $\alpha \times 10^{-3}$ T. The value of α is _____.

($\mu_0 = 4\pi \times 10^{-7}$ Tm/A)



Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
1

Question Number : 49 Question Id : 695278424 Question Type : SA Display Question Number : Yes Keyboard Layout : Inscript

A circular coil of radius 2 cm and 125 turns carries a current of 1 A. The coil is placed in a uniform magnetic field of magnitude 0.4 T. The axis of the coil makes an angle of 30° with the direction of the magnetic field. The torque acting on the coil is $\alpha \times 10^{-4}$ N.m. The value of α is_____.
($\pi = 3.14$)

Response Type : Numeric

Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
1

Question Number : 50 Question Id : 695278425 Question Type : SA Display Question Number : Yes Keyboard Layout : Inscript

In a double slit experiment, when one of the slits is covered by a transparent mica sheet of refractive index 1.56, the central fringe shifts to the position of 7^{th} bright fringe, obtained with both slits uncovered. If the light source wavelength is 450 nm, the thickness of mica sheet is $\alpha \times 10^{-9}$ m. The value of α is _____.

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
1

Chemistry Section A

Section Id :	69527835
Section Number :	5
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	20
Number of Questions to be attempted :	20
Section Marks :	80
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	69527835
Question Shuffling Allowed :	Yes
Is Section Default? :	No

Question Number : 51 Question Id : 695278426 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The correct order of total number of atoms present in

(A) 2 moles of cyclohexane

(B) 684 g of sucrose

(C) 90.8 L of dihydrogen at STP

is:

Options :

6952781446. $C > A > B$

6952781447. $C > B > A$

6952781448. $B > C > A$

6952781449. $B > A > C$

Question Number : 52 Question Id : 695278427 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The species having identical radii according to the Bohr's theory are:

A. H (first orbit)
B. He^{+} (first orbit)
C. He^{+} (Second orbit)
D. Li^{2+} (first orbit)
E. Be^{3+} (Second orbit)

Choose the correct answer from the options given below:

Options :

6952781450. A and C Only

6952781451. A and E Only

6952781452. B and E Only

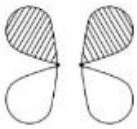
6952781453. C and D Only

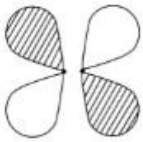
Question Number : 53 Question Id : 695278428 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

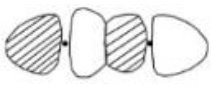
Which of the following pictorial diagram most correctly represents the π^* (π - antibonding) molecular orbital between two atoms if the internuclear axis is taken to be in the z-direction ($\xrightarrow{\text{z-axis}}$) ?

Options :

6952781454. 

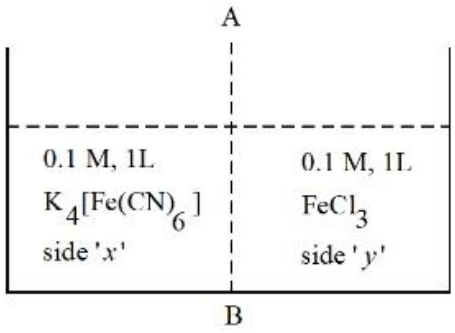
6952781455. 

6952781456. 

6952781457. 

Question Number : 54 Question Id : 695278429 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

At 27 °C, 0.1 M, 1 L $K_4[Fe(CN)_6]$ aqueous solution and 0.1 M, 1 L $FeCl_3$ aqueous solution are placed in a container separated by a semi permeable membrane AB. Assume complete dissociation of both the solutes. Which of the following statement is ***correct***?



Options :

6952781458. Blue color is formed on both sides.

6952781459. Ionic solutes in aqueous solution can pass through semi-permeable membrane.

6952781460. Solution on side 'y' is hypotonic.

6952781461. To cause the reverse flow of solvent during osmosis, external pressure (any value) should be applied to side '*x*'.

Question Number : 55 Question Id : 695278430 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

20 mL of a solution of acetic acid required 28.4 mL of 0.1 M NaOH for its neutralization. A solution (X) was prepared by mixing 20 mL of the above acetic acid and 14.2 mL of 0.1 M NaOH solution. What is the pH of the solution (X)? (pK_a value of acetic acid is 4.75).

Options :

6952781462. 7.0

6952781463. 4.75

6952781464. 3.5

6952781465. 4.82

Question Number : 56 Question Id : 695278431 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Match the **LIST-I** with **LIST-II**

	List-I **Reaction**		**List-II** **Mechanism**
A.	Williamson Synthesis	I.	Electrophilic addition
B.	Friedel Craft Reaction	II.	Free radical substitution
C.	Bromination of vinyl benzene	III.	Nucleophilic substitution
D.	Chlorination of toluene in light	IV.	Electrophilic substitution

Choose the ***correct*** answer from the options given below:

Options :

6952781466. A-III, B-I, C-II, D-IV

6952781467. A-III, B-IV, C-II, D-I

6952781468. A-III, B-IV, C-I, D-II

6952781469. A-I, B-III, C-IV, D-II

Question Number : 57 Question Id : 695278432 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The 1st ionization enthalpy for Mg is +737 kJ/mol. The most probable estimated value of the 2nd ionization enthalpy of Mg is _____.

Options :

6952781470. −906 kJ/mol

6952781471. −856 kJ/mol

6952781472. +1450 kJ/mol

6952781473. +590 kJ/mol

Question Number : 58 Question Id : 695278433 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The electronegativity of a group 13 element 'E' is same as that of Ge (on Pauling scale and upto one decimal point). The **CORRECT** statements about E^{3+} are

A. It can act as a reducing agent.
B. It can act as an oxidizing agent.
C. E^{3+} is more stable than E^{+}.
D. The standard electrode potential value for E^{3+}/E is positive.

Choose the correct answer from the options given below:

Options :

6952781474. A and C Only

6952781475. B and C Only

6952781476. B and D Only

6952781477. A and D Only

Question Number : 59 Question Id : 695278434 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Pairs of elements with the same number of electrons in their respective 4f orbital are

[Atomic number. Eu-63, Gd-64, Dy-66, Ho-67, Tm-69, Yb-70, Lu-71, Hf-72]

A. (Eu and Gd)
B. (Dy and Ho)
C. (Yb and Hf)
D. (Lu and Tm)

Choose the correct answer from the options given below:

Options :

6952781478. B and C Only

6952781479. A and B Only

6952781480. A and D Only

6952781481. A and C Only

Question Number : 60 Question Id : 695278435 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Consider the metal complexes $[Ni(en)_3]^{2+}$ (A), $[NiCl_4]^{2-}$ (B) and $[Ni(NH_3)_6]^{2+}$(C). Choose the **CORRECT** option by considering the number of unpaired electrons present in (A), (B) and (C) respectively and the order of frequency of absorption.

Options :

6952781482. 2, 2, 2 and (A) > (C) > (B)

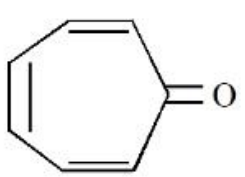
6952781483. 0, 2, 0 and (A) > (C) > (B)

6952781484. 2, 2, 0 and (B) > (C) > (A)

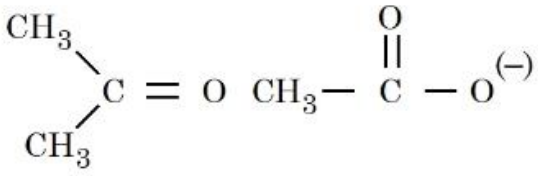
6952781485. 2, 2, 2 and (C) > (A) > (B)

Question Number : 61 Question Id : 695278436 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Consider the following molecules/species:



(*x*)



(y)

(z)

The correct order of carbon – oxygen double bond length is :

Options :

6952781486. *x* > y > z

6952781487. $y > z > x$

6952781488. $z > x > y$

6952781489. $x > z > y$

Question Number : 62 Question Id : 695278437 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Consider $|x|$ is the difference in oxidation states of Mn in highest manganese fluoride and highest manganese oxide. The ions with $|x|$ number of unpaired electrons from the following are:

A. Sc^{3+}
B. Zn^{2+}
C. V^{2+}
D. Fe^{2+}
E. Co^{2+}

Choose the correct answer from the options given below:

Options :

6952781490. A and B Only

6952781491. C, D and E Only

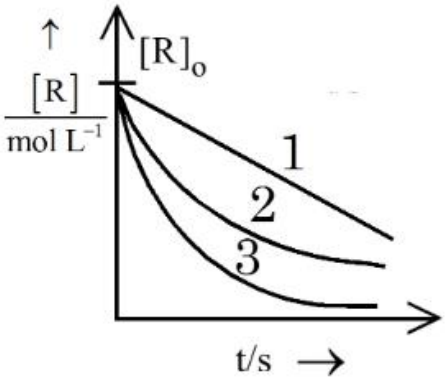
6952781492. C and E Only

6952781493. B and E Only

Question Number : 63 Question Id : 695278438 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Consider the given graph showing variation of reactant concentration with time.

Three different reactions were started with identical initial concentration of reactants. Which of the following statement is correct?



Options :

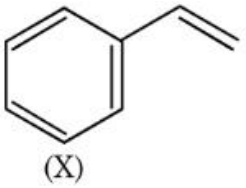
6952781494. The order of all the three reactions is same.

6952781495. The rate constant of reaction 3 is larger than the rate constant of reaction 2 if the order of reaction is same for both.

6952781496. The SI unit of rate constant of reaction 1 is s^{-1}.

6952781497. Thermal decomposition of HI on gold surface is an example of reaction 2.

Question Number : 64 Question Id : 695278439 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical



(X)

(i) Br_2 / $CHCl_3$
(ii) $NaNH_2$ excess
(iii) CH_3I
(iv) H_2, Na/NH_3 (l)

→ Major Product (Y)

Compound (X) is subjected to the sequence of reactions as shown above. Molar mass of the major product (Y) formed is _____ g mol^{-1}.

(Given molar mass in g mol^{-1} C:12, H: 1, O: 16)

Options :

6952781498. 90

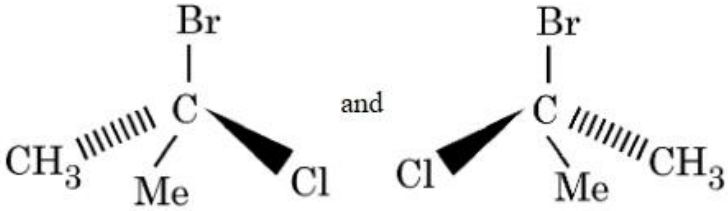
6952781499. 118

6952781500. 160

6952781501. 125

Question Number : 65 Question Id : 695278440 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The following structures are



Options :

6952781502. enantiomers.

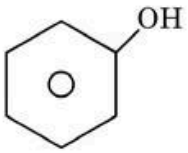
6952781503. identical molecules.

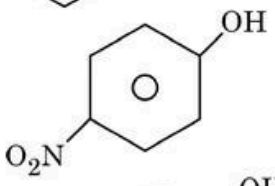
6952781504. diastereomers.

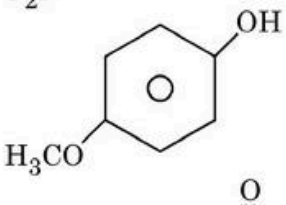
6952781505. meso compounds.

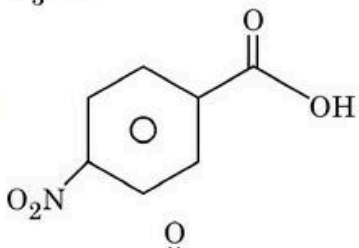
Question Number : 66 Question Id : 695278441 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

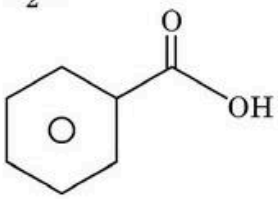
The descending order of acidity among the following compounds is:

A. 

B. 

C. 

D. 

E. 

Choose the correct answer from the options given below:

Options :

6952781506. $B > D > E > A > C$

6952781507. $D > B > E > A > C$

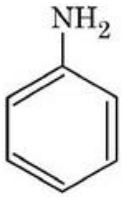
6952781508. $C > A > B > D > E$

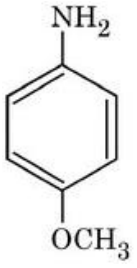
6952781509. $D > E > B > A > C$

Question Number : 67 Question Id : 695278442 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The strongest conjugate acid will result from:

Options :

6952781510. 

6952781511. 

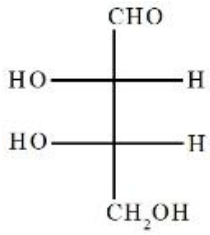
6952781512. 

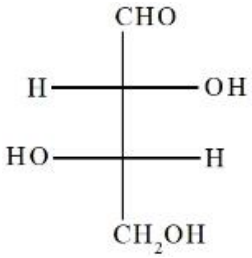
6952781513. 

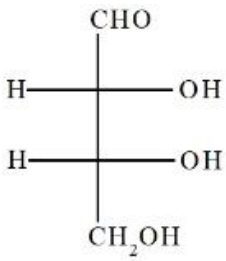
Question Number : 68 Question Id : 695278443 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

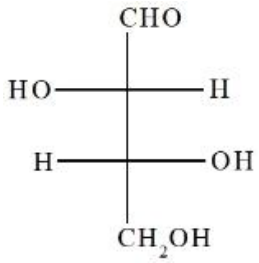
A D-aldotetrose on oxidation with concentrated HNO_3 resulted in optically inactive dicarboxylic acid. The structure of the D-aldotetrose is:

Options :

6952781514. 

6952781515. 

6952781516. 



6952781517.

Question Number : 69 Question Id : 695278444 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Among Fe^{3+}, Pb^{2+}, Cu^{2+} and Mn^{2+}, identify the one that gets precipitated out while passing H_2S in presence of NH_4OH as group reagent. The highest possible oxidation state of the corresponding metal is

Options :

6952781518. $+3$

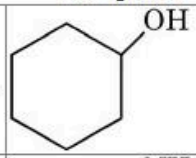
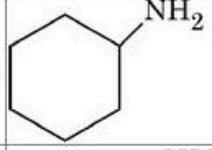
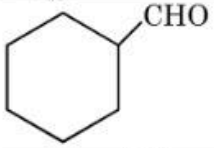
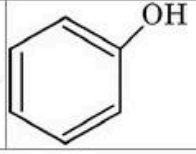
6952781519. $+4$

6952781520. $+2$

6952781521. $+7$

Question Number : 70 Question Id : 695278445 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Match the **LIST-I** with **LIST-II**

	List-I Compound		**List-II Test**
A.		I.	Hinsberg's reagent test
B.		II.	Phthalein dye test
C.		III.	Lucas test
D.		IV.	Tollen's test

Choose the ***correct*** answer from the options given below:

Options :

6952781522. A-III, B-I, C-IV, D-II

6952781523. A-III, B-IV, C-I, D-II

6952781524. A-I, B-III, C-II, D-IV

6952781525. A-I, B-II, C-III, D-IV

Chemistry Section B

Section Id :	69527836
Section Number :	6
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	5
Number of Questions to be attempted :	5
Section Marks :	20
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	69527836
Question Shuffling Allowed :	Yes
Is Section Default? :	No

Question Number : 71 Question Id : 695278446 Question Type : SA Display Question Number : Yes Keyboard Layout : Inscript

If 3.365g of ethanol (*l*) is burnt completely in a bomb calorimeter at 298.15 K, the heat produced is 99.472 kJ. The $|\Delta H_f^\circ|$ of ethanol at 298.15 K is

_____ $\times 10^2$ kJ mol^{-1}. (Nearest integer)

Given: Standard enthalpy for combustion of graphite = -393.5 kJ mol^{-1}

Standard enthalpy of formation of water (l) = -285.8 kJ mol^{-1}

Molar mass in g mol^{-1} of C, H, O are 12 , 1 and 16 respectively

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
1

Question Number : 72 Question Id : 695278447 Question Type : SA Display Question Number : Yes Keyboard Layout : Inscript

For the following reaction at 50 °C and at 2 atm pressure,

$2N_2O_5(g) \rightleftharpoons 2N_2O_4(g) + O_2(g)$

N_2O_5 is 50% dissociated.

The magnitude of standard free energy change at this temperature is *x*.

x = _____ J mol^{-1} [Nearest integer].

Given : R = 8.314 J mol^{-1} K^{-1}, log 2 = 0.30, log 3 = 0.48, ln10 = 2.303,
°C + 273 = K

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText

Possible Answers :

1

Question Number : 73 Question Id : 695278448 Question Type : SA Display Question Number : Yes Keyboard Layout : Inscript

An electrochemical cell, consist of the following two redox couples, M^{x+} (aq)/M(s) $[E^{\Theta}_{red} = +0.15\,V]$ and Fe^{3+}(aq)/Fe(s) $[E^{\Theta}_{red} = -0.036\,V]$. The cell EMF ($E_{cell}$) is recorded to be 0.2057 V. If the reaction quotient of the electrochemical reaction is found to be 10^{-2}, then the value of x is _____.(Nearest integer)

[Given : M is a p-block metal and $\frac{2.303RT}{F} = 0.059$ V]

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :

1

Question Number : 74 Question Id : 695278449 Question Type : SA Display Question Number : Yes Keyboard Layout : Inscript

For a first order reaction A → B

t/min	[A]/M
0	0.6500
x	0.0650
20	0.00065

x = _____ min. (Nearest integer)

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :

1

Question Number : 75 Question Id : 695278450 Question Type : SA Display Question Number : Yes Keyboard Layout : Inscript

In sulphur estimation, 2.0×10^{-3} mol of an organic compound (X) (molar mass 76 g mol^{-1}) gave 0.4813 g of barium sulphate (molar mass 233 g mol^{-1}). The percentage of sulphur in the compound (X) is _____ $\times 10^{-1}$ % (Nearest integer)

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :

1