National Testing Agency

Question Paper Name :	B Tech 31st Aug 2021 Shift 1
Subject Name :	B TECH
Creation Date :	2021-08-31 15:55:08
Duration :	180
Total Marks :	300
Display Marks:	Yes

B TECH

Group Number :	1
Group Id :	864351257
Group Maximum Duration :	0
Group Minimum Duration :	180
Show Attended Group? :	No
Edit Attended Group? :	No
Break time :	0
Group Marks :	300
Is this Group for Examiner? :	No

Physics Section A

Section Id :	864351980
Section Number :	1
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	20
Number of Questions to be attempted :	20
Section Marks :	80

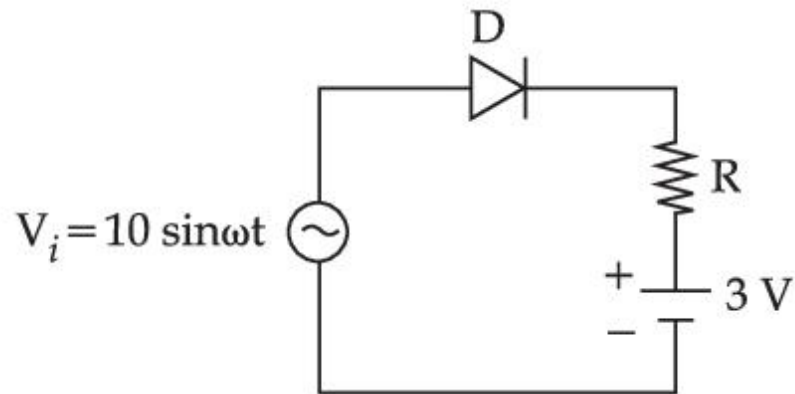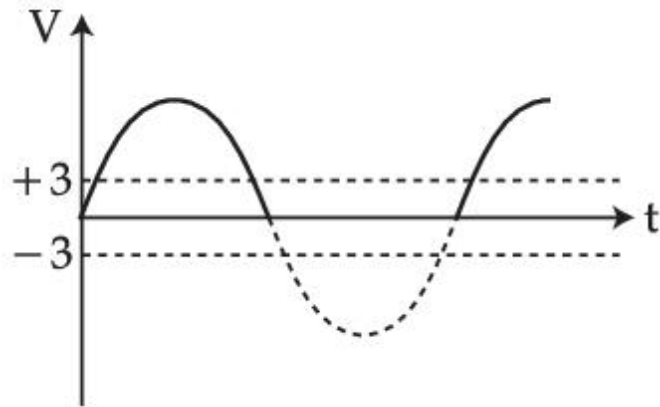**Question Number : 1 Question Id : 86435121160 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No**
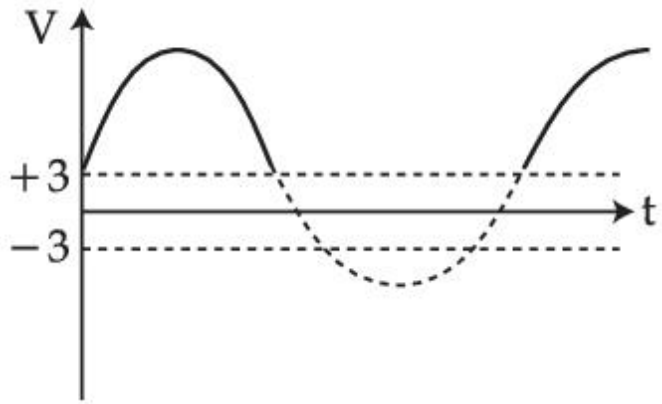**Correct Marks : 4 Wrong Marks : 1**

Choose the correct waveform that can represent the voltage across R of the following circuit, assuming the diode is ideal one :
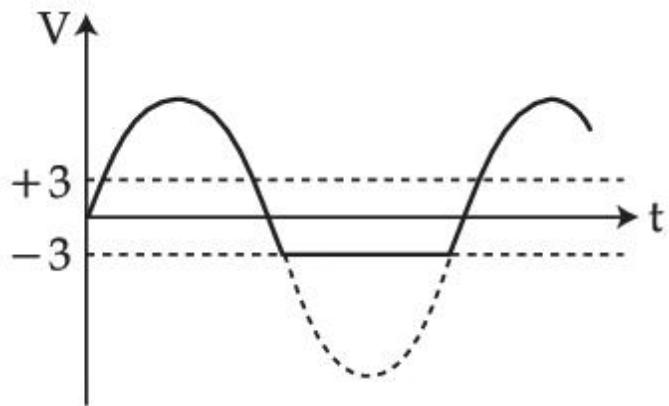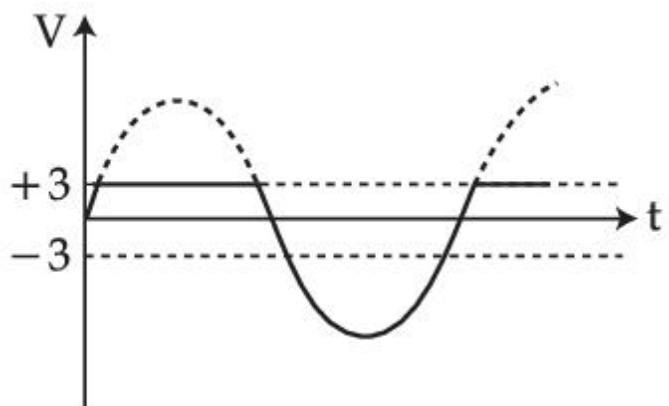

Options :
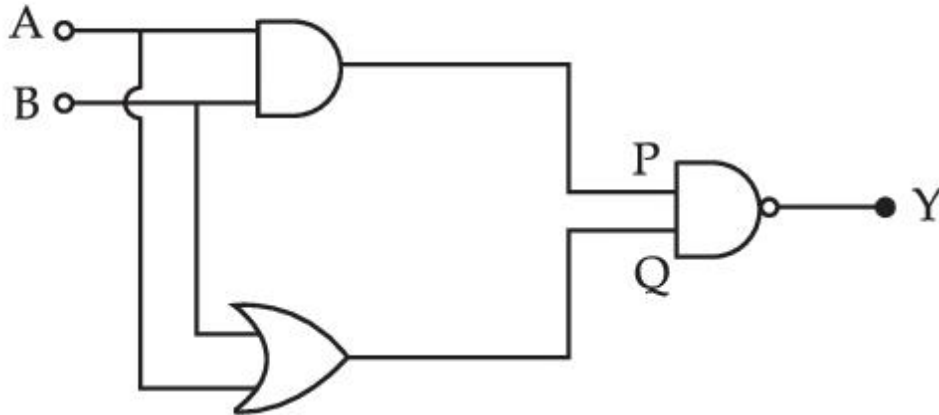

86435170061.

86435170062.

86435170063.

86435170064.

Question Number : 2 Question Id : 86435121161 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No
Correct Marks : 4 Wrong Marks : 1

In the following logic circuit the sequence of the inputs A, B are (0, 0), (0, 1), (1, 0) and (1, 1). The output Y for this sequence will be :

Options :

86435170065. 1, 1, 1, 0

86435170066. 1, 0, 1, 0

86435170067. 0, 1, 0, 1

86435170068. 0, 0, 1, 1

Question Number : 3 Question Id : 86435121162 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No
Correct Marks : 4 Wrong Marks : 1

A sample of a radioactive nucleus A disintegrates to another radioactive nucleus B, which in turn disintegrates to some other stable nucleus C. Plot of a graph showing the variation of number of atoms of nucleus B vesus time is :

(Assume that at t=0, there are no B atoms in the sample)

Options :

86435170069.

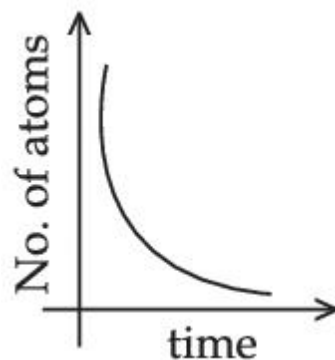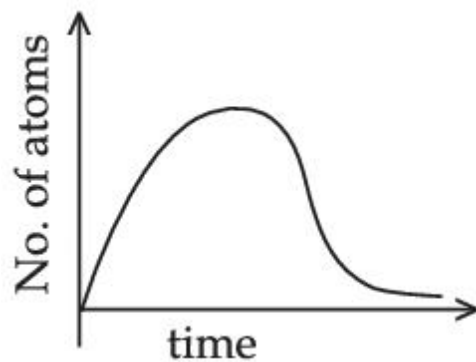86435170070.
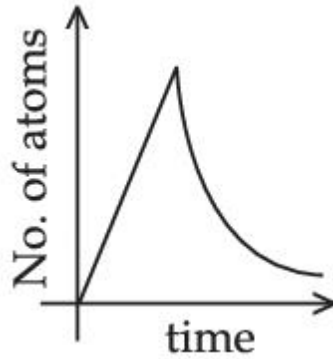
86435170071.
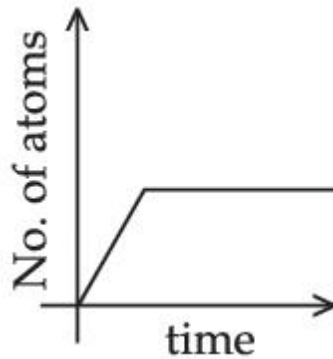
86435170072.

Question Number : 4 Question Id : 86435121163 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No
Correct Marks : 4 Wrong Marks : 1

A moving proton and electron have the same de-Broglie wavelength. If K and P denote the K.E. and momentum respectively. Then choose the correct option :

Options :

86435170073. $K_p = K_e$ and $P_p = P_e$

86435170074. $K_p > K_e$ and $P_p = P_e$

$K_p < K_e$ and $P_p = P_e$

$K_p < K_e$ and $P_p < P_e$

Question Number : 5 Question Id : 86435121164 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No
Correct Marks : 4 Wrong Marks : 1

Two plane mirrors M_1 and M_2 are at right angle to each other shown. A point source 'P' is placed at 'a' and '2a' meter away from M_1 and M_2 respectively. The shortest distance between the images thus formed is : (Take $\sqrt{5} = 2.3$)
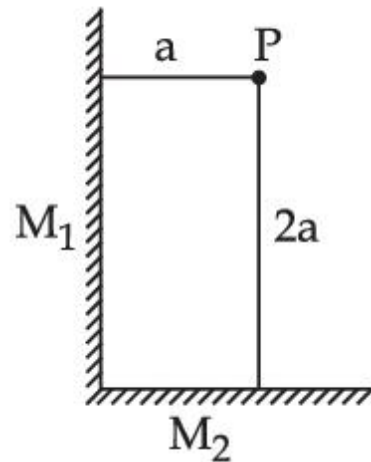
Options :

86435170077. $3a$

86435170078. $4.6a$

86435170079. $2\sqrt{10}$ a

86435170080. 2.3a

Question Number : 6 Question Id : 86435121165 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No
Correct Marks : 4 Wrong Marks : 1

An object is placed at the focus of concave lens having focal length f. What is the magnification and distance of the image from the optical centre of the lens ?

Options :

86435170081. Very high, ∞

86435170082. 1, ∞

86435170083. $\dfrac{1}{2}, \dfrac{f}{2}$

86435170084. $\dfrac{1}{4}, \dfrac{f}{4}$

Question Number : 7 Question Id : 86435121166 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No
Correct Marks : 4 Wrong Marks : 1

A small square loop of side 'a' and one turn is placed inside a larger square loop of side b and one turn (b >> a). The two loops are coplanar with their centres coinciding. If a current I is passed in the square loop of side 'b', then the coefficient of mutual inductance between the two loops is :

Options :

86435170085. $\dfrac{\mu_0}{4\pi} 8\sqrt{2} \dfrac{a^2}{b}$

86435170086. $\dfrac{\mu_0}{4\pi} 8\sqrt{2} \dfrac{b^2}{a}$

86435170087. $\dfrac{\mu_0}{4\pi} \dfrac{8\sqrt{2}}{a}$

86435170088. $\dfrac{\mu_0}{4\pi} \dfrac{8\sqrt{2}}{b}$

Question Number : 8 Question Id : 86435121167 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No
Correct Marks : 4 Wrong Marks : 1

In an ac circuit, an inductor, a capacitor and a resistor are connected in series with $X_L = R = X_C$. Impedance of this circuit is :

Options :

86435170089. Zero

86435170090. $R\sqrt{2}$

86435170091. R

86435170092. $2R^2$

Question Number : 9 Question Id : 86435121168 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No
Correct Marks : 4 Wrong Marks : 1

Consider a galvanometer shunted with 5 Ω resistance and 2% of current passes through it. What is the resistance of the given galvanometer ?

Options :

86435170093. 300 Ω

86435170094. 245 Ω

86435170095. 344 Ω

86435170096. 226 Ω

Question Number : 10 Question Id : 86435121169 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No
Correct Marks : 4 Wrong Marks : 1

A coil having N turns is wound tightly in the form of a spiral with inner and outer radii 'a' and 'b' respectively. Find the magnetic field at centre, when a current I passes through coil :

Options :

86435170097. $\dfrac{\mu_0\ IN}{2(b-a)}\ \log_e\left(\dfrac{b}{a}\right)$

86435170098. $\dfrac{\mu_0\ I}{8}\left(\dfrac{a-b}{a+b}\right)$

86435170099. $\dfrac{\mu_0\ I}{4\ (a-b)}\left[\dfrac{1}{a}-\dfrac{1}{b}\right]$

86435170100. $\dfrac{\mu_0\ I}{8}\left[\dfrac{a+b}{a-b}\right]$

Question Number : 11 Question Id : 86435121170 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

Match **List - I** with **List - II**.

	List - I		List - II
(a)	Torque	(i)	MLT^{-1}
(b)	Impulse	(ii)	MT^{-2}
(c)	Tension	(iii)	ML^2T^{-2}
(d)	Surface Tension	(iv)	MLT^{-2}

Choose the **most appropriate** answer from the option given below :

Options :

86435170101. (a)-(i), (b)-(iii), (c)-(iv), (d)-(ii)

86435170102. (a)-(iii), (b)-(iv), (c)-(i), (d)-(ii)

86435170103. (a)-(ii), (b)-(i), (c)-(iv), (d)-(iii)

86435170104. (a)-(iii), (b)-(i), (c)-(iv), (d)-(ii)

Question Number : 12 Question Id : 86435121171 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

Two particles A and B having charges 20 μC and −5 μC respectively are held fixed with a separation of 5 cm. At what position a third charged particle should be placed so that it does not experience a net electric force ?

20 μC   −5 μC

A   5 cm   B
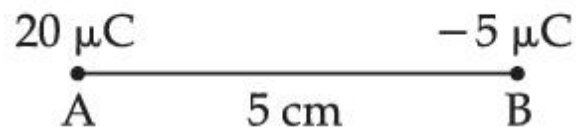
Options :

86435170105. At midpoint between two charges

86435170106. At 5 cm from −5 μC on the right side

86435170107. At 5 cm from 20 μC on the left side of system

86435170108. At 1.25 cm from a −5 μC between two charges

Question Number : 13 Question Id : 86435121172 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No
Correct Marks : 4 Wrong Marks : 1

Which of the following equations is dimensionally incorrect ?

Where t = time, h = height, s = surface tension, θ = angle, ρ = density, a, r = radius, g = acceleration due to gravity, v = volume, p = pressure, W = work done, Γ = torque, ε = permittivity, E = electric field, J = current density, L = length.

Options :

86435170109.
$$h = \frac{2s\,\cos\theta}{\rho r g}$$

86435170110.
$$v = \frac{\pi\,p a^4}{8\,\eta\,L}$$

86435170111.
$$W = \Gamma\theta$$

86435170112.
$$J = \epsilon\,\frac{\partial E}{\partial t}$$

Question Number : 14 Question Id : 86435121173 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No
Correct Marks : 4 Wrong Marks : 1

For an ideal gas the instantaneous change in pressure 'p' with volume 'v' is given by the equation $\dfrac{dp}{dv} = -ap$. If $p = p_0$ at $v = 0$ is the given boundary condition, then the maximum temperature one mole of gas can attain is :

(Here R is the gas constant)

Options :

86435170113. $0°C$

86435170114. $\dfrac{p_0}{a\,e\,R}$

86435170115. $\dfrac{a p_0}{e\,R}$

86435170116. infinity

Question Number : 15 Question Id : 86435121174 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No
Correct Marks : 4 Wrong Marks : 1

A reversible engine has an efficiency of $\dfrac{1}{4}$. If the temperature of the sink is reduced by 58°C, its efficiency becomes double. Calculate the temperature of the sink :

Options :

86435170117. $280°C$

86435170118.   382°C

86435170119.   180.4°C

86435170120.   174°C

Question Number : 16 Question Id : 86435121175 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No
Correct Marks : 4 Wrong Marks : 1

A uniform heavy rod of weight 10 kg ms^{-2}, cross-sectional area 100 cm^2 and length 20 cm is hanging from a fixed support. Young modulus of the material of the rod is 2×10^{11} Nm^{-2}. Neglecting the lateral contraction, find the elongation of rod due to its own weight :

Options :

86435170121. 2×10^{-9} m

86435170122. 5×10^{-10} m

86435170123. 5×10^{-8} m

86435170124. 4×10^{-8} m

Question Number : 17 Question Id : 86435121176 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No
Correct Marks : 4 Wrong Marks : 1

The masses and radii of the earth and moon are (M_1, R_1) and (M_2, R_2) respectively. Their centres are at a distance 'r' apart. Find the minimum escape velocity for a particle of mass 'm' to be projected from the middle of these two masses :

Options :

86435170125. $$V = \frac{\sqrt{2G} \ (M_1 + M_2)}{r}$$

86435170126. $$V = \frac{1}{2} \sqrt{\frac{2G \ (M_1 + M_2)}{r}}$$

86435170127. $$V = \sqrt{\frac{4G \ (M_1 + M_2)}{r}}$$

86435170128. $$V = \frac{1}{2} \sqrt{\frac{4G \ (M_1 + M_2)}{r}}$$

Question Number : 18 Question Id : 86435121177 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No
Correct Marks : 4 Wrong Marks : 1

Angular momentum of a single particle moving with constant speed along circular path :

Options :

86435170129. is zero

86435170130. remains same in magnitude but changes in the direction

86435170131. changes in magnitude but remains same in the direction

86435170132. remains same in magnitude and direction

Question Number : 19 Question Id : 86435121178 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No
Correct Marks : 4 Wrong Marks : 1

A helicopter is flying horizontally with a speed 'v' at an altitude 'h' has to drop a food packet for a man on the ground. What is the distance of helicopter from the man when the food packet is dropped ?

Options :

86435170133. $\sqrt{\dfrac{2gh}{v^2} + h^2}$

86435170134. $\sqrt{\dfrac{2v^2h}{g} + h^2}$

86435170135. $\sqrt{2ghv^2 + h^2}$

86435170136. $\sqrt{\dfrac{2ghv^2 + 1}{h^2}}$

Question Number : 20 Question Id : 86435121179 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No
Correct Marks : 4 Wrong Marks : 1

A body of mass M moving at speed V_0 collides elastically with a mass 'm' at rest. After the collision, the two masses move at angles θ_1 and θ_2 with respect to the initial direction of motion of the body of mass M. The largest possible value of the ratio M/m, for which the angles θ_1 and θ_2 will be equal, is :

Options :

86435170137. 2

86435170138. 3

86435170139. 1

86435170140. 4

Physics Section B
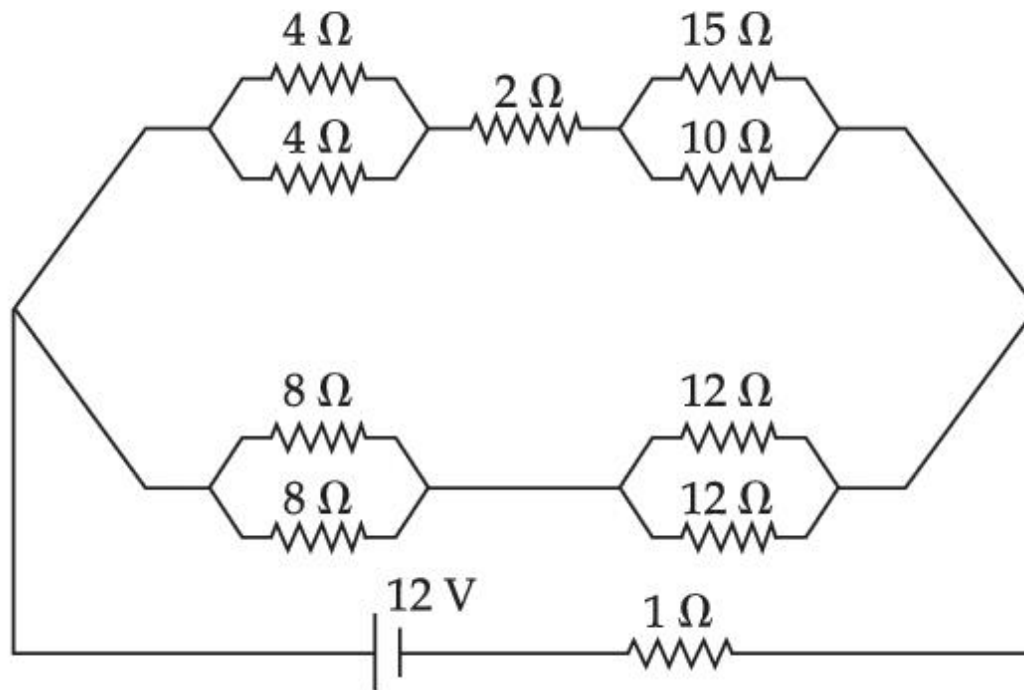
Question Number : 21 Question Id : 86435121180 Question Type : SA

Correct Marks : 4 Wrong Marks : 0

The voltage drop across 15 Ω resistance in the given figure will be _____ V.

4 Ω
4 Ω
2 Ω
15 Ω
10 Ω
8 Ω
8 Ω
12 Ω
12 Ω
12 V
1 Ω

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

Question Number : 22 Question Id : 86435121181 Question Type : SA

Correct Marks : 4 Wrong Marks : 0

A particle of mass 1 kg is hanging from a spring of force constant 100 Nm^{-1}. The mass is pulled slightly downward and released so that it executes free simple harmonic motion with time period T. The time when the kinetic energy and potential energy of the system will become equal, is $\dfrac{T}{x}$. The value of x is _____.

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 : 86435121182 Question Type : SA

Correct Marks : 4 Wrong Marks : 0

A car is moving on a plane inclined at 30° to the horizontal with an acceleration of 10 ms^{-2} parallel to the plane upward. A bob is suspended by a string from the roof of the car. The angle in degrees which the string makes with the vertical is _____.

(Take $g = 10$ ms^{-2})

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

Question Number : 24 Question Id : 86435121183 Question Type : SA

Correct Marks : 4 Wrong Marks : 0

A block moving horizontally on a smooth surface with a speed of 40 ms^{-1} splits into two equal parts. If one of the parts moves at 60 ms^{-1} in the same direction, then the fractional change in the kinetic energy will be $x : 4$ where $x =$ _____.

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 : 86435121184 Question Type : SA

Correct Marks : 4 Wrong Marks : 0

When a rubber ball is taken to a depth of _____ m in deep sea, its volume decreases by 0.5%.

(The bulk modulus of rubber $= 9.8 \times 10^8$ Nm^{-2}

Density of sea water $= 10^3$ kgm^{-3}

$g = 9.8$ 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 : 26 Question Id : 86435121185 Question Type : SA

Correct Marks : 4 Wrong Marks : 0

A wire having a linear mass density 9.0×10^{-4} kg/m is stretched between two rigid supports with a tension of 900 N. The wire resonates at a frequency of 500 Hz. The next higher frequency at which the same wire resonates is 550 Hz. The length of the wire is _____m.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal
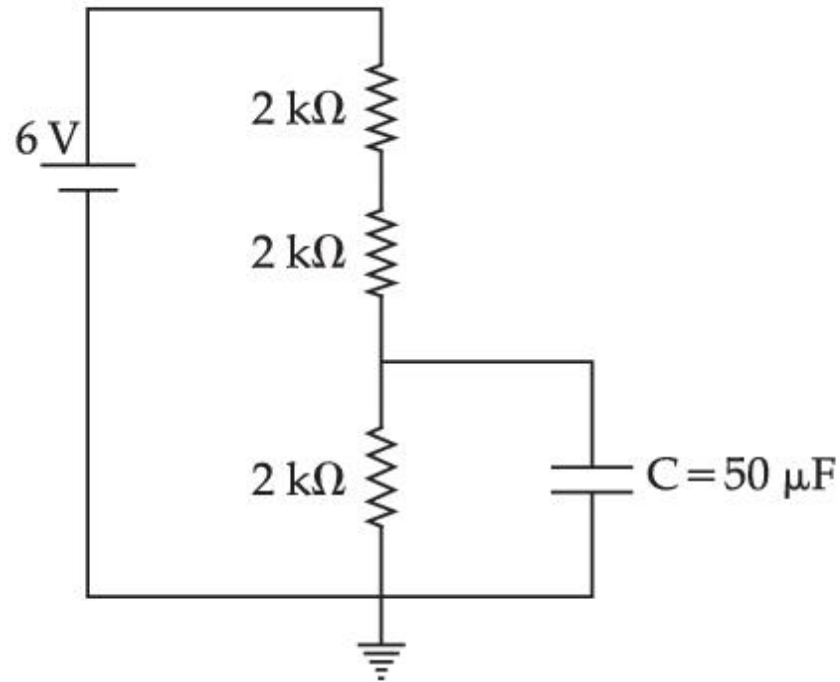
Text Areas : PlainText

Possible Answers :

1

Question Number : 27 Question Id : 86435121186 Question Type : SA

Correct Marks : 4 Wrong Marks : 0

A capacitor of 50 μF is connected in a circuit as shown in figure. The charge on the upper plate of the capacitor is _____ μC.

6 V

2 kΩ

2 kΩ

2 kΩ

C = 50 μF

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

Question Number : 28 Question Id : 86435121187 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

A square shaped wire with resistance of each side 3 Ω is bent to form a complete circle. The resistance between two diametrically opposite points of the circle in unit of Ω will be _____.

Question Number : 29 Question Id : 86435121188 Question Type : SA

Correct Marks : 4 Wrong Marks : 0

The electric field in an electromagnetic wave is given by

$E = (50 \ NC^{-1}) \ \sin\omega(t - x/c)$

The energy contained in a cylinder of volume V is 5.5×10^{-12} J. The value of V is
_____ cm^3.

(given $\epsilon_0 = 8.8 \times 10^{-12} \ C^2N^{-1}m^{-2}$)

Question Number : 30 Question Id : 86435121189 Question Type : SA

Correct Marks : 4 Wrong Marks : 0

If the sum of the heights of transmitting and receiving antennas in the line of sight of communication is fixed at 160 m, then the maximum range of LOS communication is _____ km.

(Take radius of Earth = 6400 km)

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 :	864351982
Section Number :	3
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	20
Number of Questions to be attempted :	20
Section Marks :	80
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Sub-Section Number :	1
Sub-Section Id :	8643511209
Question Shuffling Allowed :	Yes

Question Number : 31 Question Id : 86435121190 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No
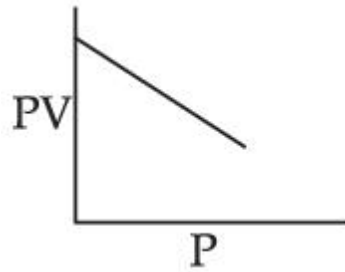**Correct Marks : 4 Wrong Marks : 1**

Which one of the following is the correct PV vs P plot at constant temperature for an ideal gas ? (P and V stand for pressure and volume of the gas respectively)
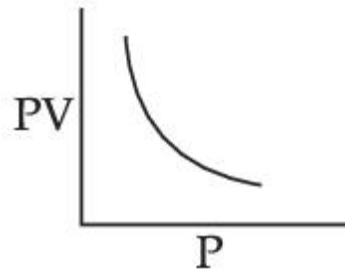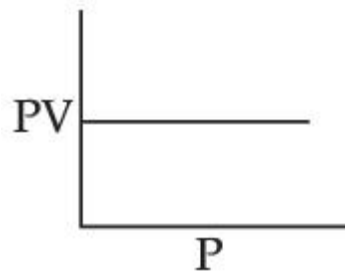
Options :
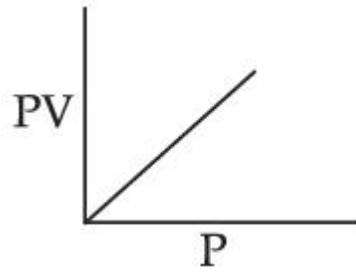
86435170151.

86435170152.

86435170153.

86435170154.

Question Number : 32 Question Id : 86435121191 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

In the structure of the dichromate ion, there is a :

Options :

86435170155. linear symmetrical $Cr-O-Cr$ bond.

86435170156. linear unsymmetrical $Cr-O-Cr$ bond.

86435170157. non-linear symmetrical $Cr-O-Cr$ bond.

86435170158. non-linear unsymmetrical $Cr-O-Cr$ bond.

Question Number : 33 Question Id : 86435121192 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No
Correct Marks : 4 Wrong Marks : 1

Which one of the following 0.10 M aqueous solutions will exhibit the largest freezing point depression ?

Options :

86435170159. glycine

86435170160. glucose

86435170161. $KHSO_4$

86435170162. hydrazine

Select the graph that correctly describes the adsorption isotherms at two temperatures T_1 and T_2 ($T_1 > T_2$) for a gas :

($x -$ mass of the gas adsorbed

m$-$mass of adsorbent

P$-$pressure)

Options :

86435170163.

86435170164.
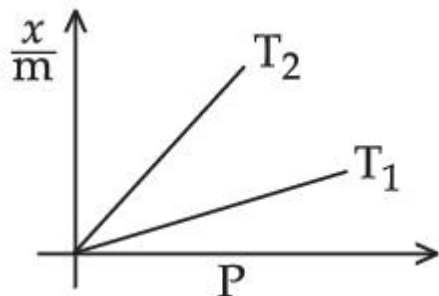
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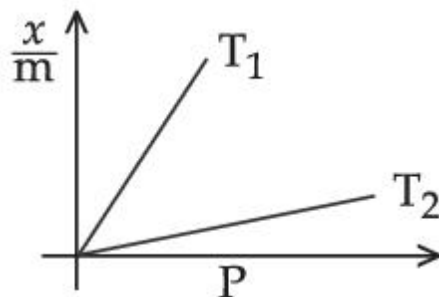
86435170166.

Question Number : 35 Question Id : 86435121194 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No
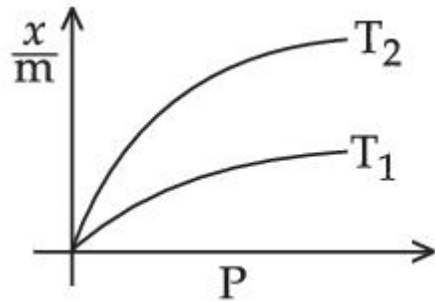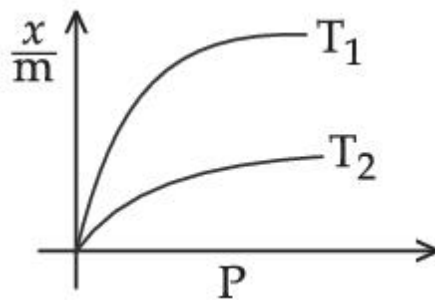**Correct Marks : 4 Wrong Marks : 1**

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

Assertion (A) : Metallic character decreases and non-metallic character increases on moving from left to right in a period.

Reason (R) : It is due to increase in ionisation enthalpy and decrease in electron gain enthalpy, when one moves from left to right in a period.

In the light of the above statements, choose the **most appropriate** answer from the options given below :

Options :

86435170167.   Both **(A)** and **(R)** are correct and **(R)** is the correct explanation of **(A)**.

86435170168.   Both **(A)** and **(R)** are correct but **(R)** is not the correct explanation of **(A)**.

86435170169.   **(A)** is true but **(R)** is false.

86435170170.   **(A)** is false but **(R)** is true.

Question Number : 36 Question Id : 86435121195 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No
Correct Marks : 4 Wrong Marks : 1

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

Assertion (A) :   Aluminium is extracted from bauxite by the electrolysis of molten mixture of Al_2O_3 with cryolite.

Reason (R) :   The oxidation state of Al in cryolite is $+3$.

In the light of the above statements, choose the **most appropriate** answer from the options given below :

Options :

86435170171.   Both **(A)** and **(R)** are correct and **(R)** is the correct explanation of **(A)**.

86435170172.   Both **(A)** and **(R)** are correct but **(R)** is not the correct explanation of **(A)**.

86435170173.   **(A)** is true but **(R)** is false.

86435170174. **(A)** is false but **(R)** is true.

Question Number : 37 Question Id : 86435121196 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No
Correct Marks : 4 Wrong Marks : 1

Given below are two statements :

Statement I : The process of producing syn-gas is called gasification of coal.

Statement II : The composition of syn-gas is $CO + CO_2 + H_2$ (1 : 1 : 1).

In the light of the above statements, choose the **most appropriate** answer from the options given below :

Options :

86435170175. Both **Statement I** and **Statement II** are true.

86435170176. Both **Statement I** and **Statement II** are false.

86435170177. **Statement I** is true but **Statement II** is false.

86435170178. **Statement I** is false but **Statement II** is true.

Question Number : 38 Question Id : 86435121197 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No
Correct Marks : 4 Wrong Marks : 1

The major component/ingredient of Portland Cement is :

Options :

86435170179. tricalcium aluminate

86435170180. dicalcium aluminate

86435170181. tricalcium silicate

86435170182. dicalcium silicate

Question Number : 39 Question Id : 86435121198 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No
Correct Marks : 4 Wrong Marks : 1

Which one of the following lanthanides exhibits +2 oxidation state with diamagnetic nature ? (Given Z for Nd=60, Yb=70, La=57, Ce=58)

Options :

86435170183. Nd

86435170184. Yb

86435170185. La

86435170186. Ce

Question Number : 40 Question Id : 86435121199 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No
Correct Marks : 4 Wrong Marks : 1

The denticity of an organic ligand, biuret is :

Options :

86435170187. 2

86435170188. 4

86435170189. 6

86435170190. 3

Question Number : 41 Question Id : 86435121200 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No
Correct Marks : 4 Wrong Marks : 1

BOD values (in ppm) for clean water (A) and polluted water (B) are expected respectively as :

Options :

86435170191. A > 15, B > 47

86435170192. A < 5 , B > 17

86435170193. A > 50, B < 27

86435170194. A > 25, B < 17

Question Number : 42 Question Id : 86435121201 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No
Correct Marks : 4 Wrong Marks : 1

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

Assertion (A) :   A simple distillation can be used to separate a mixture of propanol and propanone.

Reason (R) :   Two liquids with a difference of more than 20°C in their boiling points can be separated by simple distillations.

In the light of the above statements, choose the **most appropriate** answer from the options given below :

Options :

86435170195.   Both **(A)** and **(R)** are correct and **(R)** is the correct explanation of **(A)**.

86435170196.   Both **(A)** and **(R)** are correct but **(R)** is not the correct explanation of **(A)**.

86435170197.   **(A)** is true but **(R)** is false.

86435170198.   **(A)** is false but **(R)** is true.

Question Number : 43 Question Id : 86435121202 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No
Correct Marks : 4 Wrong Marks : 1

Choose the **correct** name for compound given below :

Br
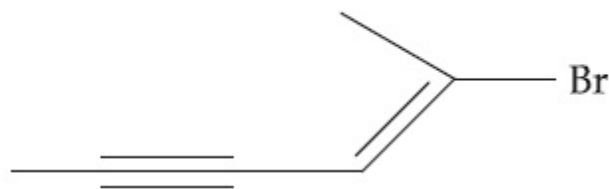
Options :

86435170199. (4E)-5-Bromo-hex-4-en-2-yne

86435170200. (2E)-2-Bromo-hex-2-en-4-yne

86435170201. (2E)-2-Bromo-hex-4-yn-2-ene

86435170202. (4E)-5-Bromo-hex-2-en-4-yne

Question Number : 44 Question Id : 86435121203 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

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

Assertion (A) : Treatment of bromine water with propene yields 1-bromopropan-2-ol.

Reason (R) : Attack of water on bromonium ion follows Markovnikov rule and results in 1-bromopropan-2-ol.

In the light of the above statements, choose the **most appropriate** answer from the options given below :

Options :

86435170203. Both **(A)** and **(R)** are true and **(R)** is the correct explanation of **(A)**.

86435170204. Both **(A)** and **(R)** are true but **(R)** is NOT the correct explanation of **(A)**.
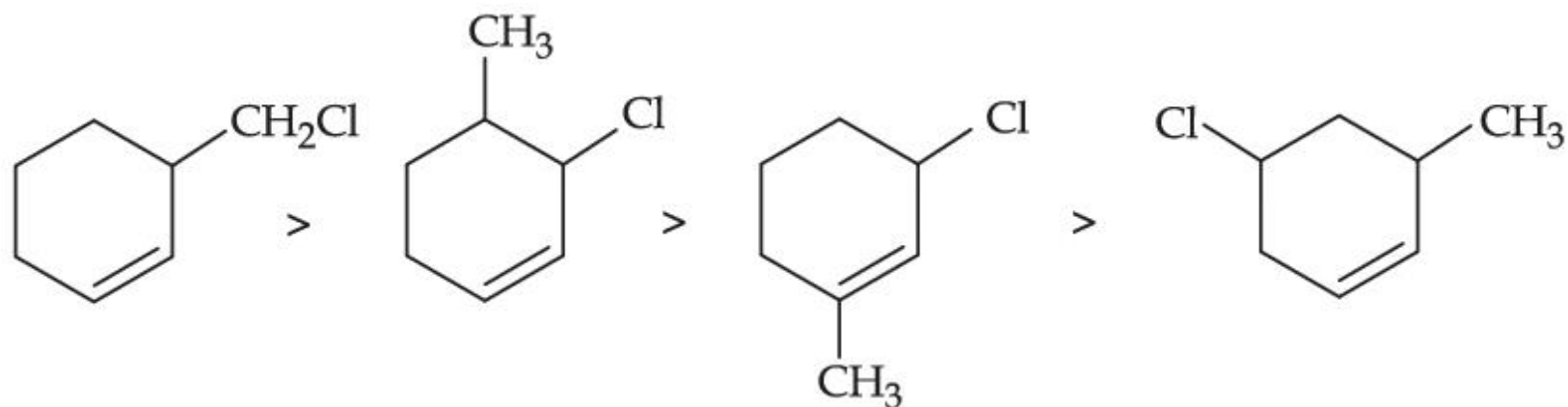
86435170205. **(A)** is true but **(R)** is false.

(A) is false but (R) is true.

86435170206.

Question Number : 45 Question Id : 86435121204 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

The **correct** order of reactivity of the given chlorides with acetate in acetic acid is :

Options :

86435170207.
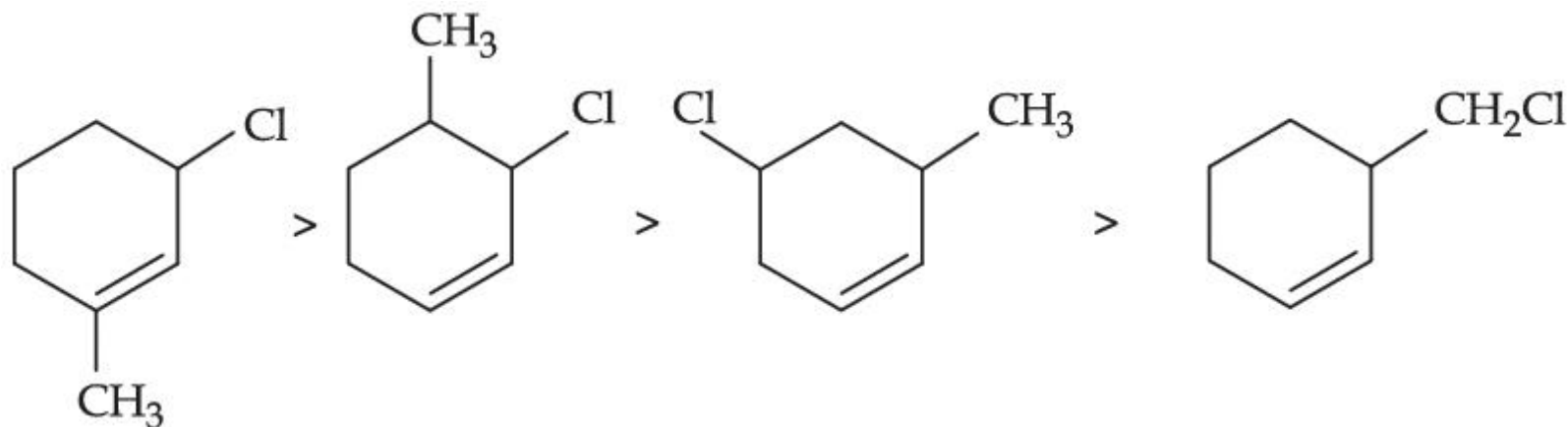
86435170208.

86435170209.

86435170210.

Question Number : 46 Question Id : 86435121205 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No
Correct Marks : 4 Wrong Marks : 1

The major product formed in the following reaction is :

$$CH_3 \overset{\overset{\displaystyle CH_3}{|}}{\underset{\underset{\displaystyle CH_3}{|}}{C}} \overset{}{\underset{\underset{\displaystyle OH}{|}}{CH}} CH_3 \xrightarrow[\text{a few drops}]{\text{conc. } H_2SO_4} \text{Major Product}$$

Options :

86435170211.

$$CH_3 \overset{\overset{\displaystyle CH_3}{|}}{\underset{\underset{\displaystyle CH_3}{|}}{C}} CH = CH_2$$

86435170212.

$$\overset{CH_3}{\underset{CH_3}{>}} C = CH - CH_3$$

86435170213.

$$\overset{CH_3 \quad CH_3}{\underset{H_3C \qquad\qquad CH_3}{|\!\!=\!\!|}}$$
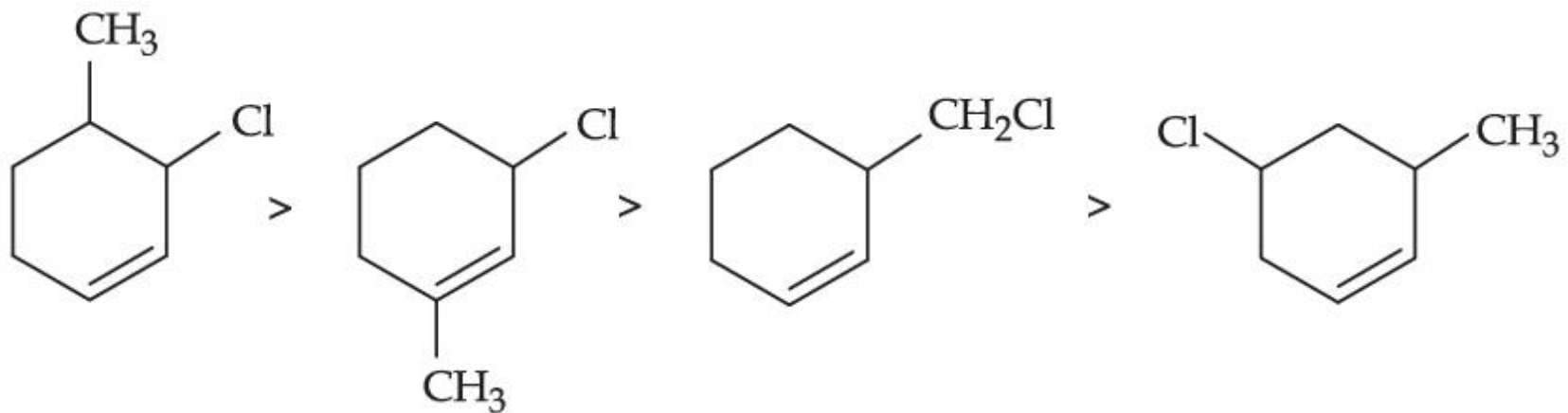
CH$_3$—C=CH—CH$_2$CH$_3$
        |
       CH$_3$

86435170214.

Question Number : 47 Question Id : 86435121206 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No
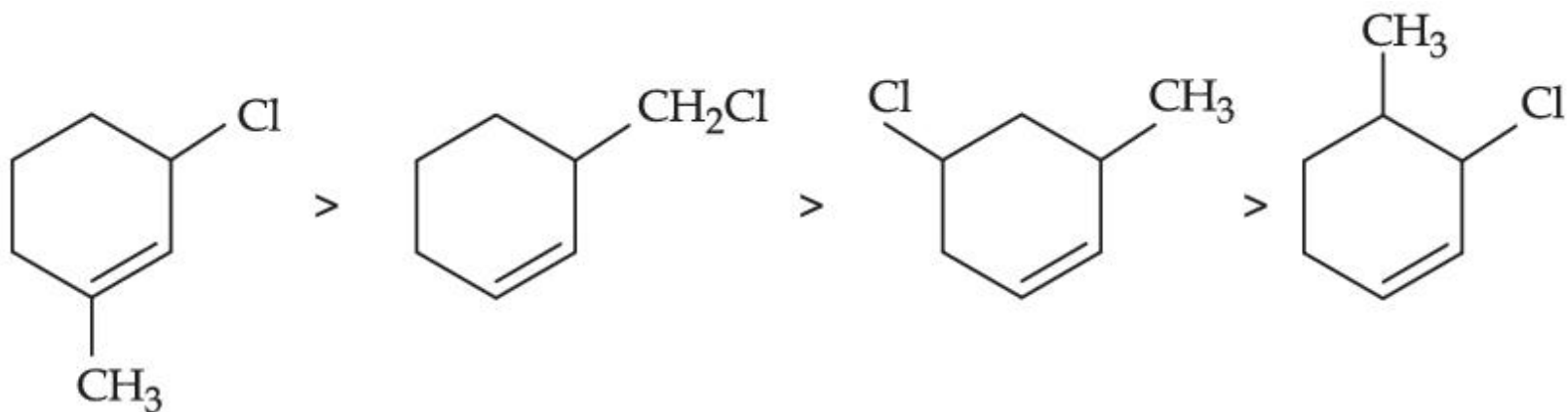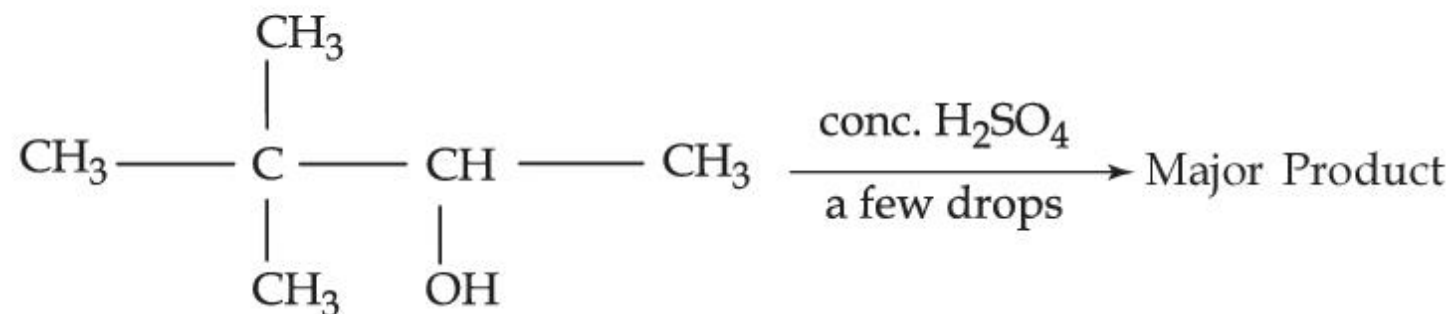**Correct Marks : 4 Wrong Marks : 1**

The structure of product C, formed by the following sequence of reactions is :

$$CH_3COOH + SOCl_2 \longrightarrow A \xrightarrow[AlCl_3]{Benzene} B \xrightarrow[^-OH]{KCN} C$$

Options :
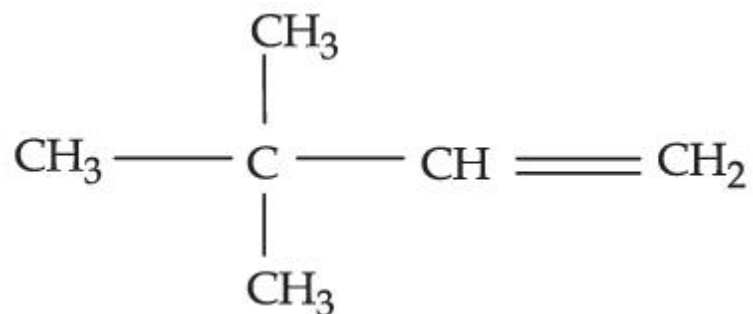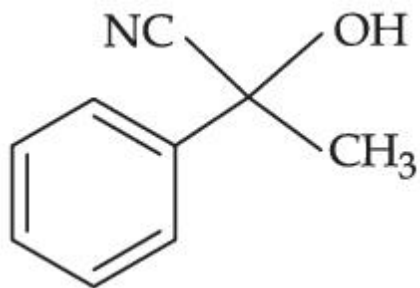

86435170215.

86435170216.
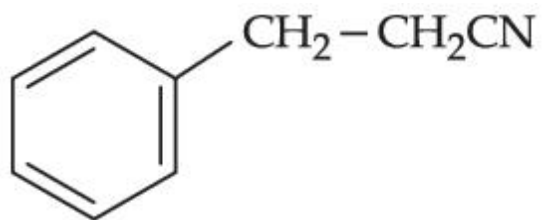
86435170217.
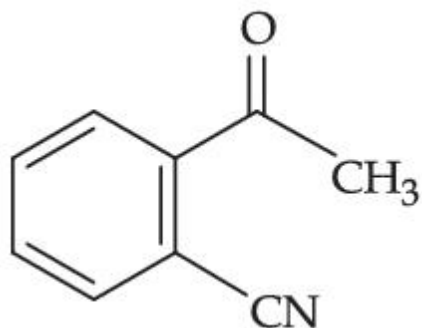
86435170218.

Question Number : 48 Question Id : 86435121207 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1
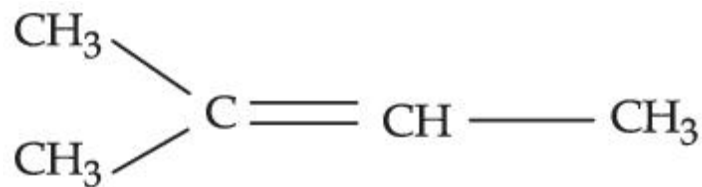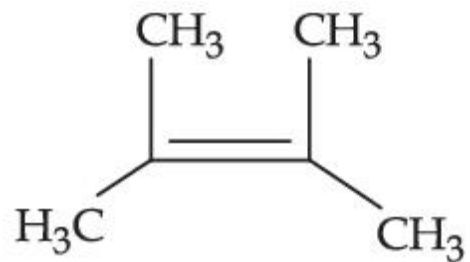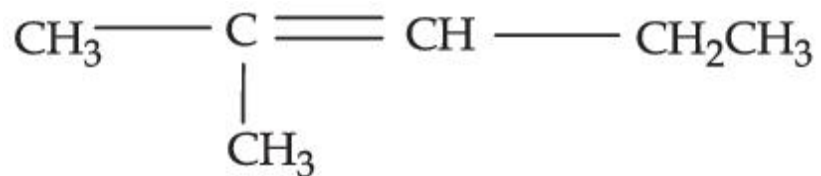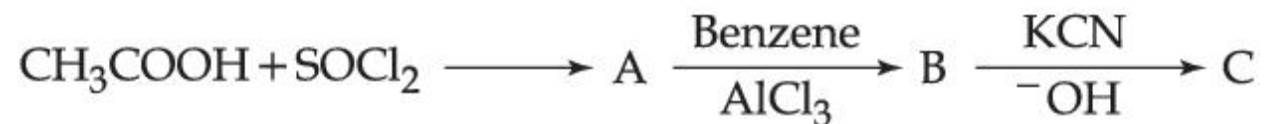
The major products A and B in the following set of reactions are :

Options :

86435170219.

OH

A = [structure with OH and NH₂]   ,   B = [structure with OH and CHO]

86435170220.

OH

A = [structure with OH and OH]   ,   B = [structure with OH and CHO]

86435170221.

OH

A = [structure with OH and NH₂]   ,   B = [structure with =C and COOH]
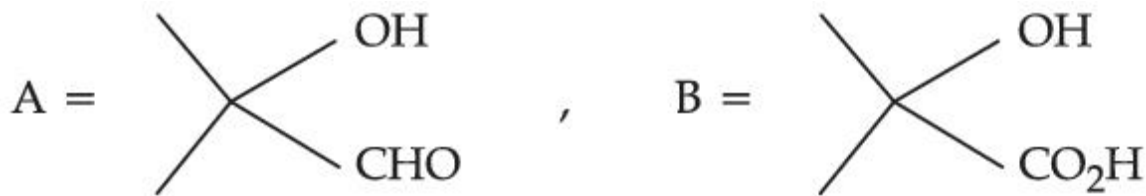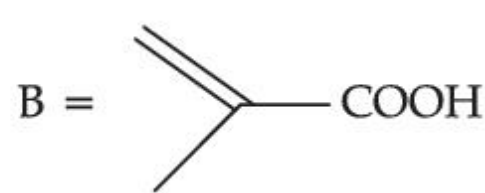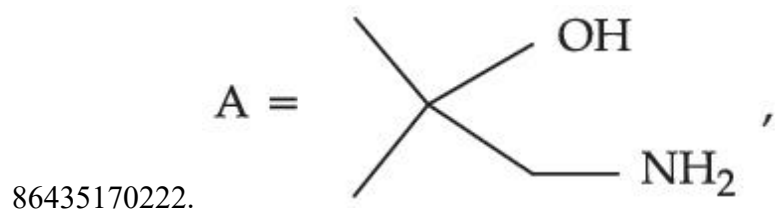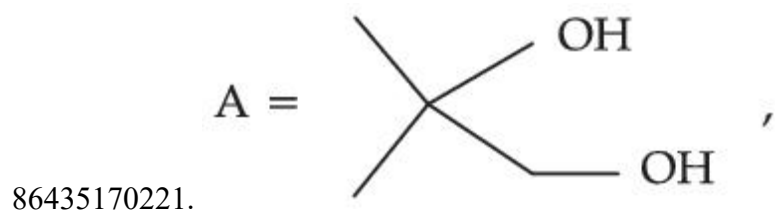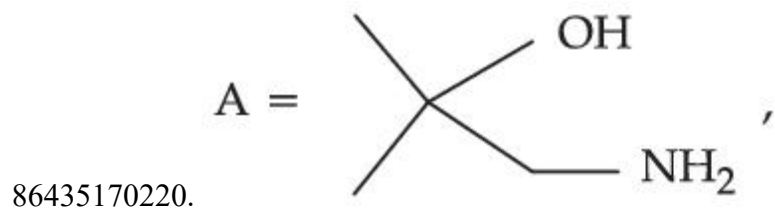
86435170222.

Question Number : 49 Question Id : 86435121208 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

Monomer of Novolac is :

Options :

86435170223. *o*-Hydroxymethylphenol.

86435170224. phenol and melamine.

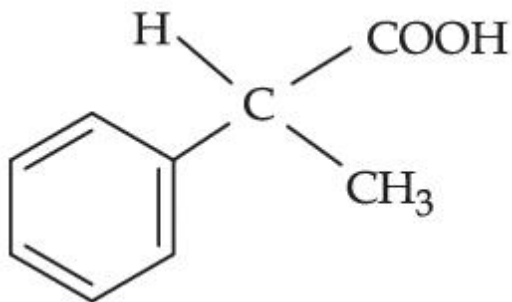86435170225. 1,3-Butadiene and styrene.

86435170226. 3-Hydroxybutanoic acid.

Question Number : 50 Question Id : 86435121209 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

Which one of the following compounds contains β-C_1-C_4 glycosidic linkage ?
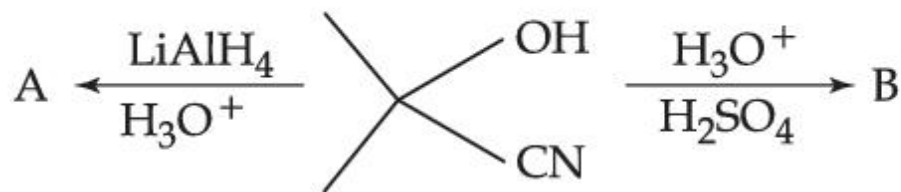
Options :

86435170227. Lactose

86435170228. Amylose

86435170229. Sucrose

86435170230. Maltose

Chemistry Section B

Section Id :	864351983
Section Number :	4
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	10
Number of Questions to be attempted :	5
Section Marks :	20
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Sub-Section Number :	1
Sub-Section Id :	8643511210
Question Shuffling Allowed :	Yes

Question Number : 51 Question Id : 86435121210 Question Type : SA

Correct Marks : 4 Wrong Marks : 0

The molarity of the solution prepared by dissolving 6.3 g of oxalic acid ($H_2C_2O_4 \cdot 2H_2O$) in 250 mL of water in mol L^{-1} is $x \times 10^{-2}$. The value of x is _____.
(Nearest integer)
[Atomic mass : H : 1.0, C : 12.0, O : 16.0]

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

Question Number : 52 Question Id : 86435121211 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

Ge (Z=32) in its ground state electronic configuration has x completely filled orbitals with $m_l = 0$. The value of x is _____ .

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

Question Number : 53 Question Id : 86435121212 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

According to the following figure, the magnitude of the enthalpy change of the reaction

$A + B \rightarrow M + N$ in kJ mol^{-1}

is equal to _____. (Integer answer)

$x = 20$ kJ mol^{-1}
$y = 45$ kJ mol^{-1}
$z = 15$ kJ mol^{-1}

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

Question Number : 54 Question Id : 86435121213 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

A_3B_2 is a sparingly soluble salt of molar mass M (g mol^{-1}) and solubility x g L^{-1}. The solubility

product satisfies $K_{sp} = a \left(\dfrac{x}{M} \right)^5$. The value of a is _____ . (Integer answer)

Response Type : Numeric

Question Number : 55 Question Id : 86435121214 Question Type : SA

Correct Marks : 4 Wrong Marks : 0

Consider the following cell reaction

$$Cd_{(s)} + Hg_2SO_{4(s)} + \frac{9}{5}H_2O_{(l)} \rightleftharpoons CdSO_4 \cdot \frac{9}{5}H_2O_{(s)} + 2Hg_{(l)}.$$

The value of E^0_{cell} is 4.315 V at 25°C. If $\Delta H° = -825.2$ kJ mol^{-1}, the standard entropy change $\Delta S°$ in J K^{-1} is _____. (Nearest integer)

[Given : Faraday constant = 96487 C mol^{-1}]

Question Number : 56 Question Id : 86435121215 Question Type : SA

Correct Marks : 4 Wrong Marks : 0

For a first order reaction, the ratio of the time for 75% completion of a reaction to the time for 50% completion is _____. (Integer answer)

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

1

Question Number : 57 Question Id : 86435121216 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

The number of halogen/(s) forming halic (V) acid is _____.

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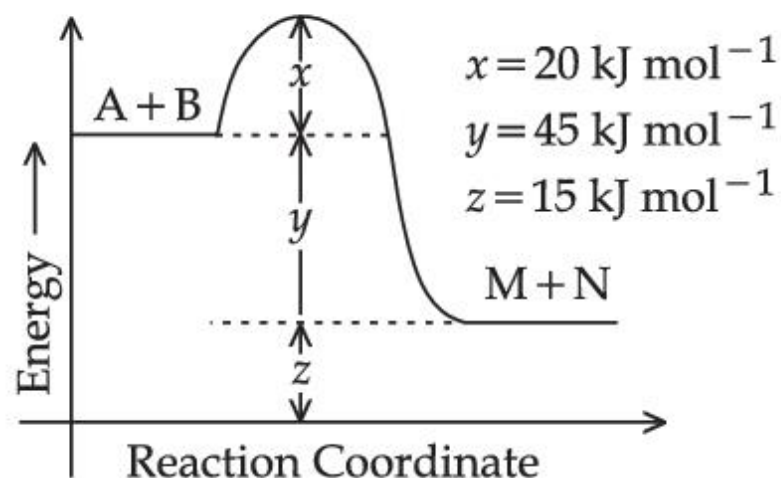**Answers Type :** Equal
Text Areas : PlainText
Possible Answers :

1

Question Number : 58 Question Id : 86435121217 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

The number of hydrogen bonded water molecule(s) associated with stoichiometry $CuSO_4 \cdot 5H_2O$ is _____.

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

1

Question Number : 59 Question Id : 86435121218 Question Type : SA

Correct Marks : 4 Wrong Marks : 0

The total number of reagents from those given below, that can convert nitrobenzene into aniline is _____. (Integer answer)

I. $Sn - HCl$

II. $Sn - NH_4OH$

III. $Fe - HCl$

IV. $Zn - HCl$

V. $H_2 - Pd$

VI. $H_2 - Raney\ Nickel$

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes
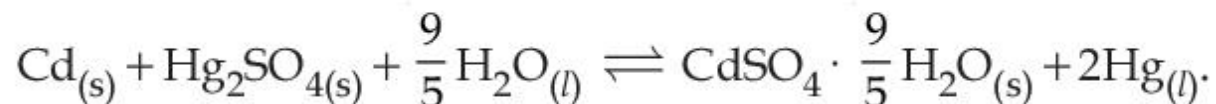
Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

Question Number : 60 Question Id : 86435121219 Question Type : SA

Correct Marks : 4 Wrong Marks : 0

Consider the sulphides HgS, PbS, CuS, Sb_2S_3, As_2S_3 and CdS. Number of these sulphides soluble in 50% HNO_3 is _____.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

Mathematics Section A

Section Id :	864351984
Section Number :	5
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	20
Number of Questions to be attempted :	20
Section Marks :	80
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Sub-Section Number :	1
Sub-Section Id :	8643511211
Question Shuffling Allowed :	Yes

Question Number : 61 Question Id : 86435121220 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

Which of the following is **not** correct for relation R on the set of real numbers ?

Options :

86435170241. $(x, y) \in R \Leftrightarrow |x - y| \leq 1$ is reflexive and symmetric.

86435170242. $(x, y) \in R \Leftrightarrow |x| - |y| \leq 1$ is reflexive but not symmetric.

86435170243. $(x, y) \in R \Leftrightarrow 0 < |x| - |y| \leq 1$ is neither transitive nor symmetric.

86435170244. $(x, y) \in R \Leftrightarrow 0 < |x - y| \leq 1$ is symmetric and transitive.

Question Number : 62 Question Id : 86435121221 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No
Correct Marks : 4 Wrong Marks : 1

The number of real roots of the equation $e^{4x} + 2e^{3x} - e^x - 6 = 0$ is :

Options :

86435170245. 0

86435170246. 1

86435170247. 2

86435170248. 4

Question Number : 63 Question Id : 86435121222 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No
Correct Marks : 4 Wrong Marks : 1

If $a_r = \cos\dfrac{2r\pi}{9} + i \sin\dfrac{2r\pi}{9}$, $r = 1, 2, 3, \ldots$, $i = \sqrt{-1}$, then the determinant

$$\begin{vmatrix} a_1 & a_2 & a_3 \\ a_4 & a_5 & a_6 \\ a_7 & a_8 & a_9 \end{vmatrix} \text{ is equal to :}$$

Options :

86435170249. a_9

86435170250. $a_1 a_9 - a_3 a_7$

86435170251. $a_2a_6 - a_4a_8$

86435170252. a_5

Question Number : 64 Question Id : 86435121223 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

If the following system of linear equations

$2x + y + z = 5$

$x - y + z = 3$

$x + y + az = b$

has no solution, then :

Options :

86435170253. $a = \dfrac{1}{3}, b \neq \dfrac{7}{3}$

86435170254. $a \neq \dfrac{1}{3}, b = \dfrac{7}{3}$

86435170255. $a = -\dfrac{1}{3}, b \neq \dfrac{7}{3}$

$$a \neq -\frac{1}{3}, \quad b = \frac{7}{3}$$

86435170256.

Question Number : 65 Question Id : 86435121224 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No
Correct Marks : 4 Wrong Marks : 1

Three numbers are in an increasing geometric progression with common ratio r. If the middle number is doubled, then the new numbers are in an arithmetic progression with common difference d. If the fourth term of GP is $3\,r^2$, then $r^2 - d$ is equal to :

Options :

86435170257. $7 - 7\sqrt{3}$

86435170258. $7 + \sqrt{3}$

86435170259. $7 - \sqrt{3}$

86435170260. $7 + 3\sqrt{3}$

Question Number : 66 Question Id : 86435121225 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No
Correct Marks : 4 Wrong Marks : 1

The sum of 10 terms of the series

$$\frac{3}{1^2 \times 2^2} + \frac{5}{2^2 \times 3^2} + \frac{7}{3^2 \times 4^2} + \dots \text{ is :}$$

Options :

86435170261. 1

86435170262. $\dfrac{99}{100}$

86435170263. $\dfrac{120}{121}$

86435170264. $\dfrac{143}{144}$

Question Number : 67 Question Id : 86435121226 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

$\displaystyle \lim_{x \to 0} \frac{\sin^2(\pi \cos^4 x)}{x^4}$ is equal to :

Options :

86435170265. $2\pi^2$

86435170266. π^2

86435170267. $4\pi^2$

86435170268. 4π

Question Number : 68 Question Id : 86435121227 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No
Correct Marks : 4 Wrong Marks : 1

If the function $f(x) = \begin{cases} \dfrac{1}{x} \log_e \left(\dfrac{1 + \frac{x}{a}}{1 - \frac{x}{b}} \right) & , \quad x < 0 \\ k & , \quad x = 0 \\ \dfrac{\cos^2 x - \sin^2 x - 1}{\sqrt{x^2 + 1} - 1} & , \quad x > 0 \end{cases}$

is continuous at $x = 0$, then $\dfrac{1}{a} + \dfrac{1}{b} + \dfrac{4}{k}$ is equal to :

Options :

86435170269. -5

86435170270. 5

86435170271. -4

86435170272. 4

Question Number : 69 Question Id : 86435121228 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No
Correct Marks : 4 Wrong Marks : 1

The function $f(x) = |x^2 - 2x - 3| \cdot e^{|9x^2 - 12x + 4|}$ is not differentiable at exactly :

86435170273. one point

86435170274. two points

86435170275. three points

86435170276. four points

Question Number : 70 Question Id : 86435121229 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

The integral $\displaystyle\int \frac{1}{\sqrt[4]{(x-1)^3(x+2)^5}}\, dx$ is equal to :

(where C is a constant of intergration)

Options :

86435170277. $\dfrac{4}{3}\left(\dfrac{x-1}{x+2}\right)^{\frac{1}{4}} + C$

86435170278. $\dfrac{3}{4}\left(\dfrac{x+2}{x-1}\right)^{\frac{1}{4}} + C$

86435170279. $\dfrac{4}{3}\left(\dfrac{x-1}{x+2}\right)^{\frac{5}{4}} + C$

86435170280. $\dfrac{3}{4}\left(\dfrac{x+2}{x-1}\right)^{\frac{5}{4}} + C$

Question Number : 71 Question Id : 86435121230 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

If $\dfrac{dy}{dx} = \dfrac{2^{x+y} - 2^x}{2^y}$, $y(0) = 1$, then $y(1)$ is equal to :

Options :

86435170281. $\log_2(2 + e)$

86435170282. $\log_2(2e)$

86435170283. $\log_2(1 + e^2)$

86435170284. $\log_2(1 + e)$

Question Number : 72 Question Id : 86435121231 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

Let f be a non-negative function in $[0, 1]$ and twice differentiable in $(0, 1)$. If

$$\int_0^x \sqrt{1 - (f'(t))^2}\, dt = \int_0^x f(t)\, dt, \ 0 \le x \le 1 \ \text{and} \ f(0) = 0, \text{ then } \lim_{x \to 0} \frac{1}{x^2} \int_0^x f(t)\, dt :$$

Options :

86435170285.   equals 0

86435170286.   equals $\dfrac{1}{2}$

86435170287.   equals 1

86435170288.   does not exist

Question Number : 73 Question Id : 86435121232 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No
Correct Marks : 4 Wrong Marks : 1

If p and q are the lengths of the perpendiculars from the origin on the lines,

$x \csc \alpha - y \sec \alpha = k \cot 2\alpha$ and $x \sin \alpha + y \cos \alpha = k \sin 2\alpha$ respectively, then k^2 is equal to :

Options :

86435170289. $p^2 + 2q^2$

86435170290. $p^2 + 4q^2$

86435170291. $2p^2 + q^2$

86435170292. $4p^2 + q^2$

Question Number : 74 Question Id : 86435121233 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No
Correct Marks : 4 Wrong Marks : 1

The length of the latus rectum of a parabola, whose vertex and focus are on the positive x-axis at a distance R and S (> R) respectively from the origin, is :

Options :

86435170293. $2(S+R)$

86435170294. $2(S-R)$

86435170295. $4(S+R)$

86435170296. $4(S-R)$

Question Number : 75 Question Id : 86435121234 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No
Correct Marks : 4 Wrong Marks : 1

The line $12x \cos\theta + 5y \sin\theta = 60$ is tangent to which of the following curves ?

Options :

86435170297. $x^2 + y^2 = 60$

86435170298. $x^2 + y^2 = 169$

86435170299. $144x^2 + 25y^2 = 3600$

86435170300. $25x^2 + 12y^2 = 3600$

Question Number : 76 Question Id : 86435121235 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No
Correct Marks : 4 Wrong Marks : 1

Let the equation of the plane, that passes through the point $(1, 4, -3)$ and contains the line of intersection of the planes $3x - 2y + 4z - 7 = 0$ and $x + 5y - 2z + 9 = 0$, be $\alpha x + \beta y + \gamma z + 3 = 0$, then $\alpha + \beta + \gamma$ is equal to :

Options :

86435170301. 23

86435170302. 15

86435170303. -15

86435170304. -23

Question Number : 77 Question Id : 86435121236 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No
Correct Marks : 4 Wrong Marks : 1

$\operatorname{cosec}18°$ is a root of the equation :

Options :

86435170305. $x^2 - 2x - 4 = 0$

86435170306. $x^2 - 2x + 4 = 0$

86435170307. $x^2 + 2x - 4 = 0$

86435170308. $4x^2 + 2x - 1 = 0$

Question Number : 78 Question Id : 86435121237 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No
Correct Marks : 4 Wrong Marks : 1

Let $\vec{a}$ and $\vec{b}$ be two vectors such that $\left|2\vec{a} + 3\vec{b}\right| = \left|3\vec{a} + \vec{b}\right|$ and the angle between $\vec{a}$ and $\vec{b}$ is 60°. If $\frac{1}{8}\vec{a}$ is a unit vector, then $\left|\vec{b}\right|$ is equal to :

Options :

86435170309. 4

86435170310. 5

86435170311. 6

86435170312. 8

Question Number : 79 Question Id : 86435121238 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No
Correct Marks : 4 Wrong Marks : 1

A vertical pole fixed to the horizontal ground is divided in the ratio 3 : 7 by a mark on it with lower part shorter than the upper part. If the two parts subtend equal angles at a point on the ground 18 m away from the base of the pole, then the height of the pole (in meters) is :

Options :

86435170313. $12\sqrt{10}$

86435170314. $8\sqrt{10}$

86435170315. $6\sqrt{10}$

86435170316. $12\sqrt{15}$

Question Number : 80 Question Id : 86435121239 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No
Correct Marks : 4 Wrong Marks : 1

Let $*$, $\square$ $\in$ $\{\wedge, \vee\}$ be such that the Boolean expression $(p * {\sim}q) \Rightarrow (p \square q)$ is a tautology. Then :

Options :

86435170317. $* = \wedge, \square = \wedge$

86435170318. $* = \wedge, \square = \vee$

86435170319. $* = \vee, \square = \wedge$

86435170320. $* = \vee, \square = \vee$

Mathematics Section B

Section Id :	864351985
Section Number :	6
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	10
Number of Questions to be attempted :	5
Section Marks :	20
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Sub-Section Number :	1
Sub-Section Id :	8643511212
Question Shuffling Allowed :	Yes

Question Number : 81 Question Id : 86435121240 Question Type : SA

Correct Marks : 4 Wrong Marks : 0

If $\left(\dfrac{3^6}{4^4}\right)k$ is the term, independent of x, in the binomial expansion of $\left(\dfrac{x}{4} - \dfrac{12}{x^2}\right)^{12}$, then k 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 : 82 Question Id : 86435121241 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

A point z moves in the complex plane such that $\arg\left(\dfrac{z-2}{z+2}\right) = \dfrac{\pi}{4}$, then the minimum value of $\left|z - 9\sqrt{2} - 2i\right|^2$ 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 : 83 Question Id : 86435121242 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

If 'R' is the least value of 'a' such that the function $f(x) = x^2 + ax + 1$ is increasing on $[1, 2]$ and 'S' is the greatest value of 'a' such that the function $f(x) = x^2 + ax + 1$ is decreasing on $[1, 2]$, then the value of $|R - S|$ is _____.

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

Question Number : 84 Question Id : 86435121243 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

Let [t] denote the greatest integer ≤ t. Then the value of $8 \cdot \int_{-\frac{1}{2}}^{1} ([2x] + |x|) \, dx$ is _____.

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

Question Number : 85 Question Id : 86435121244 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

If $x \, \phi(x) = \int_{5}^{x} \left(3t^2 - 2\phi'(t) \right) dt$, $x > -2$, and $\phi(0) = 4$, then $\phi(2)$ is _____.

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

Question Number : 86 Question Id : 86435121245 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

If the variable line $3x + 4y = \alpha$ lies between the two circles
$(x-1)^2 + (y-1)^2 = 1$ and $(x-9)^2 + (y-1)^2 = 4$, without intercepting a chord on either circle, then the sum of all the integral values of α is _____.

Question Number : 87 Question Id : 86435121246 Question Type : SA

Correct Marks : 4 Wrong Marks : 0

The square of the distance of the point of intersection of the line $\dfrac{x-1}{2} = \dfrac{y-2}{3} = \dfrac{z+1}{6}$ and the plane $2x - y + z = 6$ from the point $(-1, -1, 2)$ is _____.

Question Number : 88 Question Id : 86435121247 Question Type : SA

Correct Marks : 4 Wrong Marks : 0

An electric instrument consists of two units. Each unit must function independently for the instrument to operate. The probability that the first unit functions is 0.9 and that of the second unit is 0.8. The instrument is switched on and it fails to operate. If the probability that only the first unit failed and second unit is functioning is p, then 98 p is equal to _____.

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

Question Number : 89 Question Id : 86435121248 Question Type : SA

Correct Marks : 4 Wrong Marks : 0

The number of six letter words (with or without meaning), formed using all the letters of the word 'VOWELS', so that all the consonants never come together, is _____.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

Question Number : 90 Question Id : 86435121249 Question Type : SA

Correct Marks : 4 Wrong Marks : 0

The mean of 10 numbers

7×8, 10×10, 13×12, 16×14, ... is _____.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1