National Testing Agency

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B TECH EG

Group Number :	1
Group Id :	708191179
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Physics Section A

Section Id :	708191652
Section Number :	1
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	20
Number of Questions to be attempted :	20

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Section Marks :	80
Mark As Answered Required? :	Yes
Sub-Section Number :	1
Sub-Section Id :	708191932
Question Shuffling Allowed :	Yes

Question Number : 1 Question Id : 70819116684 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

The period of oscillation of a simple pendulum is $T = 2\pi\sqrt{\frac{L}{g}}$. Measured value of 'L' is 1.0 m from meter scale having a minimum division of 1 mm and time of one complete oscillation is 1.95 s measured from stopwatch of 0.01 s resolution. The percentage error in the determination of 'g' will be :

Options :

70819155201. 1.33 %

70819155202. 1.03%

70819155203. 1.13%

70819155204. 1.30%

Question Number : 1 Question Id : 70819116684 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

સાદા લોલકનાં દોલનોનો આવર્તકાળ $T = 2\pi\sqrt{\frac{L}{g}}$ છે. 1 mm જેટલા લઘુત્તમ કાપા ધરાવતી મીટર પટ્ટી વડે મપાયેલ 'L' નું મૂલ્ય 1.0 m અને એક દોલન માટે 0.01 સેકન્ડ જેટલું વિભેદન ધરાવતી સ્ટોપવૉચ વડે મપાયેલ સમય 1.95 સે. છે. 'g' માં મપાયેલ પ્રતિશત ત્રુટિ _____ હશે.

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Options :

70819155201. 1.33%

70819155202. 1.03%

70819155203. 1.13%

70819155204. 1.30%

Question Number : 2 Question Id : 70819116685 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

A particle is projected with velocity v_0 along x-axis. A damping force is acting on the particle which is proportional to the square of the distance from the origin i.e. $ma = -\alpha x^2$. The distance at which the particle stops :

Options :

70819155205. $\left(\frac{2v_0^2}{3\alpha}\right)^{\frac{1}{2}}$

70819155206. $\left(\frac{3v_0^2}{2\alpha}\right)^{\frac{1}{2}}$

70819155207. $\left(\frac{3v_0^2}{2\alpha}\right)^{\frac{1}{3}}$

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70819155208. $\left(\frac{2v_0}{3\alpha}\right)^{\frac{1}{3}}$

Question Number : 2 Question Id : 70819116685 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

x–અક્ષની દિશામાં એક કણને v_0 જેટલા વેગથી પ્રક્ષપિ કરવામાં આવે છે. કણ પર અવમંદન બળ લાગે છે કે જે ઉદ્‌ગમથી અંતરનાં વર્ગના સમપ્રમાણમાં, એટલે કે $ma = -\alpha x^2$ છે. અંતર કે જ્યાં કણ અટકશે તે _____.

Options :

70819155205. $\left(\frac{2v_0^2}{3\alpha}\right)^{\frac{1}{2}}$

70819155206. $\left(\frac{3v_0^2}{2\alpha}\right)^{\frac{1}{2}}$

70819155207. $\left(\frac{3v_0^2}{2\alpha}\right)^{\frac{1}{3}}$

70819155208. $\left(\frac{2v_0}{3\alpha}\right)^{\frac{1}{3}}$

Question Number : 3 Question Id : 70819116686 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

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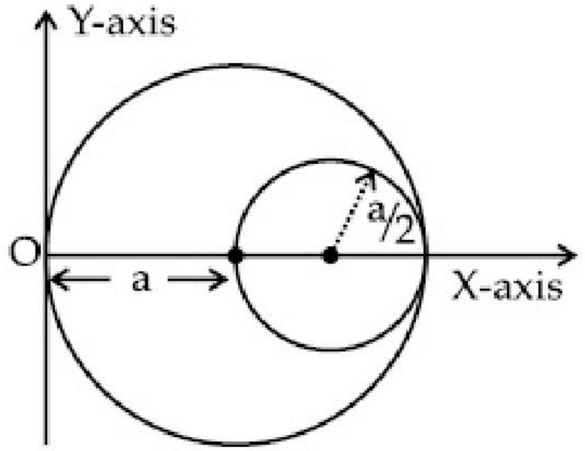
A circular hole of radius $\left(\frac{a}{2}\right)$ is cut out of a circular disc of radius 'a' as shown in figure. The centroid of the remaining circular portion with respect to point 'O' will be :



Options :

70819155209. $\frac{1}{6}a$

70819155210. $\frac{5}{6}a$

70819155211. $\frac{2}{3}a$

70819155212. $\frac{10}{11}a$

Question Number : 3 Question Id : 70819116686 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

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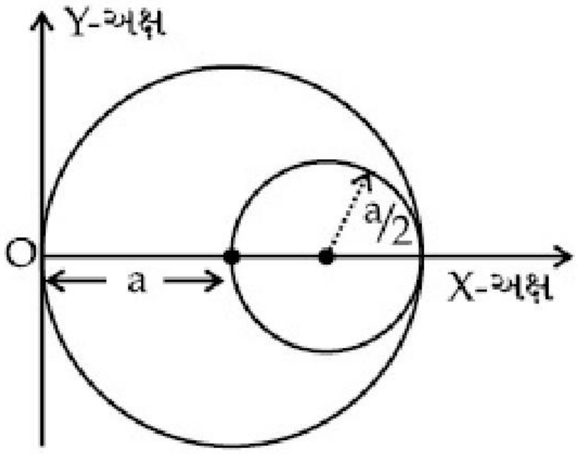
આકૃતિમાં દર્શાવ્યા અનુસાર 'a' ત્રિજ્યા ધરાવતી વર્તુળાકાર તક્તિમાંથી $\left(\frac{a}{2}\right)$ જેટલી ત્રિજ્યા ધરાવતું વર્તુળાકાર છિદ્ર કાપવામાં આવે છે. બિંદુ 'O' ની સાપેક્ષ બાકી રહેતા ભાગ માટે ગુરુત્વીય કેન્દ્ર _____ છે.



Options :

70819155209. $\frac{1}{6}a$

70819155210. $\frac{5}{6}a$

70819155211. $\frac{2}{3}a$

70819155212. $\frac{10}{11}a$

Question Number : 4 Question Id : 70819116687 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

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A body weighs 49 N on a spring balance at the north pole. What will be its weight recorded on the same weighing machine, if it is shifted to the equator ?

[Use $g = \frac{GM}{R^2} = 9.8\ ms^{-2}$ and radius of earth, R = 6400 km.]

Options :

70819155213. 49.17 N

70819155214. 49 N

70819155215. 48.83 N

70819155216. 49.83 N

Question Number : 4 Question Id : 70819116687 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

ઉત્તર ધ્રુવ ઉપર એક વસ્તુનું સ્પ્રિંગ કાંટા ઉપર વજન 49 N છે. જો તેને વિષવવૃત્ત ઉપર ખસેડવામાં આવે તો આ જ વજનકાંટા ઉપર તેનું કેટલું વજન નોંધાશે ?

[$g = \frac{GM}{R^2} = 9.8\ ms^{-2}$ લો અને પૃથ્વીની ત્રિજ્યા R = 6400 km.]

Options :

70819155213. 49.17 N

70819155214. 49 N

70819155215. 48.83 N

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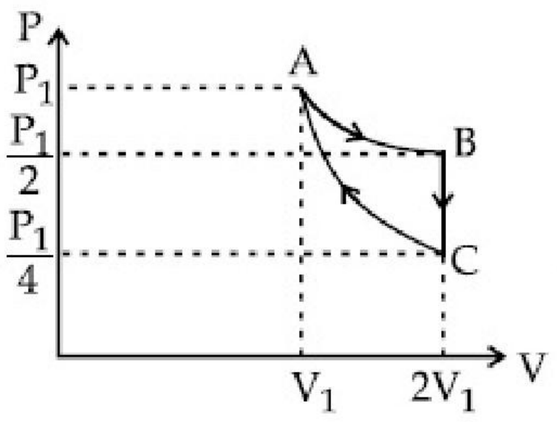
70819155216. 49.83 N

Question Number : 5 Question Id : 70819116688 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

If one mole of an ideal gas at (P_1, V_1) is allowed to expand reversibly and isothermally (A to B) its pressure is reduced to one-half of the original pressure (see figure). This is followed by a constant volume cooling till its pressure is reduced to one-fourth of the initial value ($B \rightarrow C$). Then it is restored to its initial state by a reversible adiabatic compression (C to A). The net workdone by the gas is equal to :



Options :

70819155217. $RT\left(\ln 2 - \frac{1}{2(\gamma-1)}\right)$

70819155218. $-\frac{RT}{2(\gamma-1)}$

70819155219. $RT \ln 2$

70819155220. 0

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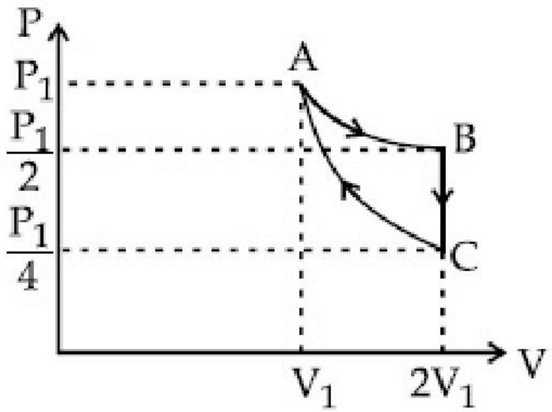
Question Number : 5 Question Id : 70819116688 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

(P_1, V_1) એ રહેલ એક મોલ આદર્શ વાયુનું પ્રતિવર્તીય અને સમતાપીય વિસ્તરણ (A થી B) કરાવવામાં આવે, ત્યારે તેનું દબાણ મૂળ દબાણ કરતાં અડધું થાય છે. (આકૃતિ જુઓ) ત્યારબાદ તેનું અચળ કદે ત્યાં સુધી ઠારણ કરવામાં આવે છે કે જેથી તેનું દબાણ મૂળ દબાણ કરતાં ચોથા ભાગનું થાય (B → C). ત્યારબાદ પ્રતિવર્તી સમોષ્મી દબાણ દ્વારા (C થી A) તેની મૂળ સ્થિતિ પ્રાપ્ત કરવામાં આવે છે. વાયુ દ્વારા થતું ચોખ્ખું કાર્ય _____ છે.



Options :

70819155217. $RT\left(\ln 2 - \frac{1}{2(\gamma-1)}\right)$

70819155218. $-\frac{RT}{2(\gamma-1)}$

70819155219. $RT \ln 2$

70819155220. 0

Question Number : 6 Question Id : 70819116689 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

On the basis of kinetic theory of gases, the gas exerts pressure because its molecules :

Options :

70819155221. continuously lose their energy till it reaches wall.

70819155222. continuously stick to the walls of container.

70819155223. are attracted by the walls of container.

70819155224. suffer change in momentum when impinge on the walls of container.

Question Number : 6 Question Id : 70819116689 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

વાયુનાં ગતિવાદ મુજબ, વાયુ દબાણ લગાડે છે કારણ કે તેના અણુઓ :

Options :

70819155221. દિવાલ સુધી પહોંચે ત્યાં સુધી સતત તેમની ઊર્જા ગુમાવે છે.

70819155222. પાત્રની દિવાલ ઉપર સતત જોડાયેલા રહે છે.

70819155223. પાત્રની દિવાલથી આકર્ષાયેલા રહે છે.

70819155224. પાત્રની દિવાલ સાથેની અથડામણ દરમ્યાન વેગમાનનો ફેરફાર અનુભવે છે.

Question Number : 7 Question Id : 70819116690 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

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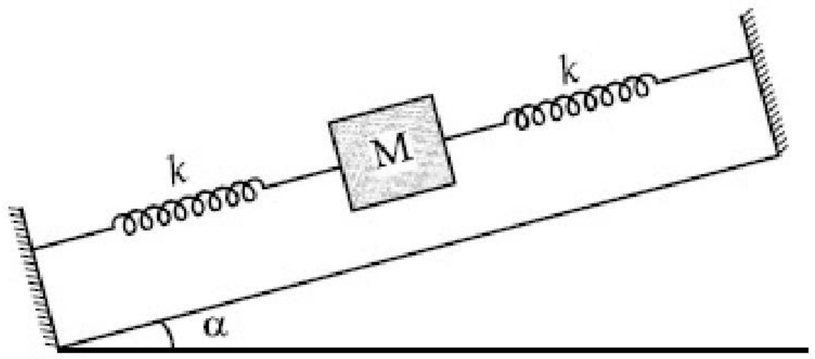
In the given figure, a body of mass M is held between two massless springs, on a smooth inclined plane. The free ends of the springs are attached to firm supports. If each spring has spring constant k, the frequency of oscillation of given body is :



Options :

70819155225. $\frac{1}{2\pi}\sqrt{\frac{k}{Mg\ \sin\alpha}}$

70819155226. $\frac{1}{2\pi}\sqrt{\frac{2k}{Mg\ \sin\alpha}}$

70819155227. $\frac{1}{2\pi}\sqrt{\frac{2k}{M}}$

70819155228. $\frac{1}{2\pi}\sqrt{\frac{k}{2M}}$

Question Number : 7 Question Id : 70819116690 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

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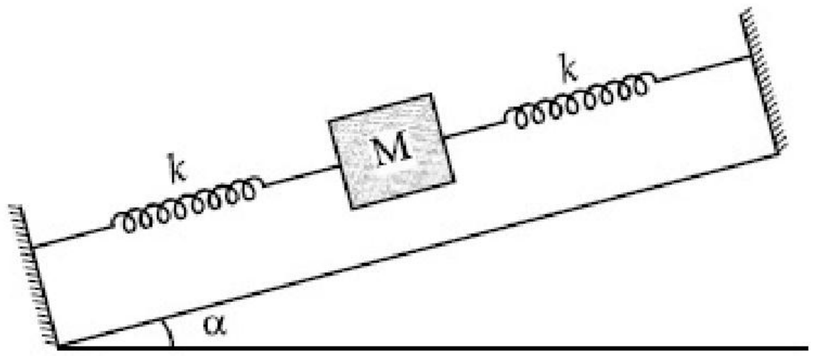
આપેલા આકૃત્તિમાં, M દળ ધરાવતો પદાર્થ બે દળરહિત સ્પ્રિંગો વચ્ચે ઘર્ષણરહિત ઢળતા સમતલ (ઢોળાવ) પર રાખવામાં (બાંધવામાં) આવેલ છે. સ્પ્રિંગોનાં મુક્ત છેડાઓને જડ-આધાર સાથે જોડવામાં આવેલ છે. જો દરેક સ્પ્રિંગનો બળ અચળાંક k હોય તો પદાર્થનાં દોલનની આવૃત્તિ _____ છે.



Options :

70819155225. $\frac{1}{2\pi}\sqrt{\frac{k}{\mathrm{Mg}\ \sin\alpha}}$

70819155226. $\frac{1}{2\pi}\sqrt{\frac{2k}{\mathrm{Mg}\ \sin\alpha}}$

70819155227. $\frac{1}{2\pi}\sqrt{\frac{2k}{\mathrm{M}}}$

70819155228. $\frac{1}{2\pi}\sqrt{\frac{k}{2\mathrm{M}}}$

Question Number : 8 Question Id : 70819116691 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

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When a particle executes SHM, the nature of graphical representation of velocity as a function of displacement is :

Options :

70819155229. circular

70819155230. elliptical

70819155231. parabolic

70819155232. straight line

Question Number : 8 Question Id : 70819116691 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

જ્યારે કણ સ.આ.ગ. કરતો હોય તો વેગનું સ્થાનાંતરના વિધેયમાં (પદમાં) આલેખીય નિરૂપણ _____ થશે.

Options :

70819155229. વર્તુળાકાર

70819155230. દીર્ઘવૃત્તીય

70819155231. પરવલય

70819155232. સીધી રેખા

Question Number : 9 Question Id : 70819116692 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

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Which of the following equations represents a travelling wave ?

Options :

70819155233. $y = Ae^{x}\cos(\omega t - \theta)$

70819155234. $y = Ae^{-x^2}(vt + \theta)$

70819155235. $y = A\sin(15x - 2t)$

70819155236. $y = A\sin x\ \cos\omega t$

Question Number : 9 Question Id : 70819116692 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

નીચેનાંમાંથી કયું સમીકરણ પ્રગામી તરંગ દર્શાવે છે ?

Options :

70819155233. $y = Ae^{x}\cos(\omega t - \theta)$

70819155234. $y = Ae^{-x^2}(vt + \theta)$

70819155235. $y = A\sin(15x - 2t)$

70819155236. $y = A\sin x\ \cos\omega t$

Question Number : 10 Question Id : 70819116693 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

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Two electrons each are fixed at a distance '$2d$'. A third charge proton placed at the midpoint is displaced slightly by a distance x ($x << d$) perpendicular to the line joining the two fixed charges. Proton will execute simple harmonic motion having angular frequency : (m = mass of charged particle)

Options :

70819155237. $\left(\frac{q^2}{2\pi\varepsilon_0 md^3}\right)^{\frac{1}{2}}$

70819155238. $\left(\frac{2q^2}{\pi\varepsilon_0 md^3}\right)^{\frac{1}{2}}$

70819155239. $\left(\frac{\pi\varepsilon_0 md^3}{2q^2}\right)^{\frac{1}{2}}$

70819155240. $\left(\frac{2\pi\varepsilon_0 md^3}{q^2}\right)^{\frac{1}{2}}$

Question Number : 10 Question Id : 70819116693 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

બે ઈલેક્ટ્રોનને '$2d$' અંતરે જડિત રાખવામાં આવ્યા છે. એક ત્રીજા વિદ્યુતભાર પ્રોટોન કે જે મધ્યબિંદુએ રાખી તેને x ($x << d$) જેટલા ખૂબ નાના અંતરે બે જડીત વિદ્યુતભારોને જોડતી રેખાને લંબ ખસેડવામાં આવે છે. પ્રોટોન _____ કોણીય આવૃત્તિ સાથે સરળ આવર્ત ગતિ કરે છે. (m = વિદ્યુતભારિત કણનું દળ)

Options :

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70819155237. $\left(\frac{q^2}{2\pi\varepsilon_0 md^3}\right)^{\frac{1}{2}}$

70819155238. $\left(\frac{2q^2}{\pi\varepsilon_0 md^3}\right)^{\frac{1}{2}}$

70819155239. $\left(\frac{\pi\varepsilon_0 md^3}{2q^2}\right)^{\frac{1}{2}}$

70819155240. $\left(\frac{2\pi\varepsilon_0 md^3}{q^2}\right)^{\frac{1}{2}}$

Question Number : 11 Question Id : 70819116694 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

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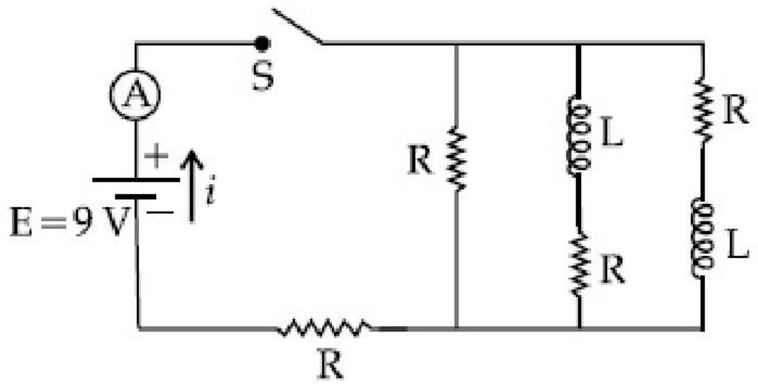
Figure shows a circuit that contains four identical resistors with resistance R = 2.0 Ω, two identical inductors with inductance L = 2.0 mH and an ideal battery with *emf* E = 9 V. The current '*i*' just after the switch 'S' is closed will be :



Options :

70819155241. 2.25 A

70819155242. 3.0 A

70819155243. 3.37 A

70819155244. 9 A

Question Number : 11 Question Id : 70819116694 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

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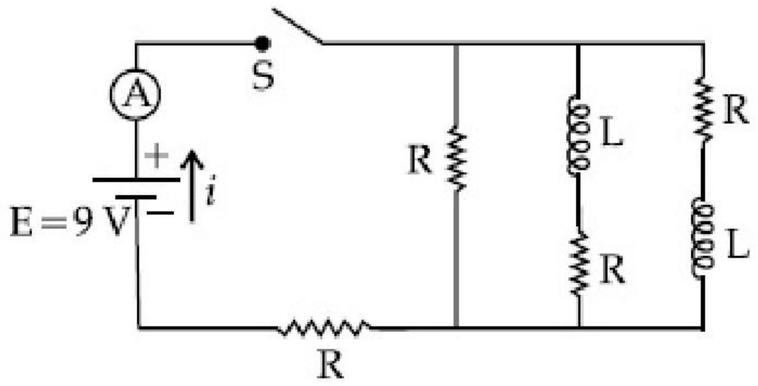
આકૃત્તિમાં દર્શાવ્યા મુજબ $R = 2.0\ \Omega$ મૂલ્યોનાં ચાર સમાન અવરોધો, $L = 2.0$ mH પ્રેરકત્વ ધરાવતાં બે સમાન પ્રેરકો અને $E = 9$ V *emf* ધરાવતી આદર્શ બેટરીનો પરિપથ છે. કળ 'S' બંધ કર્યા બાદ તુરંત જ એમીટરમાં દર્શાવેલ પ્રવાહ *'i'* _____ હશે.



Options :

70819155241. 2.25 A

70819155242. 3.0 A

70819155243. 3.37 A

70819155244. 9 A

Question Number : 12 Question Id : 70819116695 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

A soft ferromagnetic material is placed in an external magnetic field. The magnetic domains :

Options :

70819155245. increase in size but no change in orientation.

70819155246. decrease in size and changes orientation.

ZOLLEGE.in

70819155247. may increase or decrease in size and change its orientation.

70819155248. have no relation with external magnetic field.

Question Number : 12 Question Id : 70819116695 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

એક નરમ લોહચુંબકત્વને બાહ્ય ચુંબકીય ક્ષેત્રમાં મૂકવામાં આવે છે. ચુંબકીય ડોમેન (પ્રદેશ) _____.

Options :

70819155245. કદમાં વધે છે પરંતુ તેની દિકૃસ્થિતી (અનુસ્થાપન) બદલાતી નથી.

70819155246. કદમાં ઘટાડો અને તેની દિકૃસ્થિતિ બદલાય છે.

70819155247. કદમાં વધારો કે ઘટાડો થાય છે અને તેની દિકૃસ્થિતિ બદલાય છે.

70819155248. તેને બાહ્ય ચુંબકીય ક્ષેત્ર સાથે સંબંધ નથી.

Question Number : 13 Question Id : 70819116696 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

ZOLLEGE.in

Match List - I with List - II.

List - I		List - II	
(a)	Source of microwave frequency	(i)	Radioactive decay of nucleus
(b)	Source of infrared frequency	(ii)	Magnetron
(c)	Source of Gamma Rays	(iii)	Inner shell electrons
(d)	Source of X-rays	(iv)	Vibration of atoms and molecules
		(v)	LASER
		(vi)	RC circuit

Choose the correct answer from the options given below :

Options :

70819155249. (a)-(vi), (b)-(v), (c)-(i), (d)-(iv)

70819155250. (a)-(vi), (b)-(iv), (c)-(i), (d)-(v)

70819155251. (a)-(ii), (b)-(iv), (c)-(i), (d)-(iii)

70819155252. (a)-(ii), (b)-(iv), (c)-(vi), (d)-(iii)

Question Number : 13 Question Id : 70819116696 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

ZOLLEGE.in

સૂચી - I ને સૂચી - II સાથે મેળવો.

સૂચી - I		સૂચી - II	
(a)	માઈક્રોવેવ આવૃત્તિનો સ્ત્રોત	(i)	ન્યુક્લિયસનો રેડિયોએક્ટિવ ક્ષય
(b)	પારરક્ત આવૃત્તિનો સ્ત્રોત	(ii)	મેગ્નેટ્રોન
(c)	ગામા-કિરણોનો સ્ત્રોત	(iii)	અંદરની પરિકક્ષા (શેલ) ઈલેક્ટ્રોન
(d)	ક્ષ-કિરણોનો સ્ત્રોત	(iv)	અણુ અને પરમાણુઓનાં દોલનો
		(v)	LASER
		(vi)	RC પરિપથ

નીચે આપેલા વિકલ્પોમાંથી સાચાં જવાબનું ચયન કરો :

Options :

70819155249. (a)-(vi), (b)-(v), (c)-(i), (d)-(iv)

70819155250. (a)-(vi), (b)-(iv), (c)-(i), (d)-(v)

70819155251. (a)-(ii), (b)-(iv), (c)-(i), (d)-(iii)

70819155252. (a)-(ii), (b)-(iv), (c)-(vi), (d)-(iii)

Question Number : 14 Question Id : 70819116697 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

If the source of light used in a Young's double slit experiment is changed from red to violet :

Options :

70819155253. the fringes will become brighter.

70819155254. consecutive fringe lines will come closer.

ZOLLEGE.in

70819155255. the intensity of minima will increase.

70819155256. the central bright fringe will become a dark fringe.

Question Number : 14 Question Id : 70819116697 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

જો યંગના બે-સ્લિટનાં પ્રયોગમાં વપરાતાં પ્રકાશ ઉદ્‌ગમ લાલ થી બદલી જાંબલી કરવામાં આવે તો _____.

Options :

70819155253. શલાકાઓ વધારે પ્રકાશિત થશે.

70819155254. ક્રમિક શલાકાઓ નજીક આવશે.

70819155255. લઘુત્તમોની તીવ્રતા વધશે.

70819155256. મધ્યસ્થ પ્રકાશિત શલાકા અપ્રકાશિત બને છે.

Question Number : 15 Question Id : 70819116698 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

An X-ray tube is operated at 1.24 million volt. The shortest wavelength of the produced photon will be :

Options :

70819155257. 10^{-1} nm

70819155258. 10^{-2} nm

70819155259. 10^{-3} nm

ZOLLEGE.in

70819155260. 10^{-4} nm

Question Number : 15 Question Id : 70819116698 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

એક X-ray ટ્યુબ 1.24 દસ લાખ વોલ્ટ ઉપર કાર્યરત છે. ઉત્સર્જીત ફોટોનની સૌથી ટૂંકી તરંગલંબાઈ _____ હશે.

Options :

70819155257. 10^{-1} nm

70819155258. 10^{-2} nm

70819155259. 10^{-3} nm

70819155260. 10^{-4} nm

Question Number : 16 Question Id : 70819116699 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

The de Broglie wavelength of a proton and α-particle are equal. The ratio of their velocities is :

Options :

70819155261. $4:1$

70819155262. $4:2$

70819155263. $4:3$

ZOLLEGE.in

70819155264. $1:4$

Question Number : 16 Question Id : 70819116699 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

પ્રોટોન અને α-કણની ડી-બ્રોગ્લી તરંગલંબાઈ સમાન છે. તેમનાં વેગોનો ગુણોત્તર _____ થશે.

Options :

70819155261. $4:1$

70819155262. $4:2$

70819155263. $4:3$

70819155264. $1:4$

Question Number : 17 Question Id : 70819116700 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

According to Bohr atom model, in which of the following transitions will the frequency be maximum ?

Options :

70819155265. $n=2$ to $n=1$

70819155266. $n=3$ to $n=2$

70819155267. $n=4$ to $n=3$

70819155268. $n=5$ to $n=4$

ZOLLEGE.in

Question Number : 17 Question Id : 70819116700 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

બોહર પરમાણુ મોડેલ અનુસાર, નીચે આપેલી કઈ સંક્રાંતિ દરમ્યાન આવૃત્તિ મહત્તમ હશે ?

Options :

70819155265. $n=2$ થી $n=1$

70819155266. $n=3$ થી $n=2$

70819155267. $n=4$ થી $n=3$

70819155268. $n=5$ થી $n=4$

Question Number : 18 Question Id : 70819116701 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

Zener breakdown occurs in a $p-n$ junction having p and n both :

Options :

70819155269. lightly doped and have narrow depletion layer.

70819155270. lightly doped and have wide depletion layer.

70819155271. heavily doped and have narrow depletion layer.

70819155272. heavily doped and have wide depletion layer.

ZOLLEGE.in

Question Number : 18 Question Id : 70819116701 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

$p-n$ જંક્શન ડાયોડમાં ઝેનર બ્રેકડાઉન ત્યારે થાય છે જ્યારે p અને n બંને _____.

Options :

70819155269. ખૂબ ઓછી અશુધ્ધિવાળા હોય છે અને તેમને પાતળો ડિપ્લીશન લેયર હોય છે.

70819155270. ખૂબ ઓછી અશુધ્ધિવાળા અને તેમને પહોળો ડિપ્લીશન સ્તર હોય છે.

70819155271. ખૂબ વધારે અશુધ્ધિવાળા અને પાતળો ડિપ્લીશન સ્તર હોય છે.

70819155272. ખૂબ વધારે અશુધ્ધિવાળા અને પહોળો ડિપ્લીશન સ્તર હોય છે.

Question Number : 19 Question Id : 70819116702 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

Given below are two statements :

Statement I : PN junction diodes can be used to function as transistor, simply by connecting two diodes, back to back, which acts as the base terminal.

Statement II : In the study of transistor, the amplification factor β indicates ratio of the collector current to the base current.

In the light of the above statements, choose the correct answer from the options given below.

Options :

70819155273. Both Statement I and Statement II are true

70819155274. Both Statement I and Statement II are false

70819155275. Statement I is true but Statement II is false

ZOLLEGE.in

70819155276. Statement I is false but Statement II is true

Question Number : 19 Question Id : 70819116702 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

નીચે બે વિધાનો આપેલા છે :

વિધાન I : PN જંક્શન ડાયોડ્સનો ઉપયોગ ટ્રાન્ઝિસ્ટર રીતે કરવામાં આવે છે કે જેમાં બે સમાન ડાયોડોને એકબીજાને પીઠોપીઠ (back to back) જોડવામાં આવે છે કે જે બેઝ-ટર્મિનલ તરીકે વર્તે છે.

વિધાન II : ટ્રાન્ઝિસ્ટરનાં અભ્યાસમાં, વિવર્ધન ગુણાંક β એ કલેક્ટર પ્રવાહ અને બેઝ પ્રવાહનો ગુણોત્તર દર્શાવે છે.

ઉપરોક્ત વિધાનોનાં સંદર્ભમાં, નીચે આપેલા વિકલ્પો પૈકી સૌથી યોગ્ય ઉત્તર પસંદ કરો.

Options :

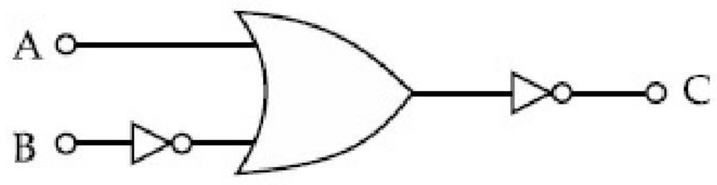
70819155273. બંને વિધાન I અને વિધાન II સાચાં છે.

70819155274. બંને વિધાન I અને વિધાન II ખોટાં છે.

70819155275. વિધાન I સાચું પણ વિધાન II ખોટું છે.

70819155276. વિધાન I ખોટું પણ વિધાન II સાચું છે.

Question Number : 20 Question Id : 70819116703 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1



The logic circuit shown above is equivalent to :

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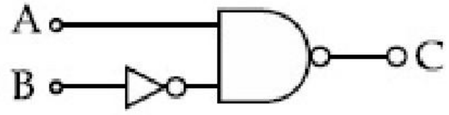
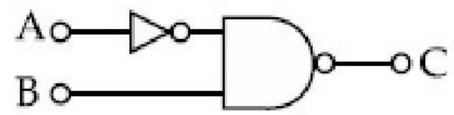
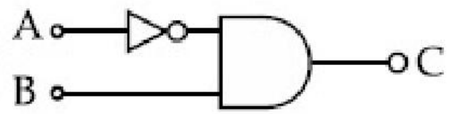
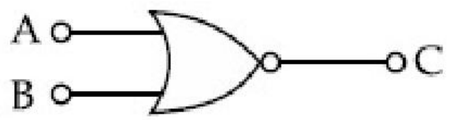
Options :

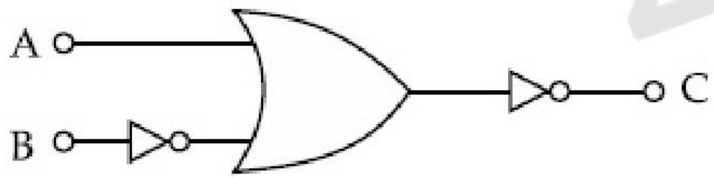
70819155277. 

70819155278. 

70819155279. 

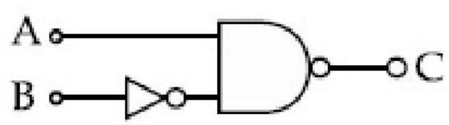
70819155280. 

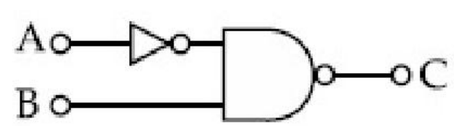
Question Number : 20 Question Id : 70819116703 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1



ઉપર દર્શાવેલ લોજીક-પરિપથ એ _____ ને સમતુલ્ય છે.

Options :

70819155277. 

70819155278. 

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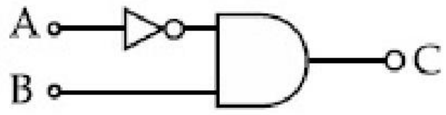
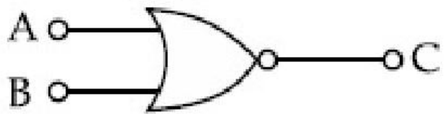
70819155279. 

70819155280. 

Physics Section B

Section Id :	708191653
Section Number :	2
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	10
Number of Questions to be attempted :	5
Section Marks :	20
Mark As Answered Required? :	Yes
Sub-Section Number :	1
Sub-Section Id :	708191933
Question Shuffling Allowed :	Yes

Question Number : 21 Question Id : 70819116704 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

Two solids A and B of mass 1 kg and 2 kg respectively are moving with equal linear momentum. The ratio of their kinetic energies $(K.E.)_A : (K.E.)_B$ will be $\frac{A}{1}$, so the value of A will be _____.

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

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Answers Type : Range
Text Areas : PlainText
Possible Answers :
5 to 5.001

Question Number : 21 Question Id : 70819116704 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

અનુક્રમે 1 kg અને 2 kg દળ ધરાવતા બે ઘન A અને B સમાન રેખીય વેગમાન સાથે ગતિ કરે છે. તેમની ગતિઊર્જાઓનો ગુણોત્તર $(K.E.)_A : (K.E.)_B \frac{A}{1}$ છે, તો A નું મૂલ્ય _____ થશે.

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Range
Text Areas : PlainText
Possible Answers :
5 to 5.001

Question Number : 22 Question Id : 70819116705 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

A uniform metallic wire is elongated by 0.04 m when subjected to a linear force F. The elongation, if its length and diameter is doubled and subjected to the same force will be _____ cm.

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Range
Text Areas : PlainText
Possible Answers :
5 to 5.001

ZOLLEGE.in

Question Number : 22 Question Id : 70819116705 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

એક સમાન ધાત્વીય તાર પર F જેટલું રેખીય બળ લગાડવામાં આવે ત્યારે તેની લંબાઈ 0.04 m જેટલી વધે છે. જો તેની લંબાઈ અને વ્યાસ બમણો કરવામાં આવે તો તે સમાન બળ માટે પ્રતાન (લંબાઈ) માં વધારો _____ cm થશે.

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Range
Text Areas : PlainText
Possible Answers :
5 to 5.001

Question Number : 23 Question Id : 70819116706 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

A uniform thin bar of mass 6 kg and length 2.4 meter is bent to make an equilateral hexagon. The moment of inertia about an axis passing through the centre of mass and perpendicular to the plane of hexagon is _____ $\times 10^{-1}$ kg m^2.

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Range
Text Areas : PlainText
Possible Answers :
5 to 5.001

Question Number : 23 Question Id : 70819116706 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

એક સમાન 6 kg દળ ધરાવતાં અને 2.4 meter લંબાઈ ધરાવતાં પાતળા પટ્ટાને વાળીને એક સમતુલ્ય ષષ્ઠકોણ બનાવવામાં આવે છે. ષષ્ઠકોણનાં સમતલને લંબ અને દ્રવ્યમાન કેન્દ્રમાંથી પસાર થતી અક્ષને અનુલક્ષીને જડત્વની ચાકમાત્રા _____ $\times 10^{-1}$ kg m^2 હશે.

ZOLLEGE.in

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Range
Text Areas : PlainText
Possible Answers :
5 to 5.001

Question Number : 24 Question Id : 70819116707 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

The root mean square speed of molecules of a given mass of a gas at 27°C and 1 atmosphere pressure is 200 ms^{-1}. The root mean square speed of molecules of the gas at 127°C and 2 atmosphere pressure is $\frac{x}{\sqrt{3}}$ ms^{-1}. The value of x will be _____.

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Range
Text Areas : PlainText
Possible Answers :
5 to 5.001

Question Number : 24 Question Id : 70819116707 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

27°C તાપમાને અને 1 વાતાવરણ દબાણે રહેલા વાયુ માટે આપેલા દળ ધરાવતા અણુઓની સરેરાશ વર્ગિત વર્ગમૂળ (r.m.s.) ઝડપ 200 ms^{-1} છે. 127°C તાપમાને અને 2 વાતાવરણ દબાણે રહેલા વાયુ માટે અણુઓની સરેરાશ વર્ગિત વર્ગમૂળ ઝડપ $\frac{x}{\sqrt{3}}$ ms^{-1} છે. x નું મૂલ્ય _____ હશે.

Response Type : Numeric
Evaluation Required For SA : Yes

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Show Word Count : Yes
Answers Type : Range
Text Areas : PlainText
Possible Answers :
5 to 5.001

Question Number : 25 Question Id : 70819116708 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

Two cars are approaching each other at an equal speed of 7.2 km/hr. When they see each other, both blow horns having frequency of 676 Hz. The beat frequency heard by each driver will be _____ Hz. [Velocity of sound in air is 340 m/s.]

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Range
Text Areas : PlainText
Possible Answers :
5 to 5.001

Question Number : 25 Question Id : 70819116708 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

બે મોટરકાર એકબીજા તરફ 7.2 km/hr ની ઝડપ થી ગતિ કરે છે. તેઓ જ્યારે એકબીજાને જોઈને બંને 676 Hz આવૃત્તિવાળું હોર્ન વગાડે છે. બંને ડ્રાઈવરોને સંભળાતા સ્પંદની આવૃત્તિ _____ Hz છે. [ધ્વનિની હવામાં વેગ 340 m/s છે.]

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Range
Text Areas : PlainText
Possible Answers :
5 to 5.001

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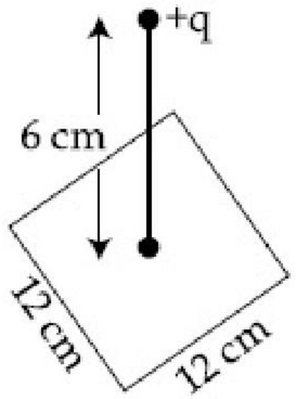
Question Number : 26 Question Id : 70819116709 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

A point charge of $+12\ \mu C$ is at a distance 6 cm vertically above the centre of a square of side 12 cm as shown in figure. The magnitude of the electric flux through the square will be _____ $\times 10^3\ Nm^2/C$.



Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Range
Text Areas : PlainText
Possible Answers :
5 to 5.001

Question Number : 26 Question Id : 70819116709 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

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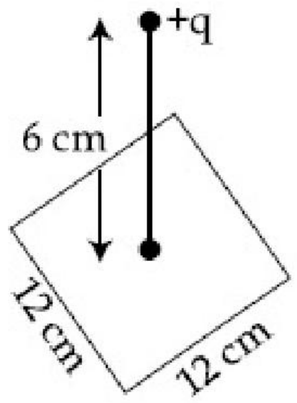
આકૃત્તિમાં દર્શાવ્યા પ્રમાણે 12 cm ની બાજુ ધરાવતાં એક ચોરસની શિરોલંબ ઉપર 6 cm અંતરે $+12\ \mu C$ નાં એક બિંદુવત્ત વીજભાર રહેલ છે. ચોરસમાંથી પસાર થતાં વિદ્યુતફ્લક્સનું મૂલ્ય _____ $\times 10^3\ Nm^2/C$ થશે.



Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Range
Text Areas : PlainText
Possible Answers :
5 to 5.001

Question Number : 27 Question Id : 70819116710 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

A cylindrical wire of radius 0.5 mm and conductivity 5×10^7 S/m is subjected to an electric field of 10 mV/m. The expected value of current in the wire will be $x^3\pi$ mA. The value of x is _____.

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Range
Text Areas : PlainText
Possible Answers :
5 to 5.001

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Question Number : 27 Question Id : 70819116710 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

0.5 mm ત્રિજ્યા ધરાવતાં અને 5×10^7 S/m જેટલી વાહકતા ધરાવતાં એક નળાકારીય તારને લગાડેલા 10 mV/m જેટલા વિદ્યુતક્ષેત્રમાં દાખલ કરવામાં આવે છે. તારમાં વહેતા પ્રવાહનું અપેક્ષિત મૂલ્ય $x^3\pi$ mA છે. x નું મૂલ્ય _____ છે.

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Range
Text Areas : PlainText
Possible Answers :
5 to 5.001

Question Number : 28 Question Id : 70819116711 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

A series LCR circuit is designed to resonate at an angular frequency $\omega_0=10^5$ rad/s. The circuit draws 16 W power from 120 V source at resonance. The value of resistance 'R' in the circuit is _____Ω.

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Range
Text Areas : PlainText
Possible Answers :
5 to 5.001

Question Number : 28 Question Id : 70819116711 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

એક શ્રેણી LCR પરિપથ $\omega_0=10^5$ rad/s જેટલી કોણીય આવૃત્તિ પાસે અનુનાદ અનુભવે તે રીતે તૈયાર કરવામાં આવે છે. અનુનાદ વખતે પરિપથ 120 V વોલ્ટનાં ઉદ્ગમમાંથી 16 W કાર્યત્વરા ખેંચે છે. પરિપથમાં અવરોધ 'R' નું મૂલ્ય _____Ω છે.

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Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Range
Text Areas : PlainText
Possible Answers :
5 to 5.001

Question Number : 29 Question Id : 70819116712 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

An electromagnetic wave of frequency 3 GHz enters a dielectric medium of relative electric permittivity 2.25 from vacuum. The wavelength of this wave in that medium will be _____ $\times 10^{-2}$ cm.

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Range
Text Areas : PlainText
Possible Answers :
5 to 5.001

Question Number : 29 Question Id : 70819116712 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

3 GHz આવૃત્તિ ધરાવતું એક વિદ્યુતચુંબકીય તરંગ શૂન્યાવકાશની સરખામણીમાં 2.25 જેટલી પરમીટીવીટી (પારવિદ્યુતાંક) ધરાવતાં અવાહક માધ્યમમાં દાખલ થાય છે. આ માધ્યમમાં તરંગની તરંગલંબાઈ _____ $\times 10^{-2}$ cm થશે.

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

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5 to 5.001

Question Number : 30 Question Id : 70819116713 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

A signal of 0.1 kW is transmitted in a cable. The attenuation of cable is -5 dB per km and cable length is 20 km. The power received at receiver is 10^{-x} W. The value of x is _____.

$$[\text{Gain in dB} = 10 \log_{10}\left(\frac{P_o}{P_i}\right)]$$

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

5 to 5.001

Question Number : 30 Question Id : 70819116713 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

એક કેબલ (તાર) માં 0.1 kW નાં એક સિગ્નલને પ્રસારીત કરવામાં આવે છે. કેબલનો તનુકરણ (attenuation) -5 dB પ્રતિ કિલોમીટર છે અને કેબલની લંબાઈ 20 km છે. રીસીવર છેડા આગળ મળતી કાર્યત્વરા 10^{-x} W છે. x નું મૂલ્ય _____.

$$[\text{dB માં લબ્ધિ} = 10 \log_{10}\left(\frac{P_o}{P_i}\right)]$$

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

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5 to 5.001

Chemistry Section A

Section Id :	708191654
Section Number :	3
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	20
Number of Questions to be attempted :	20
Section Marks :	80
Mark As Answered Required? :	Yes
Sub-Section Number :	1
Sub-Section Id :	708191934
Question Shuffling Allowed :	Yes

Question Number : 31 Question Id : 70819116714 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

According to Bohr's atomic theory :

(A) Kinetic energy of electron is $\propto \frac{Z^2}{n^2}$.

(B) The product of velocity (v) of electron and principal quantum number (n), 'vn' $\propto Z^2$.

(C) Frequency of revolution of electron in an orbit is $\propto \frac{Z^3}{n^3}$.

(D) Coulombic force of attraction on the electron is $\propto \frac{Z^3}{n^4}$.

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

Options :

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70819155291. (A), (C) and (D) only

70819155292. (A) and (D) only

70819155293. (C) only

70819155294. (A) only

Question Number : 31 Question Id : 70819116714 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

બ્હોરનાં પરમાણ્વીય વાદ પ્રમાણે :

(A) ઈલેક્ટ્રોનની ગતિકીય ઊર્જા $\propto \frac{Z^2}{n^2}$.

(B) ઈલેક્ટ્રોનનાં વેગ (v) નો અને મુખ્ય ક્વોન્ટમ આંક (n) નો ગુણાંક (product) 'vn' $\propto Z^2$.

(C) કક્ષામાં ઇલેક્ટ્રૉન નાં પરિભ્રમણ (revolution) ની આવૃત્તિ $\propto \frac{Z^3}{n^3}$.

(D) ઇલેક્ટ્રૉન ઉપર લાગતા આકર્ષણનાં કુલંબિક બળો $\propto \frac{Z^3}{n^4}$.

નીચે દર્શાવેલ વિકલ્પોમાંથી સૌથી વધુ બંધબેસતો જવાબ પસંદ કરો.

Options :

70819155291. ફક્ત (A), (C) અને (D)

70819155292. ફક્ત (A) અને (D)

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70819155293. ફક્ત (C)

70819155294. ફક્ત (A)

Question Number : 32 Question Id : 70819116715 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

The correct shape and I – I – I bond angles respectively in I_3^- ion are :

Options :

70819155295. Linear; 180°

70819155296. Distorted trigonal planar; 135° and 90°

70819155297. T-shaped; 180° and 90°

70819155298. Trigonal planar; 120°

Question Number : 32 Question Id : 70819116715 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

I_3^- આયનનો સાચો આકાર અને I - I - I બંધ ખૂણાઓ અનુક્રમે શોધો :

Options :

70819155295. રેખીય; 180°

70819155296. વિકૃત સમત્રિકોણીય સમતલીય; 135° અને 90°

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70819155297. T-આકારનો; 180° અને 90°

70819155298. સમત્રિકોણીય સમતલીય; 120°

Question Number : 33 Question Id : 70819116716 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

Most suitable salt which can be used for efficient clotting of blood will be :

Options :

70819155299. $NaHCO_3$

70819155300. $Mg(HCO_3)_2$

70819155301. $FeCl_3$

70819155302. $FeSO_4$

Question Number : 33 Question Id : 70819116716 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

લોહીનાં ગંઠાઈ જવા માટે અસરકારક (efficient) કયા ક્ષારનો ઉપયોગ સૌથી વધુ સુસંગત (યોગ્ય) થશે ?

Options :

70819155299. $NaHCO_3$

70819155300. $Mg(HCO_3)_2$

70819155301. $FeCl_3$

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70819155302. $FeSO_4$

Question Number : 34 Question Id : 70819116717 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

The correct set from the following in which both pairs are in correct order of melting point is :

Options :

70819155303. LiCl > LiF ; MgO > NaCl

70819155304. LiF > LiCl ; MgO > NaCl

70819155305. LiCl > LiF ; NaCl > MgO

70819155306. LiF > LiCl ; NaCl > MgO

Question Number : 34 Question Id : 70819116717 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

નીચે આપેલામાંથી સાચો સમુચ્ચય (set) કે જેમાં બે જોડીઓ (યુગ્મો) ગલનબિંદુનાં સાચાં ક્રમમાં હોય તે જણાવો.

Options :

70819155303. LiCl > LiF ; MgO > NaCl

70819155304. LiF > LiCl ; MgO > NaCl

70819155305. LiCl > LiF ; NaCl > MgO

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70819155306. $LiF > LiCl$; $NaCl > MgO$

Question Number : 35 Question Id : 70819116718 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

Match List - I with List - II.

	List - I (Metal)		List - II (Ores)
(a)	Aluminium	(i)	Siderite
(b)	Iron	(ii)	Calamine
(c)	Copper	(iii)	Kaolinite
(d)	Zinc	(iv)	Malachite

Choose the correct answer from the options given below :

Options :

70819155307. (a)-(i), (b)-(ii), (c)-(iii), (d)-(iv)

70819155308. (a)-(iv), (b)-(iii), (c)-(ii), (d)-(i)

70819155309. (a)-(ii), (b)-(iv), (c)-(i), (d)-(iii)

70819155310. (a)-(iii), (b)-(i), (c)-(iv), (d)-(ii)

Question Number : 35 Question Id : 70819116718 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

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સૂચી - I સાથે સૂચી - II ને જોડો.

	સૂચી - I (તત્ત્વ)		સૂચી - II (અયસ્કો)
(a)	એલ્યુમિનિયમ	(i)	સિડેરાઈટ
(b)	આયર્ન (લોખંડ)	(ii)	કેલેમાઈન
(c)	કોપર (તાંબુ)	(iii)	કેઓલીનાઈટ
(d)	ઝિંક	(iv)	મેલેકાઈટ

નીચે આપેલા વિકલ્પોમાંથી સાચો ઉત્તર પસંદ કરો.

Options :

70819155307. (a)-(i), (b)-(ii), (c)-(iii), (d)-(iv)

70819155308. (a)-(iv), (b)-(iii), (c)-(ii), (d)-(i)

70819155309. (a)-(ii), (b)-(iv), (c)-(i), (d)-(iii)

70819155310. (a)-(iii), (b)-(i), (c)-(iv), (d)-(ii)

Question Number : 36 Question Id : 70819116719 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 : Hydrogen is the most abundant element in the Universe, but it is not the most abundant gas in the troposphere.

Reason R : Hydrogen is the lightest element.

In the light of the above statements, choose the correct answer from the options given below :

Options :

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70819155311. Both **A** and **R** are true and **R** is the correct explanation of **A**

70819155312. Both **A** and **R** are true but **R** is NOT the correct explanation of **A**

70819155313. **A** is true but **R** is false

70819155314. **A** is false but **R** is true

Question Number : 36 Question Id : 70819116719 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

નીચે બે વિધાન આપેલા છે : એક ને કથન **A** વડે લેબલ કરેલ છે બીજાને કારણ **R** વડે લેબલ કરેલ છે.

કથન **A** : હાઈડ્રોજન એ બ્રહ્માંડમાં સૌથી વધારે પ્રચૂર તત્ત્વ છે. પણ એ ટ્રોપોસ્ફિયરમાં સૌથી વધારે પ્રચૂર વાયુ નથી.

કારણ **R** : હાઈડ્રોજન એ સૌથી હલકો તત્ત્વ છે.

ઉપરનાં વિધાનોનાં સંદર્ભમાં, નીચે આપેલા વિકલ્પોમાંથી સાચો ઉત્તર પસંદ કરો.

Options :

70819155311. બંને **A** અને **R** સાચાં છે અને **R** એ **A** ની સાચી સમજૂતી છે.

70819155312. બંને **A** અને **R** સાચાં છે પણ **R** એ **A** ની સાચી સમજૂતી નથી.

70819155313. **A** સાચું છે પણ **R** ખોટું છે.

70819155314. **A** ખોટું છે પણ **R** સાચું છે.

Question Number : 37 Question Id : 70819116720 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

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Match List - I with List - II.

	List - I (Salt)		List - II (Flame colour wavelength)
(a)	LiCl	(i)	455.5 nm
(b)	NaCl	(ii)	670.8 nm
(c)	RbCl	(iii)	780.0 nm
(d)	CsCl	(iv)	589.2 nm

Choose the correct answer from the options given below :

Options :

70819155315. (a)-(iv), (b)-(ii), (c)-(iii), (d)-(i)

70819155316. (a)-(ii), (b)-(iv), (c)-(iii), (d)-(i)

70819155317. (a)-(i), (b)-(iv), (c)-(ii), (d)-(iii)

70819155318. (a)-(ii), (b)-(i), (c)-(iv), (d)-(iii)

Question Number : 37 Question Id : 70819116720 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

સૂચી - I સાથે સૂચી - II ને જોડો.

	સૂચી - I (ક્ષાર)		સૂચી - II (જ્યોત રંગ તરંગલંબાઈ)
(a)	LiCl	(i)	455.5 nm
(b)	NaCl	(ii)	670.8 nm
(c)	RbCl	(iii)	780.0 nm
(d)	CsCl	(iv)	589.2 nm

નીચે આપેલા વિકલ્પોમાંથી સાચો જવાબ પસંદ કરો.

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Options :

70819155315. (a)-(iv), (b)-(ii), (c)-(iii), (d)-(i)

70819155316. (a)-(ii), (b)-(iv), (c)-(iii), (d)-(i)

70819155317. (a)-(i), (b)-(iv), (c)-(ii), (d)-(iii)

70819155318. (a)-(ii), (b)-(i), (c)-(iv), (d)-(iii)

Question Number : 38 Question Id : 70819116721 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

The incorrect statement among the following is :

Options :

70819155319. $VOSO_4$ is a reducing agent

70819155320. RuO_4 is an oxidizing agent

70819155321. Cr_2O_3 is an amphoteric oxide

70819155322. Red colour of ruby is due to the presence of Co^{3+}

Question Number : 38 Question Id : 70819116721 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

નીચે આપેલા પૈકી ખોટું વિધાન શોધો.

Options :

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70819155319. $VOSO_4$ એ રિડક્ષનકર્તા છે.

70819155320. RuO_4 એ ઓક્સિડેશનકર્તા છે.

70819155321. Cr_2O_3 એ ઉભયગુણી ઓક્સાઈડ છે.

70819155322. માણેકનો લાલ રંગ (Red colour of ruby) એ Co^{3+} ની હાજરીનાં કારણે છે.

Question Number : 39 Question Id : 70819116722 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

What is the correct order of the following elements with respect to their density ?

Options :

70819155323. Cr < Fe < Co < Cu < Zn

70819155324. Zn < Cr < Fe < Co < Cu

70819155325. Zn < Cu < Co < Fe < Cr

70819155326. Cr < Zn < Co < Cu < Fe

Question Number : 39 Question Id : 70819116722 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

નીચે આપેલા તત્ત્વોને તેમની ઘનતાના સંદર્ભમાં (આધારે) (with respect) સાચો ક્રમ શું છે ?

Options :

70819155323. Cr < Fe < Co < Cu < Zn

ZOLLEGE.in

70819155324. $Zn < Cr < Fe < Co < Cu$

70819155325. $Zn < Cu < Co < Fe < Cr$

70819155326. $Cr < Zn < Co < Cu < Fe$

Question Number : 40 Question Id : 70819116723 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

The calculated magnetic moments (spin only value) for species $[FeCl_4]^{2-}$, $[Co(C_2O_4)_3]^{3-}$ and MnO_4^{2-} respectively are :

Options :

70819155327. 4.90, 0 and 1.73 BM

70819155328. 5.92, 4.90 and 0 BM

70819155329. 5.82, 0 and 0 BM

70819155330. 4.90, 0 and 2.83 BM

Question Number : 40 Question Id : 70819116723 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

$[FeCl_4]^{2-}$, $[Co(C_2O_4)_3]^{3-}$ અને MnO_4^{2-} સ્પીસીઝો માટે ગણતરી કરેલ ચુંબકીય ચાકમાત્રાઓ (ફક્ત સ્પીન મૂલ્ય) અનુક્રમે શોધો.

Options :

70819155327. 4.90, 0 અને 1.73 BM

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70819155328. 5.92, 4.90 અને 0 BM

70819155329. 5.82, 0 અને 0 BM

70819155330. 4.90, 0 અને 2.83 BM

Question Number : 41 Question Id : 70819116724 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

Given below are two statements :

Statement I : The value of the parameter "Biochemical Oxygen Demand (BOD)" is important for survival of aquatic life.

Statement II : The optimum value of BOD is 6.5 ppm.

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

Options :

70819155331. Both **Statement I** and **Statement II** are true

70819155332. Both **Statement I** and **Statement II** are false

70819155333. **Statement I** is true but **Statement II** is false

70819155334. **Statement I** is false but **Statement II** is true

Question Number : 41 Question Id : 70819116724 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

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નીચે બે વિધાનો આપેલ છે :

વિધાન I : માપદંડ (parameter) નું મૂલ્ય "જૈવ રાસાયણિક ઓક્સિજન જરૂરિયાત (BOD)" એ જળમાનાંનું જીવન ટકાવી રાખવા માટે મહત્વનું છે.

વિધાન II : BOD ની અનુકૂલત્તમ (ઈષ્ટતમ) (optimum) મૂલ્ય 6.5 ppm છે.

ઉપરનાં વિધાનોનાં સંદર્ભમાં, નીચે આપેલા વિકલ્પોમાંથી સાચો ઉત્તર પસંદ કરો.

Options :

70819155331. બંને, વિધાન I અને વિધાન II સાચાં છે.

70819155332. બંને, વિધાન I અને વિધાન II ખોટાં છે.

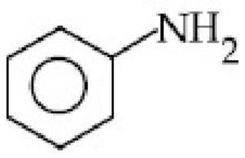
70819155333. વિધાન I સાચું છે પણ વિધાન II ખોટું છે.

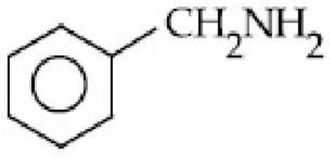
70819155334. વિધાન I ખોટું છે પણ વિધાન II સાચું છે.

Question Number : 42 Question Id : 70819116725 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

The diazonium salt of which of the following compounds will form a coloured dye on reaction with β-Naphthol in NaOH ?

Options :

70819155335. 

70819155336. 

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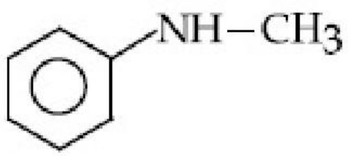
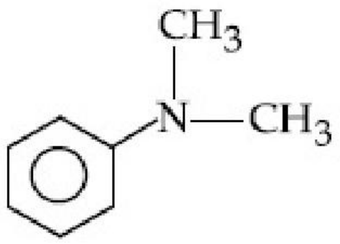
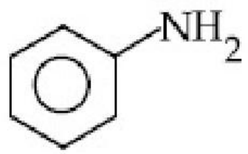
70819155337. 

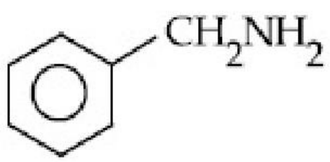
70819155338. 

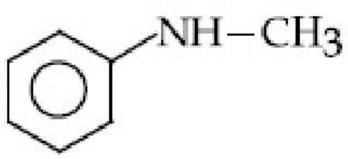
Question Number : 42 Question Id : 70819116725 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

નીચે આપેલામાંથી કયા સંયોજનનો ડાયએઝોનિયમ ક્ષાર NaOH માંના β-નેપ્થોલ સાથે પ્રક્રિયા કરીને રંગીન રંજક (Coloured dye) બનાવશે ?

Options :

70819155335. 

70819155336. 

70819155337. 

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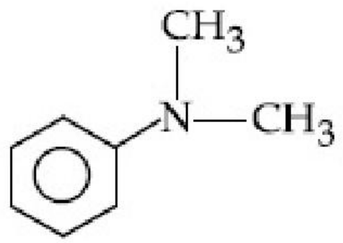
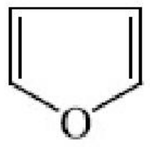
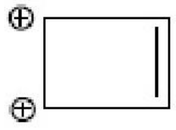
70819155338. 

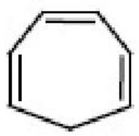
Question Number : 43 Question Id : 70819116726 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

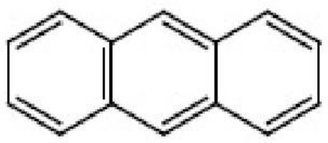
Which one of the following compounds is non-aromatic ?

Options :

70819155339. 

70819155340. 

70819155341. 

70819155342. 

Question Number : 43 Question Id : 70819116726 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

નીચે આપેલા સંયોજનોમાંથી કયો એક નોન-એરોમેટિક છે ?

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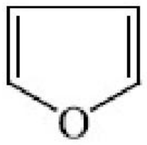
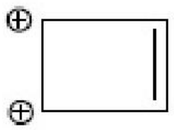
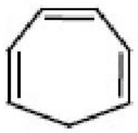
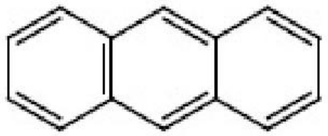
Options :

70819155339. 

70819155340. 

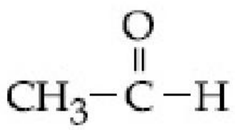
70819155341. 

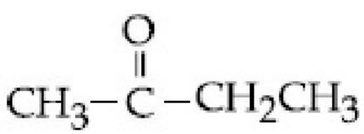
70819155342. 

Question Number : 44 Question Id : 70819116727 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

Which one of the following carbonyl compounds cannot be prepared by addition of water on an alkyne in the presence of $HgSO_4$ and H_2SO_4 ?

Options :

70819155343. 

70819155344. 

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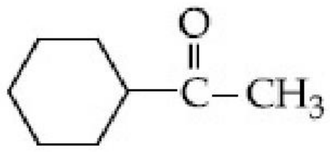
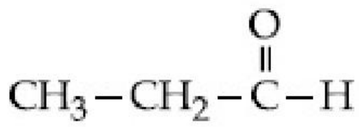
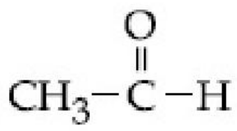
70819155345. 

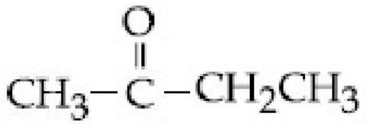
70819155346. 

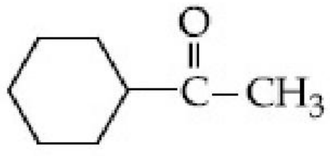
Question Number : 44 Question Id : 70819116727 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

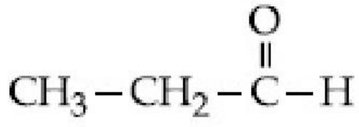
$HgSO_4$ અને H_2SO_4 ની હાજરીમાં આલ્કાઈનમાં પાણી ઉમેરવાથી નીચેનામાંથી કયા એક કાર્બોનીલ સંયોજનને બનાવી શકાતો નથી ?

Options :

70819155343. 

70819155344. 

70819155345. 

70819155346. 

Question Number : 45 Question Id : 70819116728 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

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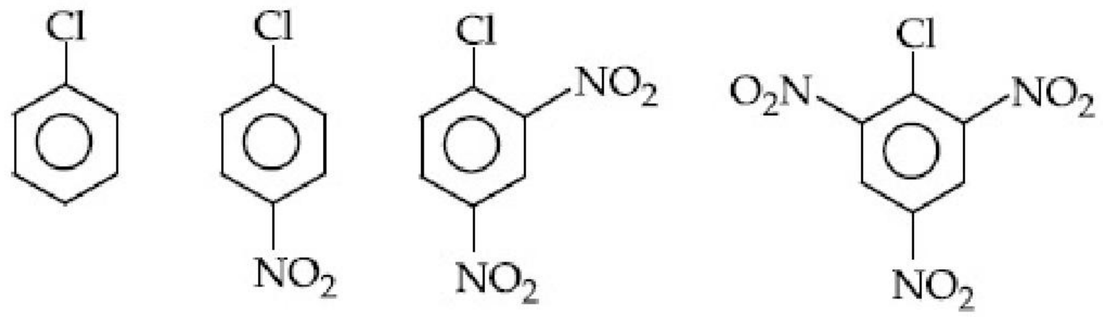
Correct Marks : 4 Wrong Marks : 1

The correct order of the following compounds showing increasing tendency towards nucleophilic substitution reaction is :



(i) (ii) (iii) (iv)

Options :

70819155347. (iv) < (iii) < (ii) < (i)

70819155348. (iv) < (i) < (iii) < (ii)

70819155349. (i) < (ii) < (iii) < (iv)

70819155350. (iv) < (i) < (ii) < (iii)

Question Number : 45 Question Id : 70819116728 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

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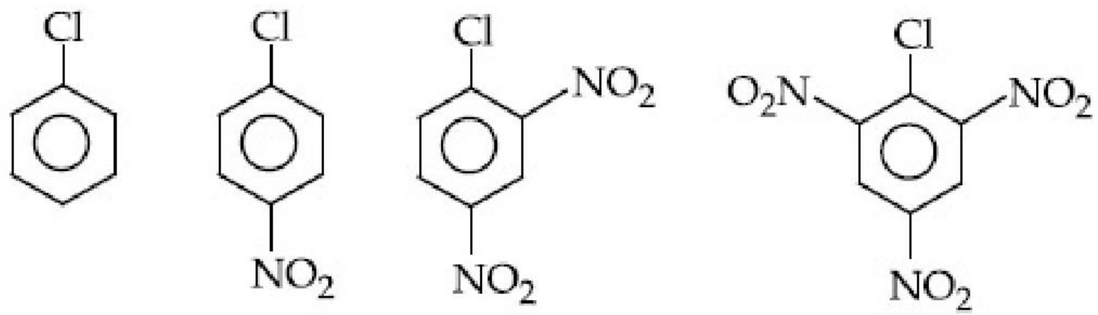
નીચે આપેલા સંયોજનોનો કેન્દ્રાનુરાગી વિસ્થાપન પ્રક્રિયા તરફના ચઢતા વલણ દર્શાવતાનો સાચો ક્રમ શોધો.



(i) (ii) (iii) (iv)

Options :

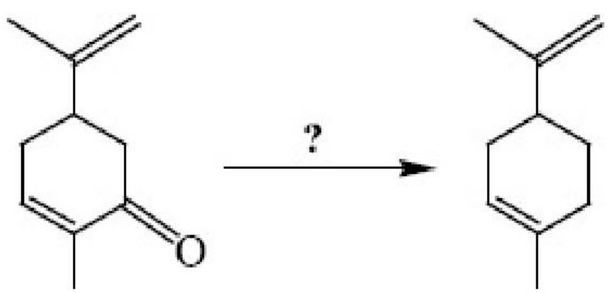
70819155347. (iv) < (iii) < (ii) < (i)

70819155348. (iv) < (i) < (iii) < (ii)

70819155349. (i) < (ii) < (iii) < (iv)

70819155350. (iv) < (i) < (ii) < (iii)

Question Number : 46 Question Id : 70819116729 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1



Which of the following reagent is suitable for the preparation of the product in the above reaction ?

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Options :

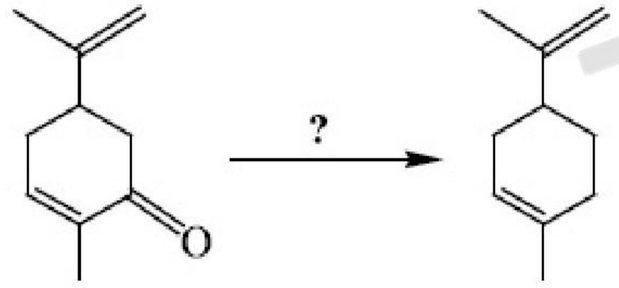
70819155351. $NaBH_4$

70819155352. $NH_2-NH_2/C_2H_5\overset{\ominus}{O}\overset{\oplus}{Na}$

70819155353. Ni/H_2

70819155354. $Red\ P+Cl_2$

Question Number : 46 Question Id : 70819116729 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1



ઉપરની પ્રક્રિયામાં નીપજ બનવા માટે નીચે આપેલામાંથી કયો પ્રક્રિયક સુસંગત છે ?

Options :

70819155351. $NaBH_4$

70819155352. $NH_2-NH_2/C_2H_5\overset{\ominus}{O}\overset{\oplus}{Na}$

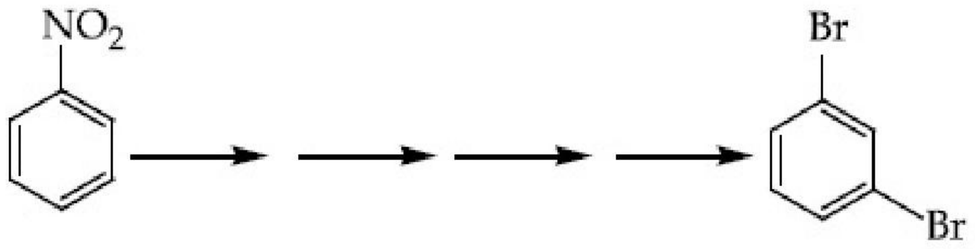
70819155353. Ni/H_2

70819155354. $Red\ P+Cl_2$

ZOLLEGE.in

Question Number : 47 Question Id : 70819116730 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

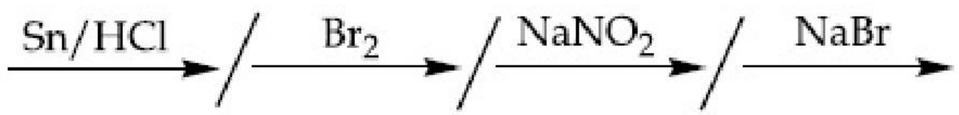
What is the correct sequence of reagents used for converting nitrobenzene into *m*-dibromobenzene ?

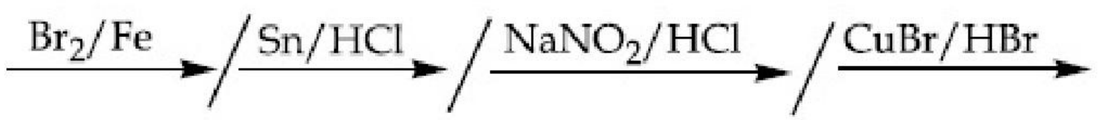


Options :

70819155355.

70819155356.

70819155357. 

70819155358. 

Question Number : 47 Question Id : 70819116730 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

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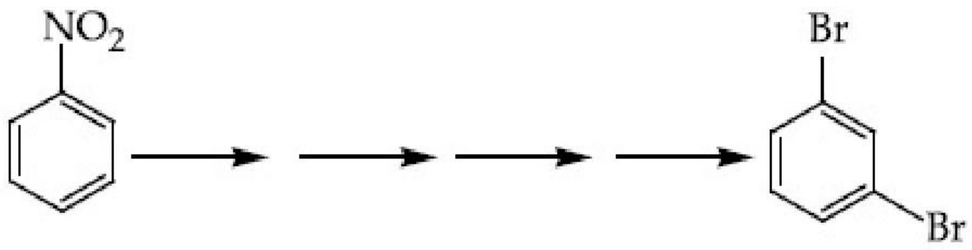
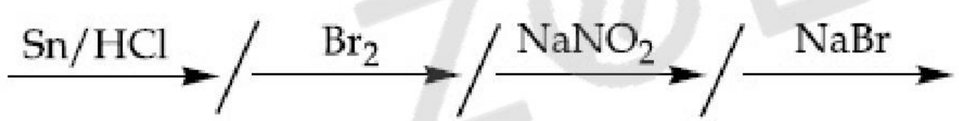
નાઈટ્રોબેન્ઝિનમાંથી *m*-ડાયબ્રોમોબેન્ઝિનમાં રૂપાંતર કરવા માટે કઈ પ્રક્રિયકો ની શ્રેણીનો ઉપયોગ કરવામાં આવે છે ?

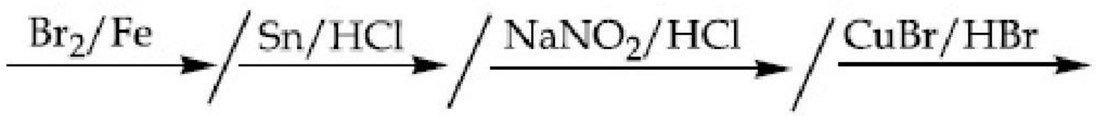


Options :

70819155355.

70819155356.

70819155357. 

70819155358. 

Question Number : 48 Question Id : 70819116731 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

In polymer Buna-S : 'S' stands for :

Options :

70819155359. Sulphur

70819155360. Strength

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70819155361. Styrene

70819155362. Sulphonation

Question Number : 48 Question Id : 70819116731 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

બ્યૂના-S બહુલકમાં 'S' નો અર્થ _____.

Options :

70819155359. સલ્ફર

70819155360. સામર્થ્ય (strength)

70819155361. સ્ટાયરીન

70819155362. સલ્ફોનેશન

Question Number : 49 Question Id : 70819116732 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

Match List - I and List - II.

	List - I		List - II
(a)	Valium	(i)	Antifertility drug
(b)	Morphine	(ii)	Pernicious anaemia
(c)	Norethindrone	(iii)	Analgesic
(d)	Vitamin B_{12}	(iv)	Tranquilizer

Options :

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70819155363. (a)-(i), (b)-(iii), (c)-(iv), (d)-(ii)

70819155364. (a)-(iv), (b)-(iii), (c)-(ii), (d)-(i)

70819155365. (a)-(iv), (b)-(iii), (c)-(i), (d)-(ii)

70819155366. (a)-(ii), (b)-(iv), (c)-(iii), (d)-(i)

Question Number : 49 Question Id : 70819116732 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

સૂચી - I અને સૂચી - II ને જોડો.

	સૂચી - I		સૂચી - II
(a)	વેલીયમ	(i)	ગર્ભનિરોધક ઔષધ
(b)	મોર્ફીન	(ii)	ઘાતક એનેમિઆ (Pernicious anaemia)
(c)	નોરએથિન્ડ્રોન	(iii)	વેદનાહર
(d)	વિટામીન B_{12}	(iv)	પ્રશાંતકો

Options :

70819155363. (a)-(i), (b)-(iii), (c)-(iv), (d)-(ii)

70819155364. (a)-(iv), (b)-(iii), (c)-(ii), (d)-(i)

70819155365. (a)-(iv), (b)-(iii), (c)-(i), (d)-(ii)

70819155366. (a)-(ii), (b)-(iv), (c)-(iii), (d)-(i)

Question Number : 50 Question Id : 70819116733 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

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Correct Marks : 4 Wrong Marks : 1

Match List - I and List - II.

List - I		List - II	
(a)	$R-\overset{\overset{O}{\|\|}}{C}-Cl \rightarrow R-CHO$	(i)	$Br_2/NaOH$
(b)	$R-CH_2-COOH \rightarrow R-\underset{\underset{Cl}{\|}}{CH}-COOH$	(ii)	$H_2/Pd-BaSO_4$
(c)	$R-\overset{\overset{O}{\|\|}}{C}-NH_2 \rightarrow R-NH_2$	(iii)	$Zn(Hg)/Conc.\ HCl$
(d)	$R-\overset{\overset{O}{\|\|}}{C}-CH_3 \rightarrow R-CH_2-CH_3$	(iv)	$Cl_2/Red\ P,\ H_2O$

Choose the correct answer from the options given below :

Options :

70819155367. (a)-(iii), (b)-(iv), (c)-(i), (d)-(ii)

70819155368. (a)-(iii), (b)-(i), (c)-(iv), (d)-(ii)

70819155369. (a)-(ii), (b)-(i), (c)-(iv), (d)-(iii)

70819155370. (a)-(ii), (b)-(iv), (c)-(i), (d)-(iii)

Question Number : 50 Question Id : 70819116733 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No
Correct Marks : 4 Wrong Marks : 1

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સૂચી - I અને સૂચી - II ને જોડો.

	સૂચી - I		સૂચી - II
(a)	$R-\overset{\overset{O}{\|\|}}{C}-Cl \rightarrow R-CHO$	(i)	$Br_2/NaOH$
(b)	$R-CH_2-COOH \rightarrow R-\underset{\underset{Cl}{\|}}{CH}-COOH$	(ii)	$H_2/Pd-BaSO_4$
(c)	$R-\overset{\overset{O}{\|\|}}{C}-NH_2 \rightarrow R-NH_2$	(iii)	$Zn(Hg)/$સાંદ્ર HCl
(d)	$R-\overset{\overset{O}{\|\|}}{C}-CH_3 \rightarrow R-CH_2-CH_3$	(iv)	$Cl_2/$લાલ P, H_2O

નીચે આપેલા વિકલ્પોમાંથી સાચો જવાબ પસંદ કરો.

Options :

70819155367. (a)-(iii), (b)-(iv), (c)-(i), (d)-(ii)

70819155368. (a)-(iii), (b)-(i), (c)-(iv), (d)-(ii)

70819155369. (a)-(ii), (b)-(i), (c)-(iv), (d)-(iii)

70819155370. (a)-(ii), (b)-(iv), (c)-(i), (d)-(iii)

Chemistry Section B

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Section Id : 708191655
Section Number : 4
Section type : Online
Mandatory or Optional : Mandatory
Number of Questions : 10
Number of Questions to be attempted : 5
Section Marks : 20
Mark As Answered Required? : Yes
Sub-Section Number : 1
Sub-Section Id : 708191935
Question Shuffling Allowed : Yes

Question Number : 51 Question Id : 70819116734 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

The formula of a gaseous hydrocarbon which requires 6 times of its own volume of O_2 for complete oxidation and produces 4 times its own volume of CO_2 is C_xH_y. The value of y is _____.

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Range
Text Areas : PlainText
Possible Answers :
5 to 5.001

Question Number : 51 Question Id : 70819116734 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

એક વાયુમય હાઈડ્રોકાર્બન કે જેના સંપૂર્ણ ઓક્સિડેશન થવા માટે પોતાના કદ કરતા 6 ગણો વધારે O_2 ની જરૂરી છે અને ત્યારબાદ તેમાંથી ઉત્પન્ન થતો CO_2 પોતાના કરતા 4 ગણું કદ ધરાવે છે તેનુ સૂત્ર C_xH_y છે. તો y નું મૂલ્ય _____ છે.

Response Type : Numeric
Evaluation Required For SA : Yes

ZOLLEGE.in

Show Word Count : Yes
Answers Type : Range
Text Areas : PlainText
Possible Answers :
5 to 5.001

Question Number : 52 Question Id : 70819116735 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

The volume occupied by 4.75 g of acetylene gas at 50°C and 740 mmHg pressure is _____ L. (Rounded off to the nearest integer)
[Given $R = 0.0826$ L atm K^{-1} mol^{-1}]

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Range
Text Areas : PlainText
Possible Answers :
5 to 5.001

Question Number : 52 Question Id : 70819116735 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

50°C અને 740 mmHg દબાણે 4.75 g એસિટીલીન વાયુ વડે રોકાતું કદ _____ L છે. (નજીકના પૂર્ણાંકમાં રાઉન્ડ ઑફ)

[આપેલ $R = 0.0826$ L atm K^{-1} mol^{-1}]

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

ZOLLEGE.in

5 to 5.001

Question Number : 53 Question Id : 70819116736 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

Assuming ideal behaviour, the magnitude of log K for the following reaction at 25°C is $x \times 10^{-1}$. The value of x is _____. (Integer answer)

$$3HC \equiv CH_{(g)} \rightleftharpoons C_6H_{6(l)}$$

[Given : $\Delta_f G^\circ(HC \equiv CH) = -2.04 \times 10^5$ J mol^{-1} ; $\Delta_f G^\circ(C_6H_6) = -1.24 \times 10^5$ J mol^{-1} ; R = 8.314 J K^{-1} mol^{-1}]

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Range
Text Areas : PlainText
Possible Answers :
5 to 5.001

Question Number : 53 Question Id : 70819116736 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

આદર્શ વર્તણુંક ધારી લો, 25°C પર નીચે આપેલ પ્રક્રિયા માટે log K ની માત્રા $x \times 10^{-1}$ છે. તો x નું મૂલ્ય _____ છે. (પૂર્ણાંકમાં જવાબ)

$$3HC \equiv CH_{(g)} \rightleftharpoons C_6H_{6(l)}$$

[આપેલ : $\Delta_f G^\circ(HC \equiv CH) = -2.04 \times 10^5$ J mol^{-1} ; $\Delta_f G^\circ(C_6H_6) = -1.24 \times 10^5$ J mol^{-1} ; R = 8.314 J K^{-1} mol^{-1}]

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

ZOLLEGE.in

Possible Answers :

5 to 5.001

Question Number : 54 Question Id : 70819116737 Question Type : SA

Correct Marks : 4 Wrong Marks : 0

C_6H_6 freezes at 5.5°C. The temperature at which a solution of 10 g of C_4H_{10} in 200 g of C_6H_6 freeze is _____ °C. (The molal freezing point depression constant of C_6H_6 is 5.12°C/m.)

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

5 to 5.001

Question Number : 54 Question Id : 70819116737 Question Type : SA

Correct Marks : 4 Wrong Marks : 0

5.5°C પર C_6H_6 ઠારણ પામે છે. તો C_4H_{10} ના 10 g નું 200 g C_6H_6 માં બનાવેલું દ્રાવણ _____°C તાપમાન પર ઠરશે. (બેન્ઝીનનો મોલલ ઠારબિંદુ અવનયન અચળાંક 5.12°C/m છે)

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

5 to 5.001

Question Number : 55 Question Id : 70819116738 Question Type : SA

Correct Marks : 4 Wrong Marks : 0

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The solubility product of PbI_2 is 8.0×10^{-9}. The solubility of lead iodide in 0.1 molar solution of lead nitrate is $x \times 10^{-6}$ mol/L. The value of x is _____. (Rounded off to the nearest integer)

[Given $\sqrt{2} = 1.41$]

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Range
Text Areas : PlainText
Possible Answers :
5 to 5.001

Question Number : 55 Question Id : 70819116738 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

PbI_2 નો દ્રાવ્યતા ગુણાકાર 8.0×10^{-9} છે. તો 0.1 મોલર લેડ નાઈટ્રેટ દ્રાવણમાં લેડ આયોડાઈડની દ્રાવ્યતા $x \times 10^{-6}$ mol/L છે. તો x નું મૂલ્ય _____ છે. (નજીકના પૂર્ણાંકમાં રાઉન્ડ ઑફ કરો)

[આપેલ $\sqrt{2} = 1.41$]

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Range
Text Areas : PlainText
Possible Answers :
5 to 5.001

Question Number : 56 Question Id : 70819116739 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

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The magnitude of the change in oxidising power of the MnO_4^-/Mn^{2+} couple is $x \times 10^{-4}$ V, if the H^+ concentration is decreased from 1 M to 10^{-4} M at 25°C. (Assume concentration of MnO_4^- and Mn^{2+} to be same on change in H^+ concentration). The value of x is _____. (Rounded off to the nearest integer)

$$\left[\text{Given : } \frac{2.303\,RT}{F} = 0.059\right]$$

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Range
Text Areas : PlainText
Possible Answers :
5 to 5.001

Question Number : 56 Question Id : 70819116739 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

25°C પર જો H^+ આયનની સાંદ્રતા 1 M થી 10^{-4} M માં ઘટેલ હોય તો MnO_4^-/Mn^{2+} જોડીમાં ઓક્સિડાઈઝીંગ પાવર (શક્તિ) માં ફેરફારની માત્રા $x \times 10^{-4}$ V છે. (ધારી લો કે H^+ ની સાંદ્રતા માં ફેરબદલ થતા MnO_4^- અને Mn^{2+} ની સાંદ્રતા સમાન રહે છે) તો x નું મૂલ્ય _____ છે. (નજીકના પૂર્ણાંકમાં રાઉન્ડ ઑફ કરો)

$$\left[\text{આપેલ: } \frac{2.303\,RT}{F} = 0.059\right]$$

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Range
Text Areas : PlainText
Possible Answers :
5 to 5.001

ZOLLEGE.in

Question Number : 57 Question Id : 70819116740 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

Sucrose hydrolyses in acid solution into glucose and fructose following first order rate law with a half-life of 3.33 h at 25°C. After 9 h, the fraction of sucrose remaining is f. The value of $\log_{10}\left(\frac{1}{f}\right)$ is _____ $\times 10^{-2}$. (Rounded off to the nearest integer)

[Assume : ln 10 = 2.303, ln 2 = 0.693]

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Range
Text Areas : PlainText
Possible Answers :
5 to 5.001

Question Number : 57 Question Id : 70819116740 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

25°C પર 3.33 h અર્ધ-આયુષ્ય સાથે, સુક્રોઝ એસિડ દ્રાવણમાં ગ્લુકોઝ અને ફ્રૂકટોઝમાં જળવિભાજન પામે છે જે પ્રથમ ક્રમ વેગ નિયમને અનુસરે છે. 9 h પછી, સુક્રોઝનો અંશ f બાકી રહે છે. તો $\log_{10}\left(\frac{1}{f}\right)$ નું મૂલ્ય _____ $\times 10^{-2}$ છે. (નજીકના પૂર્ણાંકમાં રાઉન્ડ ઑફ) (ધારી લો : ln 10 = 2.303, ln 2 = 0.693)

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

ZOLLEGE.in

5 to 5.001

Question Number : 58 Question Id : 70819116741 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

Among the following allotropic forms of sulphur, the number of allotropic forms, which will show paramagnetism is _____.

(A) α-sulphur (B) β-sulphur (C) S_2-form

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Range
Text Areas : PlainText
Possible Answers :
5 to 5.001

Question Number : 58 Question Id : 70819116741 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

નીચે આપેલા સલ્ફરનાં બનતાં અપરરૂપો પૈકી, કે જે અનુચુંબકીયતા પ્રદર્શિત કરે છે તે અપરરૂપોની સંખ્યા _____ છે.

(A) α-સલ્ફર (B) β-સલ્ફર (C) S_2-સ્વરૂપ

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Range
Text Areas : PlainText
Possible Answers :
5 to 5.001

Question Number : 59 Question Id : 70819116742 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

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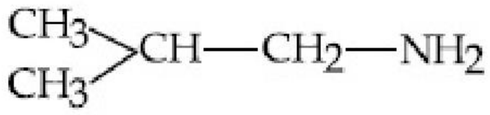
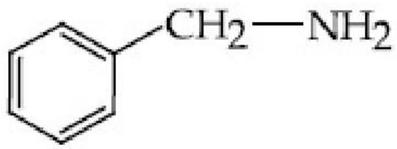
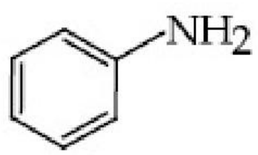
The total number of amines among the following which can be synthesized by Gabriel synthesis is _____.

(A) 

(B) $CH_3CH_2NH_2$

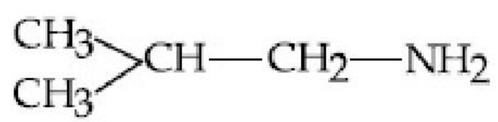
(C) 

(D) 

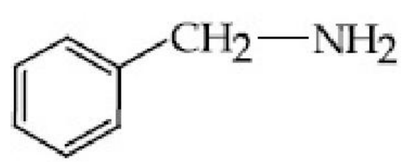
Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Range
Text Areas : PlainText
Possible Answers :
5 to 5.001

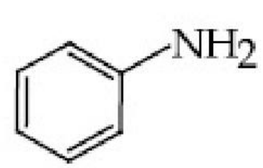
Question Number : 59 Question Id : 70819116742 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

ગ્રેબીયલ સંશ્લેષણ દ્વારા સાંશ્લેષિત કરી શકાય તેવા નીચે આપેલા એમાઈનોની કુલ સંખ્યા _____ છે.

(A) 

(B) $CH_3CH_2NH_2$

(C) 

(D) 

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

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5 to 5.001

Question Number : 60 Question Id : 70819116743 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

1.86 g of aniline completely reacts to form acetanilide. 10% of the product is lost during purification. Amount of acetanilide obtained after purification (in g) is _____ $\times 10^{-2}$.

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Range
Text Areas : PlainText
Possible Answers :
5 to 5.001

Question Number : 60 Question Id : 70819116743 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

1.86 g એનિલીનની સંપૂર્ણ પ્રક્રિયા થઈને તે એસેટીનીલાઈડ બનાવે છે. શુધ્ધિકરણ દરમ્યાન 10% નીપજમાં નુકશાન થાય છે. શુધ્ધિકરણ બાદ મળતો એસેટીનીલાઈડનો જથ્થો (g માં) _____ $\times 10^{-2}$ છે.

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Range
Text Areas : PlainText
Possible Answers :
5 to 5.001

Mathematics Section A

Section Id : 708191656
Section Number : 5

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Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	20
Number of Questions to be attempted :	20
Section Marks :	80
Mark As Answered Required? :	Yes
Sub-Section Number :	1
Sub-Section Id :	708191936
Question Shuffling Allowed :	Yes

Question Number : 61 Question Id : 70819116744 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No
Correct Marks : 4 Wrong Marks : 1

Let $a, b \in \mathbf{R}$. If the mirror image of the point P(a, 6, 9) with respect to the line $\frac{x-3}{7} = \frac{y-2}{5} = \frac{z-1}{-9}$ is $(20, b, -a-9)$, then $|a+b|$ is equal to :

Options :

70819155381. 84

70819155382. 86

70819155383. 88

70819155384. 90

Question Number : 61 Question Id : 70819116744 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No
Correct Marks : 4 Wrong Marks : 1

ધારોકે $a, b \in \mathbf{R}$. જો રેખા $\frac{x-3}{7} = \frac{y-2}{5} = \frac{z-1}{-9}$ ની સાપેક્ષે બિંદુ P(a, 6, 9) નું પ્રતિબિંબ $(20, b, -a-9)$ હોય, તો $|a+b| =$ _____.

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Options :

70819155381. 84

70819155382. 86

70819155383. 88

70819155384. 90

Question Number : 62 Question Id : 70819116745 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

Let a, b, c be in arithmetic progression. Let the centroid of the triangle with vertices (a, c), (2, b) and (a, b) be $\left(\frac{10}{3}, \frac{7}{3}\right)$. If α, β are the roots of the equation $ax^2+bx+1=0$, then the value of $\alpha^2+\beta^2-\alpha\beta$ is :

Options :

70819155385. $-\frac{69}{256}$

70819155386. $-\frac{71}{256}$

70819155387. $\frac{69}{256}$

70819155388. $\frac{71}{256}$

ZOLLEGE.in

Question Number : 62 Question Id : 70819116745 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

ધારોકે a, b, c સમાંતર શ્રેણીમાં છે. ધારો કે (a, c), (2, b) અને (a, b) શિરોબિંદુવાળા ત્રિકોણનું મધ્યકેન્દ્ર $\left(\frac{10}{3}, \frac{7}{3}\right)$ છે.

જો સમીકરણ $ax^2+bx+1=0$ નાં બીજ α, β હોય, તો $\alpha^2+\beta^2-\alpha\beta$ નું મૂલ્ય _____ છે.

Options :

70819155385. $-\frac{69}{256}$

70819155386. $-\frac{71}{256}$

70819155387. $\frac{69}{256}$

70819155388. $\frac{71}{256}$

Question Number : 63 Question Id : 70819116746 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

If P is a point on the parabola $y=x^2+4$ which is closest to the straight line $y=4x-1$, then the co-ordinates of P are :

Options :

70819155389. $(3, 13)$

70819155390. $(2, 8)$

ZOLLEGE.in

70819155391. $(-2, 8)$

70819155392. $(1, 5)$

Question Number : 63 Question Id : 70819116746 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

જો રેખા $y=4x-1$ ની સૌથી નજીક આવેલું પરવલય $y=x^2+4$ પરનું બિંદુ P હોય, તો P ના યામ _____ છે.

Options :

70819155389. $(3, 13)$

70819155390. $(2, 8)$

70819155391. $(-2, 8)$

70819155392. $(1, 5)$

Question Number : 64 Question Id : 70819116747 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

For which of the following curves, the line $x+\sqrt{3}y=2\sqrt{3}$ is the tangent at the point $\left(\frac{3\sqrt{3}}{2}, \frac{1}{2}\right)$?

Options :

70819155393. $x^2+y^2=7$

ZOLLEGE.in

70819155394. $x^2+9y^2=9$

70819155395. $y^2=\frac{1}{6\sqrt{3}}x$

70819155396. $2x^2-18y^2=9$

Question Number : 64 Question Id : 70819116747 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

રેખા $x+\sqrt{3}y=2\sqrt{3}$ એ નીચેના પૈકી કયા વક્રનો બિંદુ $\left(\frac{3\sqrt{3}}{2}, \frac{1}{2}\right)$ આગળનો સ્પર્શક બને ?

Options :

70819155393. $x^2+y^2=7$

70819155394. $x^2+9y^2=9$

70819155395. $y^2=\frac{1}{6\sqrt{3}}x$

70819155396. $2x^2-18y^2=9$

Question Number : 65 Question Id : 70819116748 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

ZOLLEGE.in

The value of the integral, $\int_{1}^{3}[x^2-2x-2]dx$, where $[x]$ denotes the greatest integer less than or equal to x, is :

Options :

70819155397. -5

70819155398. -4

70819155399. $-\sqrt{2}-\sqrt{3}-1$

70819155400. $-\sqrt{2}-\sqrt{3}+1$

Question Number : 65 Question Id : 70819116748 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

$\int_{1}^{3}[x^2-2x-2]dx$ નું મૂલ્ય _____ છે, જ્યાં $[x]$ એ x કે તેથી નાનો મહત્તમ પૂર્ણાંક દર્શાવે છે.

Options :

70819155397. -5

70819155398. -4

70819155399. $-\sqrt{2}-\sqrt{3}-1$

70819155400. $-\sqrt{2}-\sqrt{3}+1$

ZOLLEGE.in

Question Number : 66 Question Id : 70819116749 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

The negation of the statement

$\sim p \wedge (p \vee q)$ is :

Options :

70819155401. $\sim p \vee q$

70819155402. $\sim p \wedge q$

70819155403. $p \wedge \sim q$

70819155404. $p \vee \sim q$

Question Number : 66 Question Id : 70819116749 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

વિધાન $\sim p \wedge (p \vee q)$ નું નિષેધ _____ છે.

Options :

70819155401. $\sim p \vee q$

70819155402. $\sim p \wedge q$

70819155403. $p \wedge \sim q$

70819155404. $p \vee \sim q$

Question Number : 67 Question Id : 70819116750 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

ZOLLEGE.in

Correct Marks : 4 Wrong Marks : 1

Let A and B be 3×3 real matrices such that A is symmetric matrix and B is skew-symmetric matrix. Then the system of linear equations $(A^2B^2 - B^2A^2)\,X = O$, where X is a 3×1 column matrix of unknown variables and O is a 3×1 null matrix, has :

Options :

70819155405. no solution

70819155406. a unique solution

70819155407. exactly two solutions

70819155408. infinitely many solutions

Question Number : 67 Question Id : 70819116750 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

ધારોકે A અને B એ એવા 3×3 ના વાસ્તવિક શ્રેણીકો છે કે જ્યાં A સંમિત શ્રેણિક અને B વિસંમિત શ્રેણિક છે. તો સુરેખ સમીકરણ સંહતિ $(A^2B^2 - B^2A^2)\,X = O$, ને _____.

(જ્યાં X એ અજ્ઞાત ચલનો 3×1 નો સ્તંભ શ્રેણિક અને O એ 3×1 નો શૂન્ય શ્રેણિક છે)

Options :

70819155405. ઉકેલ નથી

70819155406. અનન્ય ઉકેલ છે

70819155407. બરાબર બે ઉકેલો છે

70819155408. અસંખ્ય ઉકેલો છે

ZOLLEGE.in

Question Number : 68 Question Id : 70819116751 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

Let $f(x)$ be a differentiable function defined on $[0, 2]$ such that $f'(x) = f'(2-x)$ for all $x \in (0, 2)$, $f(0) = 1$ and $f(2) = e^2$. Then the value of $\int_0^2 f(x)\,dx$ is :

Options :

70819155409. $1 - e^2$

70819155410. $1 + e^2$

70819155411. $2(1 + e^2)$

70819155412. $2(1 - e^2)$

Question Number : 68 Question Id : 70819116751 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

ધારોકે $f(x)$ એ $[0, 2]$ પર વ્યાખ્યાયિત એવું વિકલનીય વિધેય છે કે જેથી પ્રત્યેક $x \in (0, 2)$ માટે $f'(x) = f'(2-x)$, $f(0) = 1$ અને $f(2) = e^2$ થાય. તો $\int_0^2 f(x)\,dx$ નું મૂલ્ય _____ છે.

Options :

70819155409. $1 - e^2$

70819155410. $1 + e^2$

70819155411. $2(1 + e^2)$

ZOLLEGE.in

70819155412. $2(1-e^2)$

Question Number : 69 Question Id : 70819116752 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

Let f be a twice differentiable function defined on **R** such that $f(0)=1$, $f'(0)=2$ and $f'(x) \neq 0$ for all $x \in$ **R**. If $\begin{vmatrix} f(x) & f'(x) \\ f'(x) & f''(x) \end{vmatrix} = 0$, for all $x \in$ **R**, then the value of $f(1)$ lies in the interval :

Options :

70819155413. $(0, 3)$

70819155414. $(3, 6)$

70819155415. $(6, 9)$

70819155416. $(9, 12)$

Question Number : 69 Question Id : 70819116752 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

ધારોકે f એ **R** પર વ્યાખ્યાયિત એવું દ્વિ-વિકલનીય વિધેય છે કે જેથી $f(0)=1$, $f'(0)=2$ અને પ્રત્યેક $x \in$ **R** માટે $f'(x) \neq 0$ છે. જો પ્રત્યેક $x \in$ **R** માટે $\begin{vmatrix} f(x) & f'(x) \\ f'(x) & f''(x) \end{vmatrix} = 0$ હોય, તો $f(1)$ નું મૂલ્ય _____ અંતરાલમાં આવેલ છે.

Options :

70819155413. $(0, 3)$

ZOLLEGE.in

70819155414. $(3, 6)$

70819155415. $(6, 9)$

70819155416. $(9, 12)$

Question Number : 70 Question Id : 70819116753 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

If the curve $y = ax^2 + bx + c$, $x \in \mathbf{R}$, passes through the point (1, 2) and the tangent line to this curve at origin is $y = x$, then the possible values of a, b, c are :

Options :

70819155417. $a = 1,\ b = 1,\ c = 0$

70819155418. $a = 1,\ b = 0,\ c = 1$

70819155419. $a = -1,\ b = 1,\ c = 1$

70819155420. $a = \frac{1}{2},\ b = \frac{1}{2},\ c = 1$

Question Number : 70 Question Id : 70819116753 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

જો વક્ર $y = ax^2 + bx + c$, $x \in \mathbf{R}$ બિંદુ (1, 2) માંથી પસાર થાય અને ઊગમબિંદુ એ આ વક્રને સ્પર્શક રેખા $y = x$ હોય, તો a, b, c ની શક્ય કિંમતો _____ છે.

Options :

70819155417. $a = 1,\ b = 1,\ c = 0$

ZOLLEGE.in

70819155418. $a=1,\ b=0,\ c=1$

70819155419. $a=-1,\ b=1,\ c=1$

70819155420. $a=\frac{1}{2},\ b=\frac{1}{2},\ c=1$

Question Number : 71 Question Id : 70819116754 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

If $n \geq 2$ is a positive integer, then the sum of the series

$^{n+1}C_2+2\left(^2C_2+\ ^3C_2+\ ^4C_2+....+\ ^nC_2\right)$ is :

Options :

70819155421. $\frac{n(n-1)(2n+1)}{6}$

70819155422. $\frac{n(n+1)(2n+1)}{6}$

70819155423. $\frac{n(2n+1)(3n+1)}{6}$

70819155424. $\frac{n(n+1)^2(n+2)}{12}$

Question Number : 71 Question Id : 70819116754 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

ZOLLEGE.in

જો $n \geq 2$ એ ધન પૂર્ણાંક હોય, તો શ્રેઢી ${}^{n+1}C_2 + 2\left({}^2C_2 + {}^3C_2 + {}^4C_2 + ... + {}^nC_2\right)$ નો સરવાળો _____ છે.

Options :

70819155421. $\frac{n(n-1)(2n+1)}{6}$

70819155422. $\frac{n(n+1)(2n+1)}{6}$

70819155423. $\frac{n(2n+1)(3n+1)}{6}$

70819155424. $\frac{n(n+1)^2(n+2)}{12}$

Question Number : 72 Question Id : 70819116755 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

For the system of linear equations :

$x - 2y = 1,\ x - y + kz = -2,\ ky + 4z = 6,\ k \in \mathbb{R}$,

consider the following statements :

(A) The system has unique solution if $k \neq 2, k \neq -2$.

(B) The system has unique solution if $k = -2$.

(C) The system has unique solution if $k = 2$.

(D) The system has no-solution if $k = 2$.

(E) The system has infinite number of solutions if $k \neq -2$.

Which of the following statements are correct ?

Options :

ZOLLEGE.in

70819155425. (A) and (D) only

70819155426. (A) and (E) only

70819155427. (C) and (D) only

70819155428. (B) and (E) only

Question Number : 72 Question Id : 70819116755 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

સુરેખ સમીકરણ સંહતિ $x-2y=1,\ x-y+kz=-2,\ ky+4z=6,\ k\in \mathbf{R}$, માટે નીચેના વિધાનો આપેલ છે :

(A) જો $k\neq 2,\ k\neq -2$ તો સંહતિને અનન્ય ઉકેલ છે.

(B) જો $k=-2$ તો સંહતિને અનન્ય ઉકેલ છે.

(C) જો $k=2$ તો સંહતિને અનન્ય ઉકેલ છે.

(D) જો $k=2$ તો સંહતિને ઉકેલ નથી.

(E) જો $k\neq -2$ તો સંહતિને અસંખ્ય ઉકેલો છે.

નીચેના પૈકી કયાં વિધાનો સત્ય છે ?

Options :

70819155425. માત્ર (A) અને (D)

70819155426. માત્ર (A) અને (E)

70819155427. માત્ર (C) અને (D)

70819155428. માત્ર (B) અને (E)

ZOLLEGE.in

Question Number : 73 Question Id : 70819116756 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

Let $f : \mathbf{R} \to \mathbf{R}$ be defined as

$$f(x) = \begin{cases} -55x, & \text{if } x < -5 \\ 2x^3 - 3x^2 - 120x, & \text{if } -5 \le x \le 4 \\ 2x^3 - 3x^2 - 36x - 336, & \text{if } x > 4, \end{cases}$$

Let A = $\{x \in \mathbf{R} : f \text{ is increasing}\}$. Then A is equal to :

Options :

70819155429. $(-\infty, -5) \cup (4, \infty)$

70819155430. $(-5, -4) \cup (4, \infty)$

70819155431. $(-\infty, -5) \cup (-4, \infty)$

70819155432. $(-5, \infty)$

Question Number : 73 Question Id : 70819116756 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

ધારોકે $f : \mathbf{R} \to \mathbf{R}$ નીચે પ્રમાણે વ્યાખ્યાયિત છે.

$$f(x) = \begin{cases} -55x, & \text{જો } x < -5 \\ 2x^3 - 3x^2 - 120x, & \text{જો } -5 \le x \le 4 \\ 2x^3 - 3x^2 - 36x - 336, & \text{જો } x > 4. \end{cases}$$

જો A = $\{x \in \mathbf{R} : f$ એ વધતુ વિધેય છે$\}$, તો A = _____.

ZOLLEGE.in

Options :

70819155429. $(-\infty, -5) \cup (4, \infty)$

70819155430. $(-5, -4) \cup (4, \infty)$

70819155431. $(-\infty, -5) \cup (-4, \infty)$

70819155432. $(-5, \infty)$

Question Number : 74 Question Id : 70819116757 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

A possible value of $\tan\left(\frac{1}{4}\sin^{-1}\frac{\sqrt{63}}{8}\right)$ is :

Options :

70819155433. $\frac{1}{\sqrt{7}}$

70819155434. $\frac{1}{2\sqrt{2}}$

70819155435. $\sqrt{7} - 1$

70819155436. $2\sqrt{2} - 1$

Question Number : 74 Question Id : 70819116757 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

ZOLLEGE.in

$\tan\left(\frac{1}{4}\sin^{-1}\frac{\sqrt{63}}{8}\right)$ની શક્ય કિંમત _____ છે.

Options :

70819155433. $\frac{1}{\sqrt{7}}$

70819155434. $\frac{1}{2\sqrt{2}}$

70819155435. $\sqrt{7}-1$

70819155436. $2\sqrt{2}-1$

Question Number : 75 Question Id : 70819116758 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

The angle of elevation of a jet plane from a point A on the ground is 60°. After a flight of 20 seconds at the speed of 432 km/hour, the angle of elevation changes to 30°. If the jet plane is flying at a constant height, then its height is :

Options :

70819155437. $3600\sqrt{3}$ m

70819155438. $2400\sqrt{3}$ m

70819155439. $1800\sqrt{3}$ m

ZOLLEGE.in

70819155440. $1200\sqrt{3}$ m

Question Number : 75 Question Id : 70819116758 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

મેદાનના એક બિંદુ A થી જેટ વિમાનનો ઉત્સેધકોણ $60°$ છે. 432 કિમી/કલાક ની ઝડપે 20 સેકન્ડની ઉડાન પછી તે ઉત્સેધકોણ બદલાઇને $30°$ થાય છે. જો જેટ વિમાન અચળ ઊંચાઈએ ઉડતું હોય, તો તેની ઊંચાઈ _____ છે.

Options :

70819155437. $3600\sqrt{3}$ મીટર

70819155438. $2400\sqrt{3}$ મીટર

70819155439. $1800\sqrt{3}$ મીટર

70819155440. $1200\sqrt{3}$ મીટર

Question Number : 76 Question Id : 70819116759 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

The vector equation of the plane passing through the intersection of the planes $\vec{r}\cdot\left(\hat{i}+\hat{j}+\hat{k}\right)=1$ and $\vec{r}\cdot\left(\hat{i}-2\hat{j}\right)=-2$, and the point (1, 0, 2) is :

Options :

70819155441. $\vec{r}\cdot\left(3\hat{i}+7\hat{j}+3\hat{k}\right)=7$

70819155442. $\vec{r}\cdot\left(\hat{i}+7\hat{j}+3\hat{k}\right)=7$

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70819155443. $\vec{r}\cdot\left(\hat{i}-7\hat{j}+3\hat{k}\right)=\frac{7}{3}$

70819155444. $\vec{r}\cdot\left(\hat{i}+7\hat{j}+3\hat{k}\right)=\frac{7}{3}$

Question Number : 76 Question Id : 70819116759 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

સમતલો $\vec{r}\cdot\left(\hat{i}+\hat{j}+\hat{k}\right)=1$ અને $\vec{r}\cdot\left(\hat{i}-2\hat{j}\right)=-2$ ના છેદમાંથી તથા બિંદુ $(1, 0, 2)$ માંથી પસાર થતા, સમતલનું સદિશ સમીકરણ _____ છે.

Options :

70819155441. $\vec{r}\cdot\left(3\hat{i}+7\hat{j}+3\hat{k}\right)=7$

70819155442. $\vec{r}\cdot\left(\hat{i}+7\hat{j}+3\hat{k}\right)=7$

70819155443. $\vec{r}\cdot\left(\hat{i}-7\hat{j}+3\hat{k}\right)=\frac{7}{3}$

70819155444. $\vec{r}\cdot\left(\hat{i}+7\hat{j}+3\hat{k}\right)=\frac{7}{3}$

Question Number : 77 Question Id : 70819116760 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

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For the statements p and q, consider the following compound statements :

(a) $(\sim q \wedge (p \rightarrow q)) \rightarrow \sim p$

(b) $((p \vee q) \wedge \sim p) \rightarrow q$

Then which of the following statements is correct ?

Options :

70819155445. (a) is a tautology but not (b).

70819155446. (b) is a tautology but not (a).

70819155447. (a) and (b) both are tautologies.

70819155448. (a) and (b) both are not tautologies.

Question Number : 77 Question Id : 70819116760 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

વિધાન p અને q માટે નીચેના સંયુક્ત વિધાનો આપેલ છે :

(a) $(\sim q \wedge (p \rightarrow q)) \rightarrow \sim p$

(b) $((p \vee q) \wedge \sim p) \rightarrow q$

તો નીચેના પૈકી કયું વિધાન સત્ય છે ?

Options :

70819155445. (a) નિત્ય સત્ય છે પરંતુ (b) નથી.

70819155446. (b) નિત્ય સત્ય છે પરંતુ (a) નથી.

70819155447. (a) અને (b) બંને નિત્ય સત્ય છે.

70819155448. (a) અને (b) બંને નિત્ય સત્ય નથી.

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Question Number : 78 Question Id : 70819116761 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

If a curve $y=f(x)$ passes through the point (1, 2) and satisfies $x\frac{dy}{dx} + y = bx^4$, then for what value of b, $\int_1^2 f(x)dx = \frac{62}{5}$?

Options :

70819155449. 10

70819155450. $\frac{31}{5}$

70819155451. 5

70819155452. $\frac{62}{5}$

Question Number : 78 Question Id : 70819116761 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

જો વક્ર $y=f(x)$ એ બિંદુ (1, 2) માંથી પસાર થાય અને $x\frac{dy}{dx} + y = bx^4$ નું સમાધાન કરે, તો b ના કયા મૂલ્ય માટે $\int_1^2 f(x)dx = \frac{62}{5}$ થાય ?

Options :

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70819155449. 10

70819155450. $\frac{31}{5}$

70819155451. 5

70819155452. $\frac{62}{5}$

Question Number : 79 Question Id : 70819116762 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

The probability that two randomly selected subsets of the set {1, 2, 3, 4, 5} have exactly two elements in their intersection, is :

Options :

70819155453. $\frac{65}{2^7}$

70819155454. $\frac{65}{2^8}$

70819155455. $\frac{135}{2^9}$

70819155456. $\frac{35}{2^7}$

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Question Number : 79 Question Id : 70819116762 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

ગણ {1, 2, 3, 4, 5} ના યાદચ્છિક રીતે પસંદ કરેલ બે ઉપગણોના છેદગણમાં બરાબર બે જ ઘટકો હોય તેની સંભાવના _____ છે.

Options :

70819155453. $\frac{65}{2^7}$

70819155454. $\frac{65}{2^8}$

70819155455. $\frac{135}{2^9}$

70819155456. $\frac{35}{2^7}$

Question Number : 80 Question Id : 70819116763 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

The area of the region : $R = \{(x, y) : 5x^2 \leq y \leq 2x^2 + 9\}$ is :

Options :

70819155457. $6\sqrt{3}$ square units

70819155458. $9\sqrt{3}$ square units

70819155459. $11\sqrt{3}$ square units

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70819155460. $12\sqrt{3}$ square units

Question Number : 80 Question Id : 70819116763 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

પ્રદેશ $R = \{(x, y) : 5x^2 \leq y \leq 2x^2 + 9\}$ નું ક્ષેત્રફળ _____ છે.

Options :

70819155457. $6\sqrt{3}$ ચો. એકમ

70819155458. $9\sqrt{3}$ ચો. એકમ

70819155459. $11\sqrt{3}$ ચો. એકમ

70819155460. $12\sqrt{3}$ ચો. એકમ

Mathematics Section B

Section Id :	708191657
Section Number :	6
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	10
Number of Questions to be attempted :	5
Section Marks :	20
Mark As Answered Required? :	Yes
Sub-Section Number :	1
Sub-Section Id :	708191937
Question Shuffling Allowed :	Yes

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Question Number : 81 Question Id : 70819116764 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

If the variance of 10 natural numbers 1, 1, 1, ..., 1, k is less than 10, then the maximum possible value of k is _____.

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Range
Text Areas : PlainText
Possible Answers :
5 to 5.001

Question Number : 81 Question Id : 70819116764 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

જો 10 પ્રાકૃતિક સંખ્યાઓ 1, 1, 1, ..., 1, k નું વિચરણ 10 કરતા ઓછું હોય, તો k ની શક્ય મહત્તમ કિંમત _____ છે.

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Range
Text Areas : PlainText
Possible Answers :
5 to 5.001

Question Number : 82 Question Id : 70819116765 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

Let a point P be such that its distance from the point (5, 0) is thrice the distance of P from the point $(-5, 0)$. If the locus of the point P is a circle of radius r, then $4r^2$ is equal to _____.

Response Type : Numeric
Evaluation Required For SA : Yes

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Show Word Count : Yes
Answers Type : Range
Text Areas : PlainText
Possible Answers :
5 to 5.001

Question Number : 82 Question Id : 70819116765 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

P એક એવું બિંદુ છે કે જેનું, બિંદુ $(5, 0)$ થી અંતર, એ P ના બિંદુ $(-5, 0)$ થી અંતર કરતાં ત્રણ ઘણું છે. જો બિંદુ P નો બિંદુ પથ એ r ત્રિજ્યાવાળુ વર્તુળ હોય, તો $4r^2 =$ _____.

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Range
Text Areas : PlainText
Possible Answers :
5 to 5.001

Question Number : 83 Question Id : 70819116766 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

If the area of the triangle formed by the positive x-axis, the normal and the tangent to the circle $(x-2)^2+(y-3)^2=25$ at the point (5, 7) is A, then 24A is equal to _____.

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Range
Text Areas : PlainText
Possible Answers :
5 to 5.001

Question Number : 83 Question Id : 70819116766 Question Type : SA

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Correct Marks : 4 Wrong Marks : 0

જો ધન x-અક્ષ તથા વર્તુળ $(x-2)^2+(y-3)^2=25$ ના $(5, 7)$ બિંદુએ અભિલંબ અને સ્પર્શકથી બનતા ત્રિકોણનું ક્ષેત્રફળ A હોય, તો $24A =$ _____.

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Range
Text Areas : PlainText
Possible Answers :
5 to 5.001

Question Number : 84 Question Id : 70819116767 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

Let $i=\sqrt{-1}$. If $\dfrac{\left(-1+i\sqrt{3}\right)^{21}}{(1-i)^{24}}+\dfrac{\left(1+i\sqrt{3}\right)^{21}}{(1+i)^{24}}=k$, and $n=[|k|]$ be the greatest integral part of $|k|$. Then $\sum_{j=0}^{n+5}(j+5)^2-\sum_{j=0}^{n+5}(j+5)$ is equal to _____.

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Range
Text Areas : PlainText
Possible Answers :
5 to 5.001

Question Number : 84 Question Id : 70819116767 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

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ધારોકે $i=\sqrt{-1}$ છે, જો $\frac{\left(-1+i\sqrt{3}\right)^{21}}{(1-i)^{24}}+\frac{\left(1+i\sqrt{3}\right)^{21}}{(1+i)^{24}}=k$ અને $n=[|k|]$ એ $|k|$ ની મહત્તમ પૂર્ણાંક ભાગ

હોય,તો $\sum_{j=0}^{n+5}(j+5)^2-\sum_{j=0}^{n+5}(j+5)=$_____.

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Range
Text Areas : PlainText
Possible Answers :
5 to 5.001

Question Number : 85 Question Id : 70819116768 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

The students $S_1, S_2, \ldots, S_{10}$ are to be divided into 3 groups A, B and C such that each group has at least one student and the group C has at most 3 students. Then the total number of possibilities of forming such groups is _____.

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Range
Text Areas : PlainText
Possible Answers :
5 to 5.001

Question Number : 85 Question Id : 70819116768 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

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વિદ્યાર્થીઓ $S_1, S_2, \ldots, S_{10}$ ને ત્રણ જૂથો A, B અને C માં એવી રીતે વિભાજીત કરવામાં આવે છે, કે જેથી દરેક જૂથમાં ઓછામાં ઓછો એક વિદ્યાર્થી હોય અને જૂથ C માં વધુમાં વધુ 3 વિદ્યાર્થી હોય, તો આવા જૂથ રચવાની શક્યતાઓની સંખ્યા _____ છે.

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Range
Text Areas : PlainText
Possible Answers :
5 to 5.001

Question Number : 86 Question Id : 70819116769 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

For integers n and r, let $\binom{n}{r} = \begin{cases} {}^{n}C_{r}, & \text{if } n \geq r \geq 0 \\ 0, & \text{otherwise} \end{cases}$

The maximum value of k for which the sum

$$\sum_{i=0}^{k}\binom{10}{i}\binom{15}{k-i}+\sum_{i=0}^{k+1}\binom{12}{i}\binom{13}{k+1-i}$$ exists, is equal to _____.

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Range
Text Areas : PlainText
Possible Answers :
5 to 5.001

Question Number : 86 Question Id : 70819116769 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

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ધારોકે પૂર્ણાંકો n અને r માટે $\binom{n}{r}=\begin{cases}{}^{n}C_{r} & ; \text{ જો } n \geq r \geq 0 \\ 0 & ; \text{ અન્યથા}\end{cases}$ છે. તો સરવાળા

$\sum_{i=0}^{k}\binom{10}{i}\binom{15}{k-i}+\sum_{i=0}^{k+1}\binom{12}{i}\binom{13}{k+1-i}$ નું અસ્તિત્વ હોય, તેવી k ની મહત્તમ કિંમત _____ છે.

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Range
Text Areas : PlainText
Possible Answers :
5 to 5.001

Question Number : 87 Question Id : 70819116770 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

If $a+\alpha=1$, $b+\beta=2$ and $af(x)+\alpha f\left(\frac{1}{x}\right)=bx+\frac{\beta}{x}$, $x \neq 0$, then the value of the expression

$\dfrac{f(x)+f\left(\frac{1}{x}\right)}{x+\frac{1}{x}}$ is_____.

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Range
Text Areas : PlainText
Possible Answers :
5 to 5.001

Question Number : 87 Question Id : 70819116770 Question Type : SA

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Correct Marks : 4 Wrong Marks : 0

જો $a+\alpha=1$, $b+\beta=2$ અને $af(x)+\alpha f\left(\frac{1}{x}\right)=bx+\frac{\beta}{x}$, $x\neq 0$, તો અભિવ્યક્તિ $\frac{f(x)+f\left(\frac{1}{x}\right)}{x+\frac{1}{x}}$ નું

મૂલ્ય _____ છે.

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Range
Text Areas : PlainText
Possible Answers :
5 to 5.001

Question Number : 88 Question Id : 70819116771 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

Let λ be an integer. If the shortest distance between the lines $x-\lambda=2y-1=-2z$ and $x=y+2\lambda=z-\lambda$ is $\frac{\sqrt{7}}{2\sqrt{2}}$, then the value of $|\lambda|$ is _____.

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Range
Text Areas : PlainText
Possible Answers :
5 to 5.001

Question Number : 88 Question Id : 70819116771 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

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ધારો કે λ પૂર્ણાંક છે. જો રેખાઓ $x-\lambda=2y-1=-2z$ અને $x=y+2\lambda=z-\lambda$ વચ્ચેનું લઘુત્તમ અંતર $\frac{\sqrt{7}}{2\sqrt{2}}$ હોય,

તો $|\lambda|$ નું મૂલ્ય _____ છે.

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Range
Text Areas : PlainText
Possible Answers :
5 to 5.001

Question Number : 89 Question Id : 70819116772 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

The sum of first four terms of a geometric progression (G.P.) is $\frac{65}{12}$ and the sum of their respective reciprocals is $\frac{65}{18}$. If the product of first three terms of the G.P. is 1, and the third term is α, then 2α is _____.

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Range
Text Areas : PlainText
Possible Answers :
5 to 5.001

Question Number : 89 Question Id : 70819116772 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

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સમગુણોત્તર શ્રેણીના પ્રથમ ચાર પદોનો સરવાળો $\frac{65}{12}$ અને તેમના વ્યસ્તનો સરવાળો $\frac{65}{18}$ છે. જો સમગુણોત્તર શ્રેણીના પ્રથમ ત્રણ પદનો ગુણાકાર 1 અને ત્રીજું પદ α હોય, તો $2\alpha =$ _____.

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Range
Text Areas : PlainText
Possible Answers :
5 to 5.001

Question Number : 90 Question Id : 70819116773 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

The number of the real roots of the equation $(x+1)^2+|x-5|=\frac{27}{4}$ is _____.

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Range
Text Areas : PlainText
Possible Answers :
5 to 5.001

Question Number : 90 Question Id : 70819116773 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

સમીકરણ $(x+1)^2+|x-5|=\frac{27}{4}$ નાં વાસ્તવિક બીજોની સંખ્યા _____ છે.

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

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Answers Type : Range
Text Areas : PlainText
Possible Answers :
5 to 5.001

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