National Testing Agency

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B TECH EG

Group Number :	1
Group Id :	86435161
Group Maximum Duration :	0
Group Minimum Duration :	180
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Edit Attended Group? :	No
Break time :	0
Group Marks :	300
Is this Group for Examiner? :	No

Physics Section A

Section Id :	864351361
Section Number :	1
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 :	864351361
Question Shuffling Allowed :	Yes

Question Number : 1 Question Id : 8643515401 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

An oil drop of radius 2 mm with a density 3 g cm^{-3} is held stationary under a constant electric field 3.55×10^5 V m^{-1} in the Millikan's oil drop experiment. What is the number of excess electrons that the oil drop will possess ?

Consider $g = 9.81$ m/s^2

Options :

86435116201. 17.3×10^{10}

86435116202. 1.73×10^{10}

86435116203. 1.73×10^{12}

86435116204. 48.8×10^{11}

Question Number : 1 Question Id : 8643515401 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

2 mm ત્રિજ્યા અને 3 g cm^{-3} ની ઘનતા ધરાવતાં તેલના એક બુંદને 3.55×10^5 V m^{-1} ના અચળ વિદ્યુતક્ષેત્રની મદદથી મિલિકાનનાં તેલ બુંદ (Millikan's oil drop) પ્રયોગમાં સ્થિર રાખવામાં આવે છે. તેલના બુંદ ઉપર વધારાના કેટલા ઈલેક્ટ્રોન હશે ?

$g = 9.81$ m/s^2 લો.

Options :

86435116201. 17.3×10^{10}

86435116202. 1.73×10^{10}

86435116203. 1.73×10^{12}

86435116204. 48.8×10^{11}

Question Number : 2 Question Id : 8643515402 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

A constant power delivering machine has towed a box, which was initially at rest, along a horizontal straight line. The distance moved by the box in time 't' is proportional to :

Options :

86435116205. $t^{3/2}$

86435116206. $t^{1/2}$

86435116207. $t^{2/3}$

86435116208. t

Question Number : 2 Question Id : 8643515402 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

એક અચળ પાવર (કાર્યત્વરા) આપી શકે તેવા યંત્ર વડે એક પેટી સમક્ષિતિજ સીધી રેખામાં ખેંચવામાં આવે છે કે જે પ્રારંભમાં સ્થિર સ્થિતિમાં હતી. 't' સમયમાં પેટીએ કાપેલું અંતર _____ ના સમપ્રમાણમાં હશે.

Options :

86435116205. $t^{3/2}$

86435116206. $t^{1/2}$

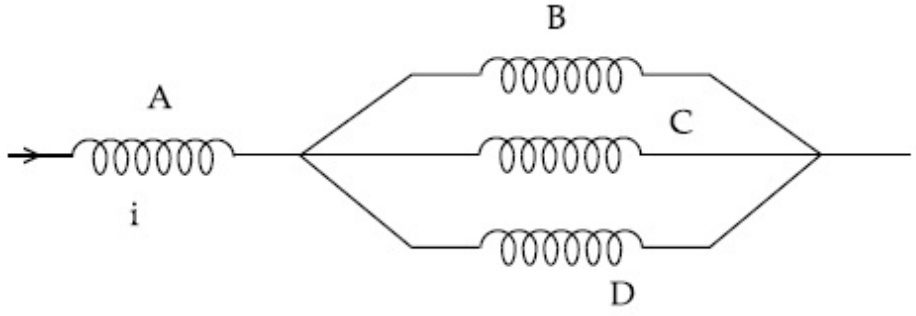
86435116207. $t^{2/3}$

86435116208. t

Question Number : 3 Question Id : 8643515403 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Four identical long solenoids A, B, C and D are connected to each other as shown in the figure. If the magnetic field at the center of A is 3 T, the field at the center of C would be : (Assume that the magnetic field is confined with in the volume of respective solenoid).



Options :

86435116209. 1 T

86435116210. 9 T

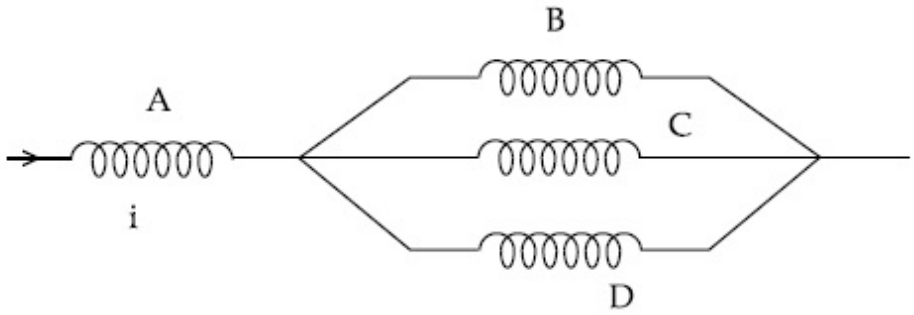
86435116211. 6 T

86435116212. 12 T

Question Number : 3 Question Id : 8643515403 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

આકૃતિમાં દર્શાવ્યા પ્રમાણે એક સમાન સોલેનોઈડ A, B, C અને D ને એકબીજા સાથે જોડવામાં આવ્યા છે. જો A નાં કેન્દ્ર આગળ ચુંબકીય ક્ષેત્ર 3 T હોય તો C નાં કેન્દ્ર આગળ ક્ષેત્ર _____ હશે. (એવું ધારો કે ચુંબકીય ક્ષેત્ર જે-તે સોલેનાઈડનાં કદ પૂરતું જ સિમીત છે.)



Options :

86435116209. 1 T

86435116210. 9 T

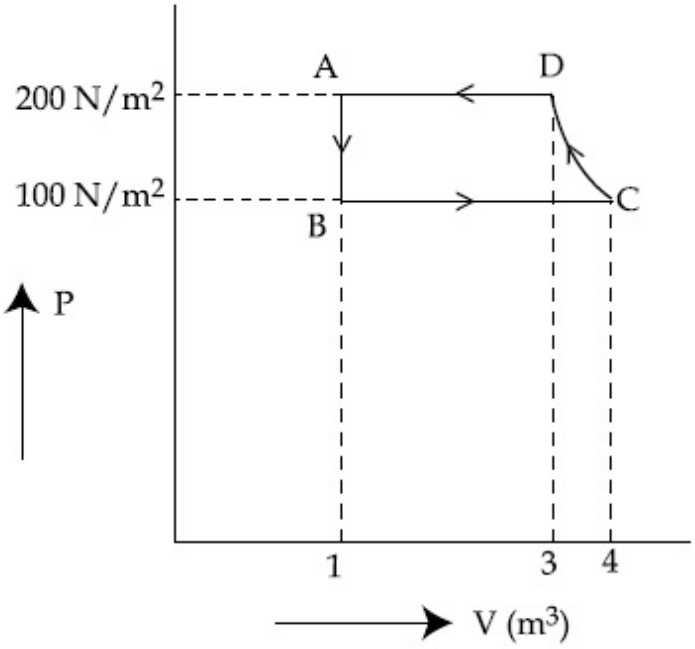
86435116211. 6 T

86435116212. 12 T

Question Number : 4 Question Id : 8643515404 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The P-V diagram of a diatomic ideal gas system going under cyclic process as shown in figure. The work done during an adiabatic process CD is (use $\gamma = 1.4$) :



Options :

86435116213. $400\ J$

86435116214. $-500\ J$

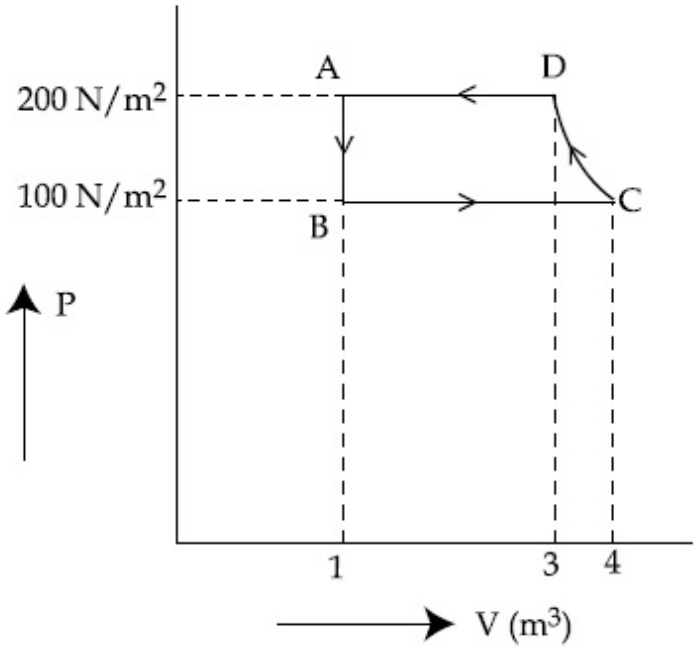
86435116215. $200\ J$

86435116216. $-400\ J$

Question Number : 4 Question Id : 8643515404 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

ચક્રિયા પ્રક્રિયામાંથી પસાર થતા એક દ્વિ-પરમાણુક આદર્શ વાયુ માટે P-V આલેખ આકૃતિમાં દર્શાવેલ છે. સમોષ્મી પ્રક્રિયા CD દરમ્યાન થતું કાર્ય ($\gamma = 1.4$ નો ઉપયોગ કરો.) _____ હશે.



Options :

86435116213. $400\ J$

86435116214. $-500\ J$

86435116215. $200\ J$

86435116216. $-400\ J$

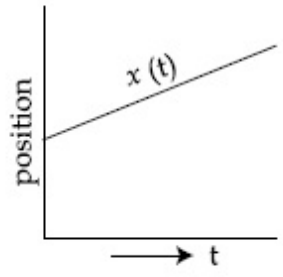
Question Number : 5 Question Id : 8643515405 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

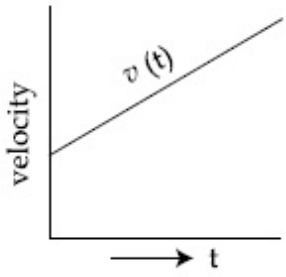
Correct Marks : 4 Wrong Marks : 1

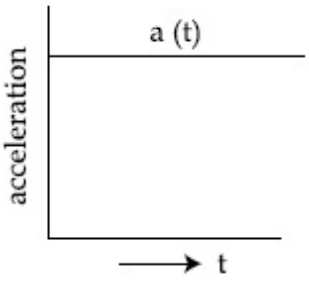
The position, velocity and acceleration of a particle moving with a constant acceleration can be represented by :

Options :

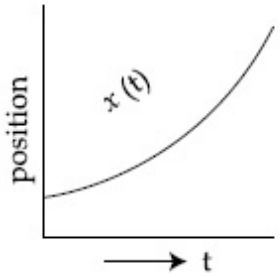
86435116217.

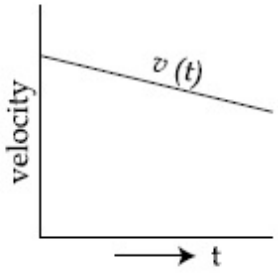


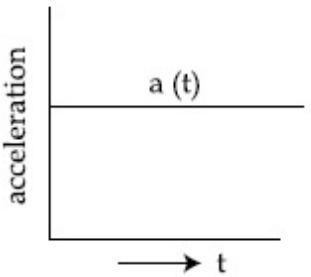




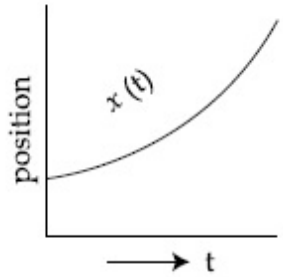
86435116218.

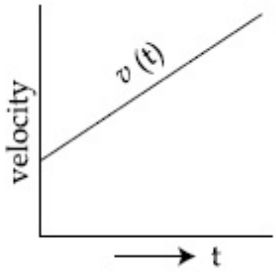


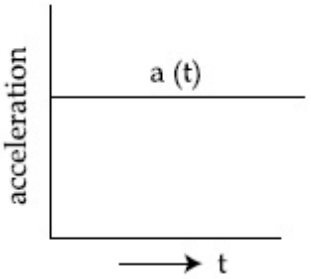




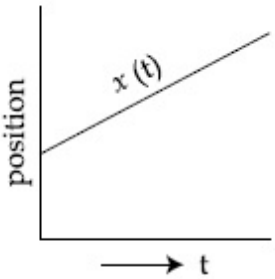
86435116219.

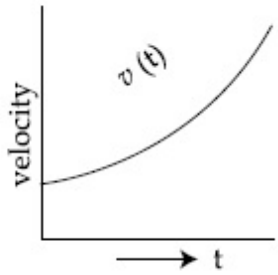


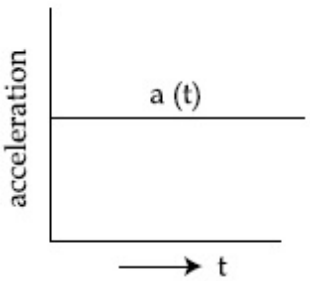




86435116220.







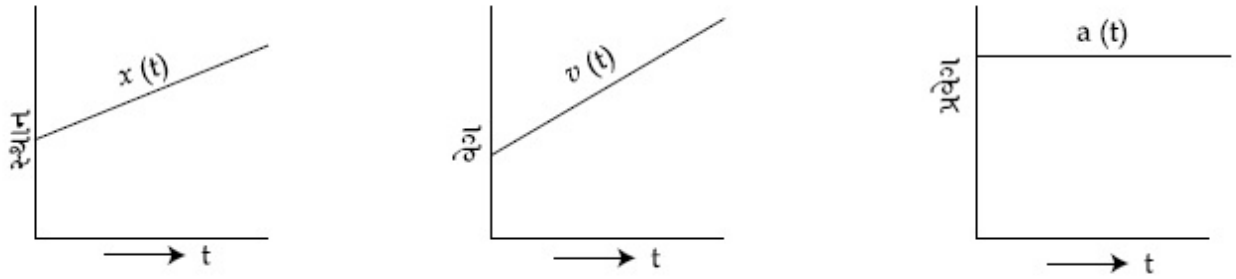
Question Number : 5 Question Id : 8643515405 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

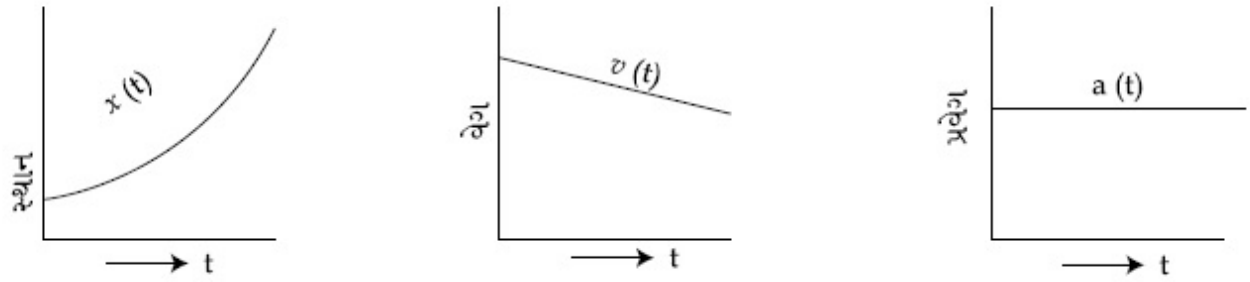
અચળ પ્રવેગથી ગતિ કરતાં કણ માટે સ્થાન, વેગ અને પ્રવેગ _____ ની મદદથી દર્શાવી શકાય.

Options :

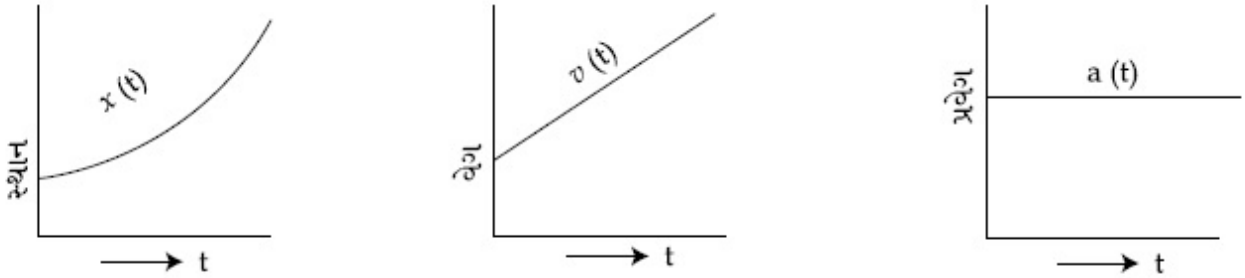
86435116217.



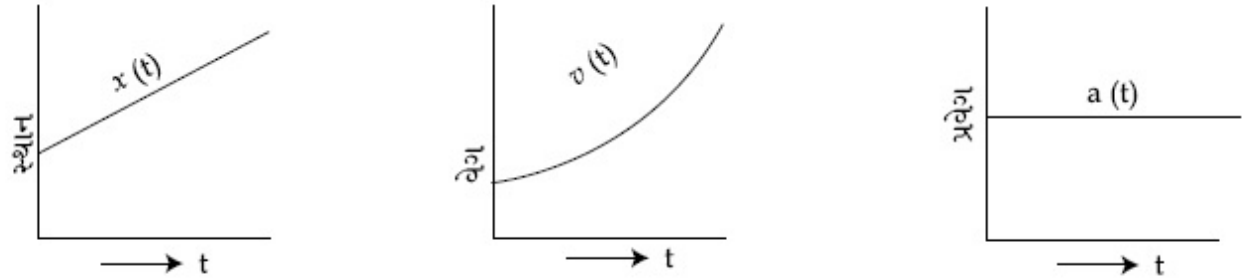
86435116218.



86435116219.



86435116220.



Question Number : 6 Question Id : 8643515406 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

An AC source rated 220 V, 50 Hz is connected to a resistor. The time taken by the current to change from its maximum to the rms value is :

Options :

86435116221. 2.5 ms

86435116222. 25 ms

86435116223. 0.25 ms

86435116224. 2.5 s

Question Number : 6 Question Id : 8643515406 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

220 V, 50 Hz નું રેટીંગ ધરાવતાં AC ઉદ્ગમને અવરોધ સાથે જોડવામાં આવેલ છે. પ્રવાહને તેના મહત્તમ મૂલ્યથી rms મૂલ્ય સુધી બદલવવા માટે લાગતો સમય _____ છે.

Options :

86435116221. 2.5 ms

86435116222. 25 ms

86435116223. 0.25 ms

86435116224. 2.5 s

Question Number : 7 Question Id : 8643515407 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

In Young's double slit arrangement, slits are separated by a gap of 0.5 mm, and the screen is placed at a distance of 0.5 m from them. The distance between the first and the third bright fringe formed when the slits are illuminated by a monochromatic light of 5890 Å is :

Options :

86435116225. 1178×10^{-12} m

86435116226. 5890×10^{-7} m

86435116227. 1178×10^{-9} m

86435116228. 1178×10^{-6} m

Question Number : 7 Question Id : 8643515407 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

યંગનાં બે-સ્લિટનાં પ્રયોગમાં, સ્લિટ 0.5 mm અંતરથી છૂટી પાડેલી છે અને તેનાથી પડદો 0.5 m દૂર રાખેલ છે. જ્યારે સ્લિટને 5890 Å ના એકરંગી પ્રકાશથી પ્રકાશિત કરવામાં આવે તો પ્રથમ અને તૃતિય પ્રકાશિત શલાકાઓ વચ્ચે નું અંતર _____ થશે.

Options :

86435116225. 1178×10^{-12} m

86435116226. 5890×10^{-7} m

86435116227. 1178×10^{-9} m

86435116228. 1178×10^{-6} m

Question Number : 8 Question Id : 8643515408 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

A particle is travelling 4 times as fast as an electron. Assuming the ratio of de-Broglie wavelength of a particle to that of electron is 2 : 1, the mass of the particle is :

Options :

86435116229. 8 times the mass of e^-

86435116230. $\frac{1}{16}$ times the mass of e^-

86435116231. 16 times the mass of e^-

86435116232. $\frac{1}{8}$ times the mass of e^-

Question Number : 8 Question Id : 8643515408 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

એક કણ ઈલેક્ટ્રોન કરતા 4 ગણી ઝડપથી ગતિ કરે છે. કણ અને ઈલેક્ટ્રોનની ડી-બ્રોગ્લી તરંગલંબાઈનો ગુણોત્તર 2 : 1 ધારવામાં આવે તો કણનું દળ _____ થશે.

Options :

86435116229. e^- ના દળ કરતાં 8 ગણું

86435116230. e^- ના દળ કરતાં $\frac{1}{16}$ ગણું

86435116231. e^- ના દળ કરતાં 16 ગણું

86435116232. e^- ના દળ કરતાં $\frac{1}{8}$ ગણું

Question Number : 9 Question Id : 8643515409 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The time period of a simple pendulum is given by $T = 2\pi\sqrt{\frac{l}{g}}$. The measured value of the length of pendulum is 10 cm known to a 1 mm accuracy. The time for 200 oscillations of the pendulum is found to be 100 second using a clock of 1 s resolution. The percentage accuracy in the determination of 'g' using this pendulum is 'x'. The value of 'x' to the nearest integer is,

Options :

86435116233. 2%

86435116234. 3%

86435116235. 4%

86435116236. 5%

Question Number : 9 Question Id : 8643515409 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

સાદા લોલકનો આવર્તકાળ $T = 2\pi\sqrt{\frac{l}{g}}$ વડે આપવામાં આવે છે. 1 mm ની ચોક્કસાઈ સાથે લોલકની લંબાઈ 10 cm માપવામાં આવે છે. 1 સેકન્ડનું વિભેદન ધરાવતી ઘડીયાળ વડે લોલકનાં 200 દોલન માટે લાગતો સમય 100 સેકન્ડ જેટલા માલૂમ પડે છે. આ લોલકની મદદથી 'g' થી માપણીમાં પ્રતિશત ચોક્કસાઈ 'x' છે. 'x' નું મૂલ્ય નજીકત્તમ પૂર્ણાંકમાં _____ હશે.

Options :

86435116233. 2%

86435116234. 3%

86435116235. 4%

86435116236. 5%

Question Number : 10 Question Id : 8643515410 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Imagine that the electron in a hydrogen atom is replaced by a muon (μ). The mass of muon particle is 207 times that of an electron and charge is equal to the charge of an electron. The ionization potential of this hydrogen atom will be :

Options :

86435116237. 13.6 eV

86435116238. 27.2 eV

86435116239. 331.2 eV

86435116240. 2815.2 eV

Question Number : 10 Question Id : 8643515410 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

એવું ધારો કે હાઈડ્રોજન પરમાણુંમાં ઈલેક્ટ્રોનને બદલે મ્યુઓન (μ) છે. મ્યુઓનનું દળ ઈલેક્ટ્રોનનાં દળ કરતાં 207 ગણુ અને વિદ્યુતભાર ઈલેક્ટ્રોન વિદ્યુતભાર જેટલો જ છે. આ હાઈડ્રોજન પરમાણુંનો આયોનાઈઝેશન સ્થિતિમાન _____ હશે.

Options :

86435116237. 13.6 eV

86435116238. 27.2 eV

86435116239. 331.2 eV

86435116240. 2815.2 eV

Question Number : 11 Question Id : 8643515411 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

A radioactive sample disintegrates via two independent decay processes having half lives $T_{1/2}^{(1)}$ and $T_{1/2}^{(2)}$ respectively. The effective half-life, $T_{1/2}$ of the nuclei is :

Options :

86435116241. $T_{1/2} = \frac{T_{1/2}^{(1)} T_{1/2}^{(2)}}{T_{1/2}^{(1)} + T_{1/2}^{(2)}}$

86435116242. $T_{1/2} = T_{1/2}^{(1)} + T_{1/2}^{(2)}$

86435116243. $T_{1/2} = \frac{T_{1/2}^{(1)} + T_{1/2}^{(2)}}{T_{1/2}^{(1)} - T_{1/2}^{(2)}}$

86435116244. None of the above

Question Number : 11 Question Id : 8643515411 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

એક રેડીયો એક્ટિવ નમૂનો, $T_{1/2}^{(1)}$ અને $T_{1/2}^{(2)}$ અર્ધ આયુ ધરાવતી બે સ્વતંત્ર ક્ષય પ્રક્રિયા દ્વારા ક્ષય પામે છે. ન્યૂક્લિયસનો અસરકારક અર્ધઆયુ, $T_{1/2}$ _____ હશે.

Options :

86435116241. $T_{1/2} = \frac{T_{1/2}^{(1)} T_{1/2}^{(2)}}{T_{1/2}^{(1)} + T_{1/2}^{(2)}}$

86435116242. $T_{1/2} = T_{1/2}^{(1)} + T_{1/2}^{(2)}$

86435116243. $T_{1/2} = \frac{T_{1/2}^{(1)} + T_{1/2}^{(2)}}{T_{1/2}^{(1)} - T_{1/2}^{(2)}}$

86435116244. ઉપરમાંથી એકપણ નહીં.

Question Number : 12 Question Id : 8643515412 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

A loop of flexible wire of irregular shape carrying current is placed in an external magnetic field. Identify the effect of the field on the wire.

Options :

86435116245. shape of the loop remains unchanged

86435116246. loop assumes circular shape with its plane normal to the field

86435116247. loop assumes circular shape with its plane parallel to the field

86435116248. wire gets stretched to become straight

Question Number : 12 Question Id : 8643515412 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

પ્રવાહ ધારિત અને અનિયમિત આકાર ધરાવતાં અને લચીલા (flexible) તારના એક ગાળાને બાહ્ય ચુંબકીય ક્ષેત્રમાં મૂકવામાં આવે છે. ક્ષેત્રની તાર ઊપરની અસર શોધો :

Options :

86435116245. ગાળાનો આકાર બદ્દલાતો નથી.

86435116246. તેનું સમતલ ક્ષેત્રને લંબ રહે તે રીતે ગાળો વર્તુળાકાર આકાર ધારણ કરશે.

86435116247. તેનું સમતલ ક્ષેત્રને સમાંતર રહે તે રીતે ગાળો વર્તુળાકાર આકાર ધારણ કરશે.

86435116248. તાર ખેંચાઈને સીધો બની જશે.

Question Number : 13 Question Id : 8643515413 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

In the experiment of Ohm's law, a potential difference of 5.0 V is applied across the end of a conductor of length 10.0 cm and diameter of 5.00 mm. The measured current in the conductor is 2.00 A. The maximum permissible percentage error in the resistivity of the conductor is :

Options :

86435116249. 3.9

86435116250. 7.5

86435116251. 8.4

86435116252. 3.0

Question Number : 13 Question Id : 8643515413 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

ઓહ્મ નિયમનાં પ્રયોગમાં, 10.0 cm ની લંબાઈ અને 5.00 mm નો વ્યાસ ધરાવતાં વાહકનાં છેડા વચ્ચે 5.0 V નો સ્થિતિમાનનો તફાવત લગાડવામાં આવેલ છે. સુવાહકમાં મપાયેલ પ્રવાહ 2.00 A છે. સુવાહકની અવરોધકતામાં માન્ય મહત્તમ પ્રતિશત ત્રૂટિ _____ થશે.

Options :

86435116249. 3.9

86435116250. 7.5

86435116251. 8.4

86435116252. 3.0

Question Number : 14 Question Id : 8643515414 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The time period of a satellite in a circular orbit of radius R is T. The period of another satellite in a circular orbit of radius 9R is :

Options :

86435116253. 3 T

86435116254. 9 T

86435116255. 27 T

86435116256. 12 T

Question Number : 14 Question Id : 8643515414 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

R ત્રિજ્યાનાં વર્તુળાકાર કક્ષામાં રહેલ ઉપગ્રહનો આવર્તકાળ T છે. 9R ત્રિજ્યા ધરાવતી વર્તુળાકાર કક્ષામાં રહેલ બીજા ઉપગ્રહનો આવર્તકાળ _____ થશે.

Options :

86435116253. 3 T

86435116254. 9 T

86435116255. 27 T

86435116256. 12 T

Question Number : 15 Question Id : 8643515415 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

In a series LCR resonance circuit, if we change the resistance only, from a lower to higher value :

Options :

86435116257. The resonance frequency will increase

86435116258. The bandwidth of resonance circuit will increase

86435116259. The quality factor will increase

86435116260. The quality factor and the resonance frequency will remain constant

Question Number : 15 Question Id : 8643515415 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

એક LCR શ્રેણી અનુનાદીય પરિપથમાં, જો આપણો ફક્ત અવરોધને, નાની મૂલ્યથી મોટા મૂલ્ય તરફ બદલીએ, તો _____.

Options :

86435116257. અનુનાદીય આવૃત્તિ વધશે

86435116258. અનુનાદીય પરિપથનો બેન્ડવીથ્ વધશે

86435116259. ગુણવત્તા અંક વધશે

86435116260. ગુણવત્તા અંક અને અનુનાદીય આવૃત્તિ અચળ રહેશે

Question Number : 16 Question Id : 8643515416 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Your friend is having eye sight problem. She is not able to see clearly a distant uniform window mesh and it appears to her as non-uniform and distorted. The doctor diagnosed the problem as :

Options :

86435116261. Myopia and hypermetropia

86435116262. Presbyopia with Astigmatism

86435116263. Astigmatism

86435116264. Myopia with Astigmatism

Question Number : 16 Question Id : 8643515416 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

તમારા મિત્રને દષ્ટિ (જોવામાં) તકલીફ છે. તેને ફક્ત દૂર રહેલી સમાંગ જાળી સ્પષ્ટ રીતે દેખાતી નથી પણ તેને તે અસમાંગ અને વિકૃત થયેલી દેખાય છે. ડૉક્ટર તેનું નિદાન _____ કર્યું હશે.

Options :

86435116261. લઘુદષ્ટિ અને દીર્ઘદષ્ટિ

86435116262. ધીમે-ધીમે દષ્ટિ ગુમાવવી અને વિષમ (અસ્પષ્ટ) દષ્ટિત્વ

86435116263. વિષમ (અસ્પષ્ટ) દષ્ટિત્વ

86435116264. ધીમે-ધીમે દષ્ટિ ગુમાવવી

Question Number : 17 Question Id : 8643515417 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

What will be the average value of energy along one degree of freedom for an ideal gas in thermal equilibrium at a temperature T ? (k_B is Boltzmann constant)

Options :

86435116265. k_BT

86435116266. $\frac{1}{2} k_B T$

86435116267. $\frac{3}{2} k_B T$

86435116268. $\frac{2}{3} k_B T$

Question Number : 17 Question Id : 8643515417 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

T તાપમાને ઉષ્મીય સંતુલનમાં રહેલ આદર્શવાયુ માટે એક મુક્તતાનાં અંશ માટે સરેરાશ ઊર્જાનું મૂલ્ય કેટલું હશે? (k_B એ બોલ્ટ્ઝમન્ અચળાંક છે)

Options :

86435116265. $k_B T$

86435116266. $\frac{1}{2} k_B T$

86435116267. $\frac{3}{2} k_B T$

86435116268. $\frac{2}{3} k_B T$

Question Number : 18 Question Id : 8643515418 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Match List - I with List - II.

List - I		List - II	
(a)	10 km height over earth's surface	(i)	Thermosphere
(b)	70 km height over earth's surface	(ii)	Mesosphere
(c)	180 km height over earth's surface	(iii)	Stratosphere
(d)	270 km height over earth's surface	(iv)	Troposphere

Options :

86435116269. (a)-(iv), (b)-(iii), (c)-(ii), (d)-(i)

86435116270. (a)-(iii), (b)-(ii), (c)-(i), (d)-(iv)

86435116271. (a)-(ii), (b)-(i), (c)-(iv), (d)-(iii)

86435116272. (a)-(i), (b)-(iv), (c)-(iii), (d)-(ii)

Question Number : 18 Question Id : 8643515418 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

સૂચિ - I ને સૂચિ - II સાથે મેળવો :

	સૂચિ - I		સૂચિ - II
(a)	પૃથ્વીની સપાટી ઉપર 10 km ઊંચાઈ	(i)	થર્મોસ્ફિયર (Thermosphere)
(b)	પૃથ્વીની સપાટી ઉપર 70 km ઊંચાઈ	(ii)	મેશોસ્ફિયર (Mesosphere)
(c)	પૃથ્વીની સપાટી ઉપર 180 km ઊંચાઈ	(iii)	સ્ટ્રેટોસ્ફિયર (Stratosphere)
(d)	પૃથ્વીની સપાટી ઉપર 270 km ઊંચાઈ	(iv)	ટ્રાયપોસ્ફિયર (Triposphere)

Options :

86435116269. (a)-(iv), (b)-(iii), (c)-(ii), (d)-(i)

86435116270. (a)-(iii), (b)-(ii), (c)-(i), (d)-(iv)

86435116271. (a)-(ii), (b)-(i), (c)-(iv), (d)-(iii)

86435116272. (a)-(i), (b)-(iv), (c)-(iii), (d)-(ii)

Question Number : 19 Question Id : 8643515419 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

A plane electromagnetic wave of frequency 100 MHz is travelling in vacuum along the x-direction. At a particular point in space and time, $\vec{B} = 2.0 \times 10^{-8}\ \hat{k}$ T. (where, $\hat{k}$ is unit vector along z-direction) What is $\vec{E}$ at this point ?

(speed of light $c = 3 \times 10^8$ m/s)

Options :

86435116273. $0.6\ \hat{j}$ V/m

86435116274. $6.0\ \hat{j}$ V/m

86435116275. $6.0\ \hat{k}$ V/m

86435116276. $0.6\ \hat{k}$ V/m

Question Number : 19 Question Id : 8643515419 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

100 MHz આવૃત્તિ ધરાવતાં એક સમતલ વિદ્યુતચુંબકીય તરંગ શૂન્યાવકાશમાં x- દિશામાં ગતિ કરે છે. એક ચોક્કસ સમયે અને અવકાશનાં બિંદુએ $\vec{B} = 2.0 \times 10^{-8}\ \hat{k}$ T થી અપાય છે. (જ્યાં $\hat{k}$ એ z-દિશામાં એકમ સદિશ) તો આ બિંદુએ $\vec{E}$ કેટલું હશે?

(પ્રકાશની ઝડપ $c = 3 \times 10^8$ m/s)

Options :

86435116273. $0.6\ \hat{j}$ V/m

86435116274. $6.0\ \hat{j}$ V/m

86435116275. $6.0\ \hat{k}$ V/m

86435116276. $0.6\ \hat{k}$ V/m

Question Number : 20 Question Id : 8643515420 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

A thin circular ring of mass M and radius r is rotating about its axis with an angular speed ω. Two particles having mass m each are now attached at diametrically opposite points. The angular speed of the ring will become :

Options :

86435116277. $\omega \frac{M}{M + m}$

86435116278. $\omega \frac{M}{M + 2m}$

86435116279. $\omega \frac{M - 2m}{M + 2m}$

86435116280. $\omega \frac{M + 2m}{M}$

Question Number : 20 Question Id : 8643515420 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

M દળ ધરાવતી અને r ત્રિજ્યા ધરાવતી એક પાતળી રીંગ પોતાની અક્ષને અનુલક્ષીને ω જેટલી કોણીય ઝડપથી ભ્રમણ કરે છે. m દળ ધરાવતાં બે કણોને વિરુધ્ધ વ્યાસાંત બિંદુઓ આગળ જોડવામાં આવે છે. રીંગની કોણીય ઝડપ _____ થશે.

Options :

86435116277. $\omega \frac{M}{M + m}$

86435116278. $\omega \frac{M}{M + 2m}$

86435116279. $\omega \frac{M - 2m}{M + 2m}$

86435116280. $\omega \frac{M + 2m}{M}$

Physics Section B

Section Id :	864351362
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 :	864351362
Question Shuffling Allowed :	Yes

Question Number : 21 Question Id : 8643515421 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

An npn transistor operates as a common emitter amplifier with a power gain of 10^6. The input circuit resistance is 100 Ω and the output load resistance is 10 kΩ. The common emitter current gain 'β' will be _____. (Round off to the Nearest Integer)

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
100

Question Number : 21 Question Id : 8643515421 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

એક npn ટ્રાન્ઝિસ્ટર કોમન-એમીટર એમ્પ્લિફાયર તરીકે 10^6 જેટલી કાર્યત્વરા લબ્ધિ થી કાર્યરત છે. ઈનપુટ પરિપથનો અવરોધ 100 Ω અને આઉટપુટમાં ભાર અવરોધ 10 kΩ છે. સામાન્ય એમીટર માટે પ્રવાહ લબ્ધિ 'β' _____ હશે. (નજીકત્તમ પૂર્ણાંકમાં લખો)

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
100

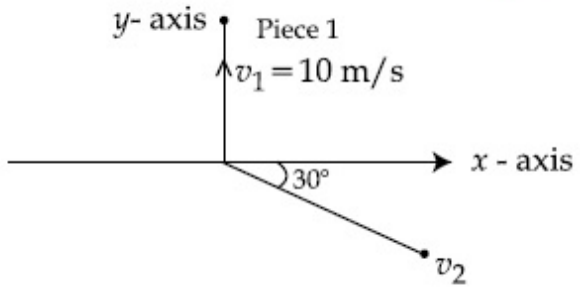
Question Number : 22 Question Id : 8643515422 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

A ball of mass 10 kg moving with a velocity $10\sqrt{3}$ m/s along the x-axis, hits another ball of mass 20 kg which is at rest. After the collision, first ball comes to rest while the second ball disintegrates into two equal pieces. One piece starts moving along y-axis with a speed of 10 m/s. The second piece starts moving at an angle of 30° with respect to the x-axis.

The velocity of the ball moving at 30° with x-axis is x m/s.

The configuration of pieces after collision is shown in the figure below.

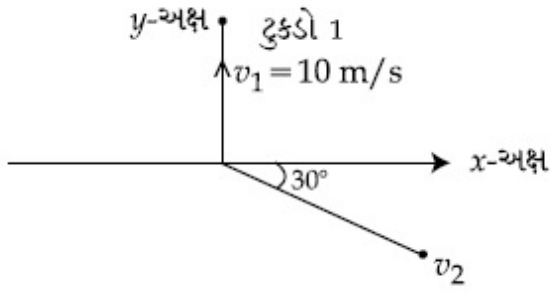
The value of x to the nearest integer is _____.



Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
100

Question Number : 22 Question Id : 8643515422 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

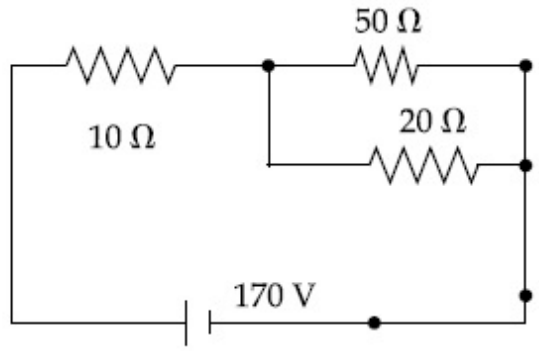
$10\ \text{kg}$ દળ ધરાવતો અને x-અક્ષની દિશામાં $10\sqrt{3}\ \text{m/s}$ ને ગતિ કરતો એક બોલ, $20\ \text{kg}$ દળ ધરાવતાં અને સ્થિર એવા બીજા દડાને અથડાય છે. અથડામણ બાદ, પ્રથમ બોલ સ્થિર બને છે જ્યારે બીજો દડો બે સમાન ટુકડામાં વિભાજીત થાય છે. એક ટુકડો y-દિશામાં $10\ \text{m/s}$ ની ઝડપથી ગતિ કરવાનું શરૂ કરે છે. બીજો ટુકડો x-અક્ષને સાપેક્ષ 30° ના કોણે ગતિ કરવાનું શરૂ કરે છે. x-અક્ષથી 30° ના કોણે ગતિ કરતા બોલનો વેગ $x\ \text{m/s}$ છે. અથડામણ બાદની સ્થિતિ નીચે આકૃતિમાં દર્શાવેલ છે. x નું મૂલ્ય નજીકત્તમ પૂર્ણાંકમાં _____ હશે.



Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
100

Question Number : 23 Question Id : 8643515423 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

The voltage across the $10\ \Omega$ resistor in the given circuit is x volt.

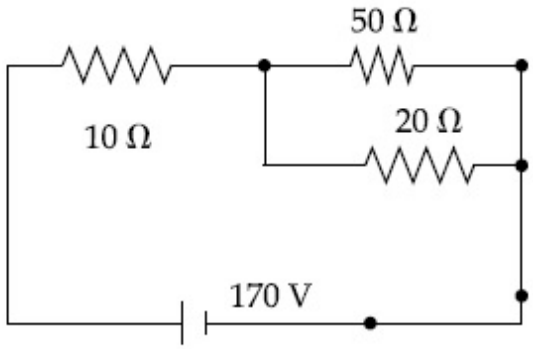


The value of 'x' to the nearest integer is _____.

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
100

Question Number : 23 Question Id : 8643515423 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

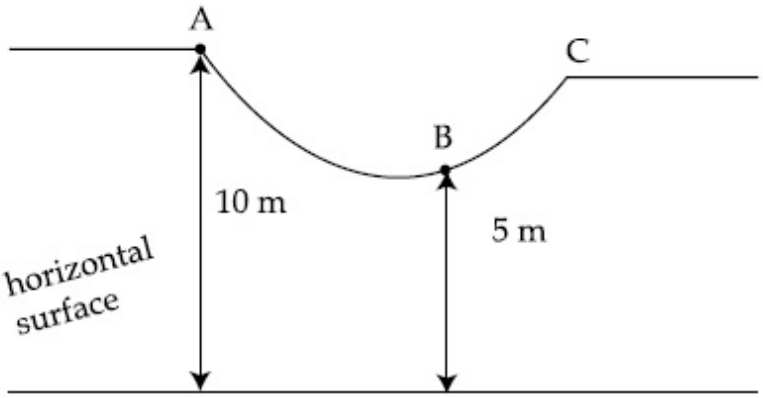
આપેલ પરિપથમાં 10 Ω અવરોધને સમાંતર વોલ્ટેજ x વોલ્ટ છે.



'x' નું મૂલ્ય નજીકત્તમ પૂર્ણાંકમાં _____ થશે.

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
100

Question Number : 24 Question Id : 8643515424 Question Type : SA
Correct Marks : 4 Wrong Marks : 0



As shown in the figure, a particle of mass 10 kg is placed at a point A. When the particle is slightly displaced to its right, it starts moving and reaches the point B. The speed of the particle at B is x m/s.

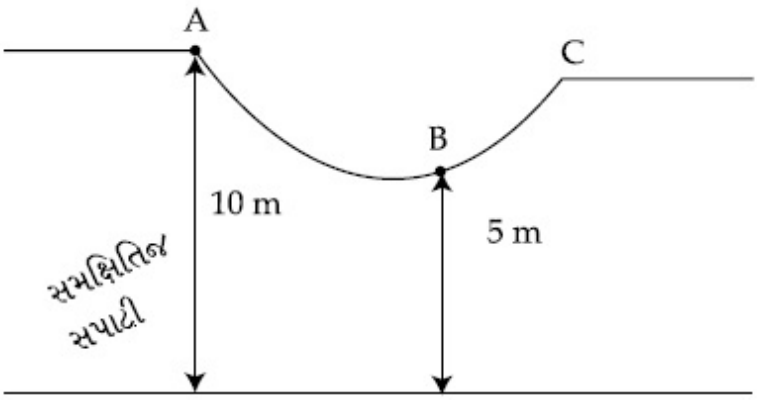
(Take $g = 10\ m/s^2$)

The value of 'x' to the nearest integer is _____.

Response Type : Numeric
Evaluation Required For SA : Yes

Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
100

Question Number : 24 Question Id : 8643515424 Question Type : SA
Correct Marks : 4 Wrong Marks : 0



આકૃતિમાં દર્શાવ્યા અનુસાર, 10 kg દળ ધરાવતાં કણને બિંદુ A આગળ મૂકવામાં આવેલ છે. જ્યારે કણને થોડોક જમણી બાજુ ખસેડવામાં આવે છે ત્યારે તે ગતિ શરૂ કરી બિંદુ B આગળ પહોંચે છે. બિંદુ B આગળ કણની ઝડપ x m/s છે. ($g = 10$ m/s^2 લો.)

'x' નું મૂલ્ય, નજીકત્તમ પૂર્ણાંક માટે, _____ થશે.

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
100

Question Number : 25 Question Id : 8643515425 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

A particle performs simple harmonic motion with a period of 2 second. The time taken by the particle to cover a displacement equal to half of its amplitude from the mean position is $\frac{1}{a}$ s.

The value of 'a' to the nearest integer is _____.

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

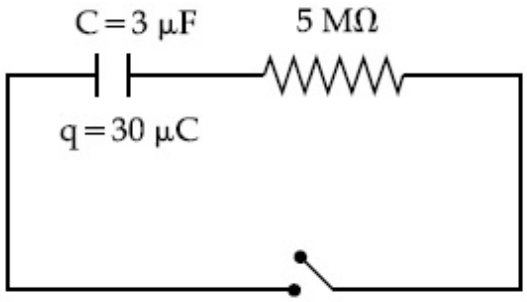
Text Areas : PlainText
Possible Answers :
100

Question Number : 25 Question Id : 8643515425 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

એક કણ 2 સેકન્ડનાં આવર્તકાળ સાથે સરળ આવર્તકાળ કરે છે. કણ પોતાનાં મધ્યમાન સ્થાનથી કંપવિસ્તારનાં અડધા જેટલું અંતર કાપવા માટે લાગતો સમય $\frac{1}{a}$ s છે, 'a' નું મૂલ્ય, નજીકત્તમ પૂર્ણાંક માટે, _____ થશે.

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
100

Question Number : 26 Question Id : 8643515426 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

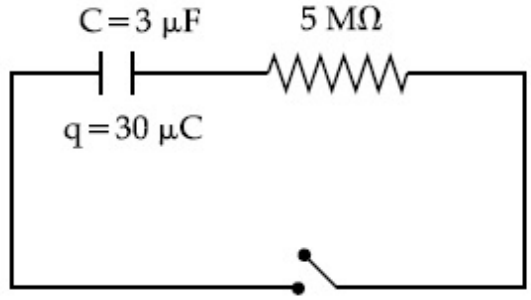


The circuit shown in the figure consists of a charged capacitor of capacity 3 μF and a charge of 30 μC. At time t = 0, when the key is closed, the value of current flowing through the 5 MΩ resistor is 'x' μA.

The value of 'x' to the nearest integer is _____.

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
100

Question Number : 26 Question Id : 8643515426 Question Type : SA
Correct Marks : 4 Wrong Marks : 0



આકૃતિમાં દર્શાવેલ પરિપથ 3 μF સંધારકતા અને 30 μC જેટલો વિદ્યુતભાર ધરાવતો વીજભારીત સંધારક ધરાવે છે. t = 0 સમયે, જ્યારે કળ બંધ હોય છે, ત્યારે 5 MΩ અવરોધમાંથી પસાર થતો પ્રવાહ 'x' μA છે. 'x' નું મૂલ્ય, નજીકત્તમ પૂર્ણાંક માટે, _____ થશે.

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
100

Question Number : 27 Question Id : 8643515427 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

A person is swimming with a speed of 10 m/s at an angle of 120° with the flow and reaches to a point directly opposite on the other side of the river. The speed of the flow is 'x' m/s. The value of 'x' to the nearest integer is _____.

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
100

Question Number : 27 Question Id : 8643515427 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

એક વ્યક્તિ, વહેણને સાપેક્ષ 120° ના કોણે 10 m/s ની ઝડપથી તરે છે અને નદીના બીજા કાંઠે (છેડે) બરાબર વિરુધ્ધ રહેલા બિંદુ આગળ પહોંચે છે. વહેણની ઝડપ 'x' m/s છે. 'x' નું મૂલ્ય, નજીકત્તમ પૂર્ણાંક માટે, _____ થશે.

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

Answers Type : Equal
Text Areas : PlainText
Possible Answers :
100

Question Number : 28 Question Id : 8643515428 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

Two separate wires A and B are stretched by 2 mm and 4 mm respectively, when they are subjected to a force of 2 N. Assume that both the wires are made up of same material and the radius of wire B is 4 times that of the radius of wire A. The length of the wires A and B are in the ratio of a : b. Then $\frac{a}{b}$ can be expressed as $\frac{1}{x}$ where x is _____.

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
100

Question Number : 28 Question Id : 8643515428 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

બે જુદા-જુદા તારો A અને B પર જ્યારે 2 N નું બળ લગાડવામાં આવે છે ત્યારે અનુક્રમે 2 mm અને 4 mm જેટલા ખેંચાય છે. જો બંને તારો સમાન દ્રવ્યના બનેલા છે તેમ ધારીએ અને તાર B ની ત્રિજ્યા તાર A ની ત્રિજ્યા કરતા 4 ગણી છે. તારો A અને B ની લંબાઈઓનો ગુણોત્તર a : b છે. $\frac{a}{b}$ ને $\frac{1}{x}$ તરીકે વ્યક્ત કરવા માં આવે તો x _____ છે.

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
100

Question Number : 29 Question Id : 8643515429 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

A parallel plate capacitor has plate area 100 m^2 and plate separation of 10 m. The space between the plates is filled up to a thickness 5 m with a material of dielectric constant of 10. The resultant capacitance of the system is 'x' pF.

The value of $\varepsilon_0 = 8.85 \times 10^{-12}$ $F.m^{-1}$

The value of 'x' to the nearest integer is _____.

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
100

Question Number : 29 Question Id : 8643515429 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

એક સમાંતર પ્લેટ કેપેસીટર માટે પ્લેટોનું ક્ષેત્રફળ 100 m^2 અને તેમની વચ્ચેનું અંતર 10 m છે. પ્લેટો વચ્ચેની જગ્યા 5 m સુધી 10 જેટલો ડાયઈલેક્ટ્રીક (પરાવૈદ્યુતાંક) અચળાંક હોય તેવા માધ્યમથી ભરવામાં આવે છે. તંત્રની પરિણામી સંધારકતા 'x' pF છે. x નું મૂલ્ય, નજીકત્તમ પૂર્ણાંક માટે, _____ થશે.

(ε_0 નું મૂલ્ય $\varepsilon_0 = 8.85 \times 10^{-12}$ $F.m^{-1}$)

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
100

Question Number : 30 Question Id : 8643515430 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

A bullet of mass 0.1 kg is fired on a wooden block to pierce through it, but it stops after moving a distance of 50 cm into it. If the velocity of bullet before hitting the wood is 10 m/s and it slows down with uniform deceleration, then the magnitude of effective retarding force on the bullet is 'x' N.

The value of 'x' to the nearest integer is _____.

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

Possible Answers :

100

Question Number : 30 Question Id : 8643515430 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

0.1 kg દળ ધરાવતી ગોળીને લાકડાનાં ચોસલા ઊપર ફાયર (ફોડવામાં) આવે છે કે જેથી તે લાકડામાં ઘૂસી જાય, પણ તે ચોસલામાં 50 cm અંતર કાપીને અટકી જાય છે. જો લાકડાને અથડાતા પહેલા ગોળીનો વેગ 10 m/s હોય અને તે સમાન પ્રતિપ્રવેગથી ધીમી પડતી હોય, તો ગોળી પર લાગતું સમાસ પ્રતિપ્રવેગી બળ 'x' N છે. 'x' નું મૂલ્ય, નજીકત્તમ પૂર્ણાંક માટે, _____ થશે.

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

100

Chemistry Section A

Section Id :	864351363
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 :	864351363
Question Shuffling Allowed :	Yes

Question Number : 31 Question Id : 8643515431 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No
Correct Marks : 4 Wrong Marks : 1

In a binary compound, atoms of element A form a hcp structure and those of element M occupy 2/3 of the tetrahedral voids of the hcp structure. The formula of the binary compound is :

Options :

86435116291. M_2A_3

86435116292. M_4A_3

86435116293. MA_3

86435116294. M_4A

Question Number : 31 Question Id : 8643515431 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

એક દ્વિઅંગી સંયોજનમાં, તત્વ A નાં પરમાણુઓ hcp બંધારણ બનાવે છે અને તત્વ M એ hcp બંધારણનાં સમચતુષ્ફલકીય છિદ્રોની 2/3 જગ્યા રોકે છે. તો દ્વિઅંગી સંયોજનનું સૂત્ર શોધો.

Options :

86435116291. M_2A_3

86435116292. M_4A_3

86435116293. MA_3

86435116294. M_4A

Question Number : 32 Question Id : 8643515432 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

A certain orbital has no angular nodes and two radial nodes. The orbital is :

Options :

86435116295. $2s$

86435116296. $2p$

86435116297. $3s$

86435116298. $3p$

Question Number : 32 Question Id : 8643515432 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

એક નિશ્ચિત કક્ષક કોણીય નોડ્સ ધરાવતી નથી તેમજ તે બે ત્રિજ્યાકીય નોડ્સ ધરાવે છે. તે કક્ષક શોધો.

Options :

86435116295. 2s

86435116296. 2p

86435116297. 3s

86435116298. 3p

Question Number : 33 Question Id : 8643515433 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Match List - I with List - II :

	List - I (Process)		List - II (Catalyst)
(a)	Deacon's process	(i)	ZSM-5
(b)	Contact process	(ii)	$CuCl_2$
(c)	Cracking of hydrocarbons	(iii)	Particles 'Ni'
(d)	Hydrogenation of vegetable oils	(iv)	V_2O_5

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

Options :

86435116299. (a)-(i), (b)-(iii), (c)-(ii), (d)-(iv)

86435116300. (a)-(iv), (b)-(ii), (c)-(i), (d)-(iii)

86435116301. (a)-(iii), (b)-(i), (c)-(iv), (d)-(ii)

86435116302. (a)-(ii), (b)-(iv), (c)-(i), (d)-(iii)

Question Number : 33 Question Id : 8643515433 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 (પ્રક્રમ)		સૂચી - II (ઉદ્દીપક)
(a)	ડેકોન પ્રક્રમ	(i)	ZSM-5
(b)	સંપર્ક પ્રક્રમ	(ii)	$CuCl_2$
(c)	હાઈડ્રોકાર્બનોનું તુટવું (Cracking)	(iii)	કણો 'Ni'
(d)	વનસ્પતિ તેલોનું હાઈડ્રોજીનેશન	(iv)	V_2O_5

નીચે આપેલા વિકલ્પોમાંથી વધુ બંધબેસતો જવાબ પસંદ કરો.

Options :

86435116299. (a)-(i), (b)-(iii), (c)-(ii), (d)-(iv)

86435116300. (a)-(iv), (b)-(ii), (c)-(i), (d)-(iii)

86435116301. (a)-(iii), (b)-(i), (c)-(iv), (d)-(ii)

86435116302. (a)-(ii), (b)-(iv), (c)-(i), (d)-(iii)

Question Number : 34 Question Id : 8643515434 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The ionic radius of Na^+ ion is 1.02 Å. The ionic radii (in Å) of Mg^{2+} and Al^{3+}, respectively, are :

Options :

86435116303. 0.85 and 0.99

86435116304. 0.72 and 0.54

86435116305. 0.68 and 0.72

86435116306. 1.05 and 0.99

Question Number : 34 Question Id : 8643515434 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Na^+ ની આયનિક ત્રિજ્યા 1.02 Å છે. Mg^{2+} અને Al^{3+} ની આયનિક ત્રિજ્યાઓ (Å માં) અનુક્રમે શોધો.

Options :

86435116303. 0.85 અને 0.99

86435116304. 0.72 અને 0.54

86435116305. 0.68 અને 0.72

86435116306. 1.05 અને 0.99

Question Number : 35 Question Id : 8643515435 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The chemical that is added to reduce the melting point of the reaction mixture during the extraction of aluminium is :

Options :

86435116307. Bauxite

86435116308. Kaolite

86435116309. Calamine

86435116310. Cryolite

Question Number : 35 Question Id : 8643515435 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

એલ્યુમિનિયમના નિષ્કર્ષણ દરમ્યાન પ્રક્રિયા મિશ્રણનું ગલનબિંદુ ઘટાડવા માટે કયું રસાયણ ઉમેરવામાં આવે છે ?

Options :

86435116307. બોક્સાઈટ

86435116308. કેઓલાઈટ (Kaolite)

86435116309. કેલેમાઈન

86435116310. ક્રાયોલાઈટ

Question Number : 36 Question Id : 8643515436 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 : During the boiling of water having temporary hardness, $Mg(HCO_3)_2$ is converted to $MgCO_3$.

Reason R : The solubility product of $Mg(OH)_2$ is greater than that of $MgCO_3$.

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

Options :

86435116311. Both **A** and **R** are true and **R** is the correct explanation of **A**

86435116312. Both **A** and **R** are true but **R** is NOT the correct explanation of **A**

86435116313. **A** is true but **R** is false

86435116314. **A** is false but **R** is true

Question Number : 36 Question Id : 8643515436 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

નીચે બે વિધાનો આપેલા છે. એક ને **કથન A** તરીકે અને બીજાને **કારણ R** વડે લેબલ કરેલ છે.

કથન A : કામચલાઉ કઠિનતા વાળું પાણી ઉકળે તે દરમ્યાન $Mg(HCO_3)_2$ નું રૂપાંતર $MgCO_3$ માં થાય છે.

કારણ R : $Mg(OH)_2$ નો દ્રાવ્યતા ગુણાકાર $MgCO_3$ કરતાં વધારે હોય છે.

ઉપરનાં વિધાનોનાં સંદર્ભમાં, નીચે આપેલા વિકલ્પોમાંથી સૌથી વધુ બંધબેસતો જવાબ પસંદ કરો.

Options :

86435116311. બંને **A** અને **R** સાચાં છે અને **R** એ **A** ની સાચી સમજૂતી છે.

86435116312. બંને **A** અને **R** સાચાં છે પણ **R** એ **A** ની સાચી સમજૂતી નથી.

86435116313. A સાચું છે પણ R ખોટું છે.

86435116314. A ખોટુ છે પણ R સાચું છે.

Question Number : 37 Question Id : 8643515437 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Match List - I with List - II :

	List - I		List - II
(a)	$Ca(OCl)_2$	(i)	Antacid
(b)	$CaSO_4 \cdot \frac{1}{2}H_2O$	(ii)	Cement
(c)	CaO	(iii)	Bleach
(d)	$CaCO_3$	(iv)	Plaster of Paris

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

Options :

86435116315. (a)-(i), (b)-(iv), (c)-(iii), (d)-(ii)

86435116316. (a)-(iii), (b)-(ii), (c)-(i), (d)-(iv)

86435116317. (a)-(iii), (b)-(ii), (c)-(iv), (d)-(i)

86435116318. (a)-(iii), (b)-(iv), (c)-(ii), (d)-(i)

Question Number : 37 Question Id : 8643515437 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		સૂચી - II
(a)	$Ca(OCl)_2$	(i)	પ્રતિએસિડ
(b)	$CaSO_4 \cdot \frac{1}{2}H_2O$	(ii)	સિમેંટ
(c)	CaO	(iii)	બ્લીચ
(d)	$CaCO_3$	(iv)	પ્લાસ્ટર ઑફ પેરિસ

નીચે આપેલા વિકલ્પોમાંથી સૌથી વધુ બંધબેસતો જવાબ પસંદ કરો.

Options :

86435116315. (a)-(i), (b)-(iv), (c)-(iii), (d)-(ii)

86435116316. (a)-(iii), (b)-(ii), (c)-(i), (d)-(iv)

86435116317. (a)-(iii), (b)-(ii), (c)-(iv), (d)-(i)

86435116318. (a)-(iii), (b)-(iv), (c)-(ii), (d)-(i)

Question Number : 38 Question Id : 8643515438 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The number of ionisable hydrogens present in the product obtained from a reaction of phosphorus trichloride and phosphonic acid is :

Options :

86435116319. 1

86435116320. 2

86435116321. 0

86435116322. 3

Question Number : 38 Question Id : 8643515438 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

ફોસ્ફોરસ ટ્રાયક્લોરાઈડ અને ફોસ્ફોનિક એસિડ વચ્ચેની પ્રક્રિયાથી મળતી નીપજમાં હાજર આયનીકરણ થઈ શકે તેવા હાઈડ્રોજનોની સંખ્યા શોધો.

Options :

86435116319. 1

86435116320. 2

86435116321. 0

86435116322. 3

Question Number : 39 Question Id : 8643515439 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Match List - I with List - II :

	List - I		List - II
(a)	Chlorophyll	(i)	Ruthenium
(b)	Vitamin - B_{12}	(ii)	Platinum
(c)	Anticancer drug	(iii)	Cobalt
(d)	Grubbs catalyst	(iv)	Magnesium

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

Options :

86435116323. (a)-(iii), (b)-(ii), (c)-(iv), (d)-(i)

86435116324. (a)-(iv), (b)-(iii), (c)-(ii), (d)-(i)

86435116325. (a)-(iv), (b)-(ii), (c)-(iii), (d)-(i)

86435116326. (a)-(iv), (b)-(iii), (c)-(i), (d)-(ii)

Question Number : 39 Question Id : 8643515439 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		સૂચી - II
(a)	ક્લોરોફિલ	(i)	રુથેનિયમ
(b)	વિટામીન - B_{12}	(ii)	પ્લેટિનમ
(c)	પ્રતિકેન્સર ઔષધ	(iii)	કોબાલ્ટ
(d)	ગ્રુબ્સ ઉદ્દીપક (Grubbs catalyst)	(iv)	મેગ્નેશિયમ

નીચે આપેલા વિકલ્પોમાંથી સૌથી વધુ બંધ બેસતો જવાબ પસંદ કરો.

Options :

86435116323. (a)-(iii), (b)-(ii), (c)-(iv), (d)-(i)

86435116324. (a)-(iv), (b)-(iii), (c)-(ii), (d)-(i)

86435116325. (a)-(iv), (b)-(ii), (c)-(iii), (d)-(i)

86435116326. (a)-(iv), (b)-(iii), (c)-(i), (d)-(ii)

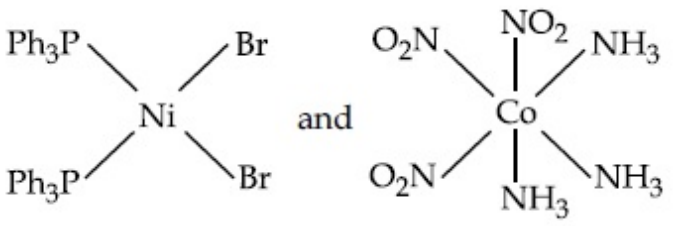
Question Number : 40 Question Id : 8643515440 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

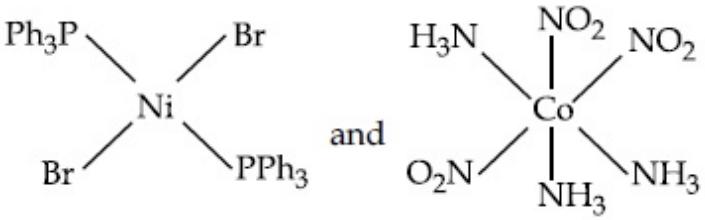
The correct structures of trans-$[NiBr_2(PPh_3)_2]$ and meridonial-$[Co(NH_3)_3(NO_2)_3]$, respectively, are :

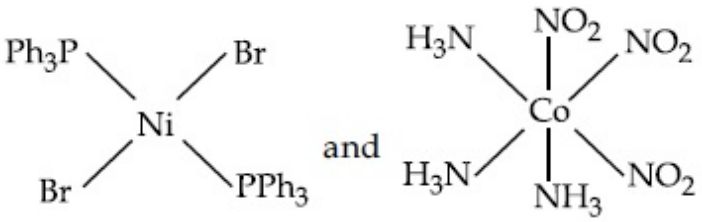
Options :

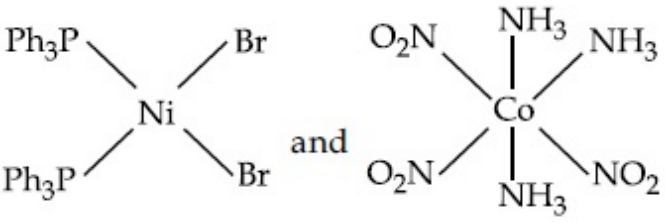
86435116327.



86435116328.



86435116329. 

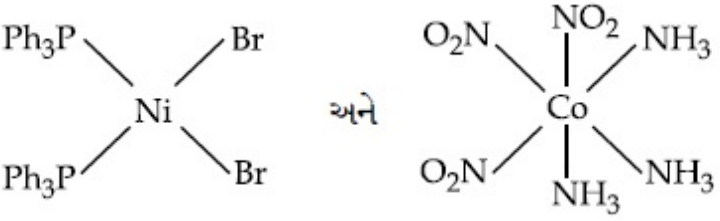
86435116330. 

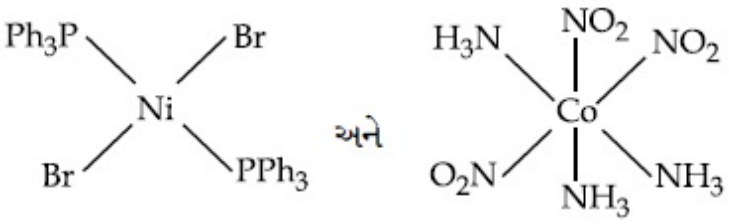
Question Number : 40 Question Id : 8643515440 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

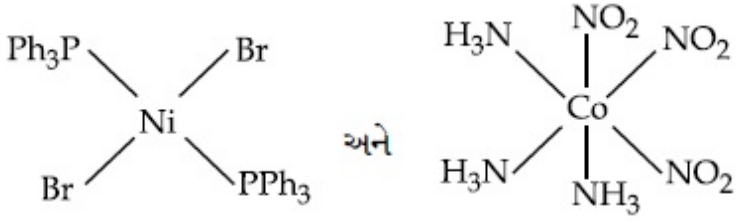
Correct Marks : 4 Wrong Marks : 1

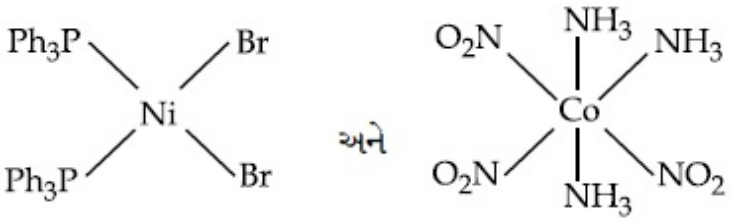
ટ્રાન્સ-$[NiBr_2(PPh_3)_2]$ અને મેરીડોનીયલ-$[Co(NH_3)_3(NO_2)_3]$ નાં સાચાં બંધારણો અનુક્રમે શોધો.

Options :

86435116327. 

86435116328. 

86435116329. 



86435116330.

Question Number : 41 Question Id : 8643515441 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The statements that are TRUE :

(A) methane leads to both global warming and photochemical smog

(B) methane is generated from paddy fields

(C) methane is a stronger global warming gas than CO_2

(D) methane is a part of reducing smog.

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

Options :

86435116331. (A) and (B) only

86435116332. (A), (B), (C) only

86435116333. (B), (C), (D) only

86435116334. (A), (B), (D) only

Question Number : 41 Question Id : 8643515441 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

વિધાનોમાંથી સાચાં શોધો.

(A) મિથેન વૈશ્વિક તાપમાનમાં વધારો (ગ્લોબલ વોર્મિંગ) અને પ્રકાશ રાસાયણિક ધૂમ્ર-ધુમ્મસ તરફ દોરી જાય છે.

(B) મિથેન એ પેડી ક્ષેત્રમાંથી (ચોખા ઉગતાં હોય ત્યાંથી) ઉત્પન્ન થાય છે.

(C) મિથેન એ CO_2 કરતાં પ્રબળ ગ્લોબલ વોર્મિંગ વાયુ છે.

(D) મિથેન એ રિડ્યુસીંગ ધૂમ્ર-ધુમ્મસનો એક ભાગ છે.

નીચે આપેલા વિકલ્પોમાંથી સૌથી વધુ બંધબેસતો જવાબ પસંદ કરો.

Options :

86435116331. ફક્ત (A) અને (B)

86435116332. ફક્ત (A), (B), (C)

86435116333. ફક્ત (B), (C), (D)

86435116334. ફક્ત (A), (B), (D)

Question Number : 42 Question Id : 8643515442 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Compound with molecular formula C_3H_6O can show :

Options :

86435116335. Positional isomerism

86435116336. Functional group isomerism

86435116337. Metamerism

86435116338. Both positional isomerism and metamerism

Question Number : 42 Question Id : 8643515442 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

C_3H_6O અણુસૂત્રવાળા સંયોજન નીચેનામાંથી પ્રદર્શિત કરી શકે છે.

Options :

86435116335. સ્થાન સમઘટકતા

86435116336. ક્રિયાશીલ સમૂહ સમઘટકતા

86435116337. સમાવયતા (Metamerism) સમઘટકતા

86435116338. બંને સ્થાન અને સમાવયતા સમઘટકતા

Question Number : 43 Question Id : 8643515443 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Match List - I with List - II :

	List - I (Chemicals)		List - II (Use/Preparation/Constituent)
(a)	Alcoholic potassium hydroxide	(i)	electrodes in batteries
(b)	$Pd/BaSO_4$	(ii)	obtained by addition reaction
(c)	BHC (Benzene hexachloride)	(iii)	used for β-elimination reaction
(d)	Polyacetylene	(iv)	Lindlar's Catalyst

Choose the **most appropriate** match :

Options :

86435116339. (a)-(ii), (b)-(i), (c)-(iv), (d)-(iii)

86435116340. (a)-(iii), (b)-(i), (c)-(iv), (d)-(ii)

86435116341. (a)-(ii), (b)-(iv), (c)-(i), (d)-(iii)

86435116342. (a)-(iii), (b)-(iv), (c)-(ii), (d)-(i)

Question Number : 43 Question Id : 8643515443 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 (રસાયણો)		સૂચી - II (ઉપયોગ/બનાવટ/ઘટક)
(a)	આલ્કોહોલીક પોટેશિયમ હાઈડ્રોક્સાઈડ	(i)	બેટરીઓમાં ઈલેક્ટ્રોડો
(b)	$Pd/BaSO_4$	(ii)	યોગશીલ પ્રક્રિયા વડે મેળવાય છે
(c)	BHC (બેન્ઝિન હેક્ઝાક્લોરાઈડ)	(iii)	β-વિલોપન પ્રક્રિયા માટે ઉપયોગી
(d)	પોલીએસિટિલીન	(iv)	લિન્ડલર ઉદ્દીપક

સૌથી વધુ બંધબેસતી જોડ પસંદ કરો.

Options :

86435116339. (a)-(ii), (b)-(i), (c)-(iv), (d)-(iii)

86435116340. (a)-(iii), (b)-(i), (c)-(iv), (d)-(ii)

86435116341. (a)-(ii), (b)-(iv), (c)-(i), (d)-(iii)

86435116342. (a)-(iii), (b)-(iv), (c)-(ii), (d)-(i)

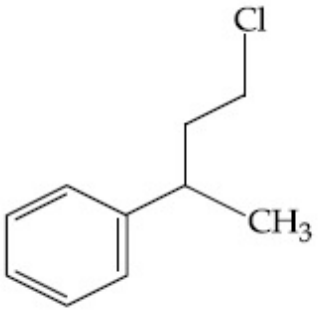
Question Number : 44 Question Id : 8643515444 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

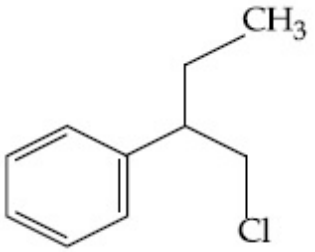
Correct Marks : 4 Wrong Marks : 1

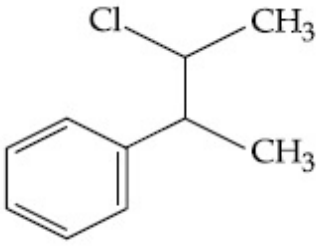
Reaction of Grignard reagent, C_2H_5MgBr with C_8H_8O followed by hydrolysis gives compound "A" which reacts instantly with Lucas reagent to give compound B, $C_{10}H_{13}Cl$.

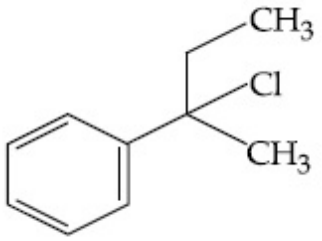
The Compound B is :

Options :

86435116343. 

86435116344. 

86435116345. 



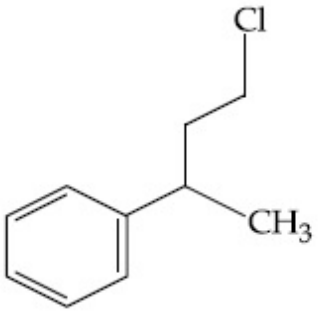
86435116346.

Question Number : 44 Question Id : 8643515444 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

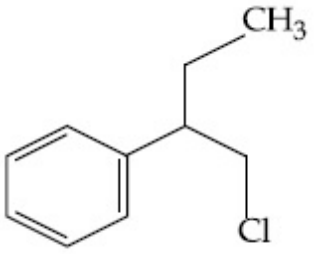
Correct Marks : 4 Wrong Marks : 1

ગ્રિગનાર્ડ પ્રક્રિયક C_2H_5MgBr ની C_8H_8O સાથેની પ્રક્રિયા કરી, જળવિભાજન કરતાં સંયોજન "A" પ્રાપ્ત થાય છે કે જે તરત જ લ્યુકાસ પ્રક્રિયક સાથે પ્રક્રિયા કરીને સંયોજન B, $C_{10}H_{13}Cl$ આપે છે. તો સંયોજન B શોધો.

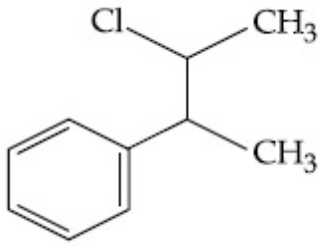
Options :



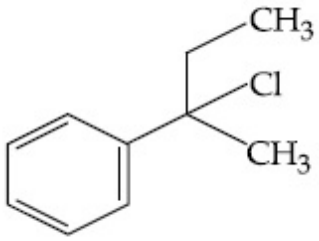
86435116343.



86435116344.



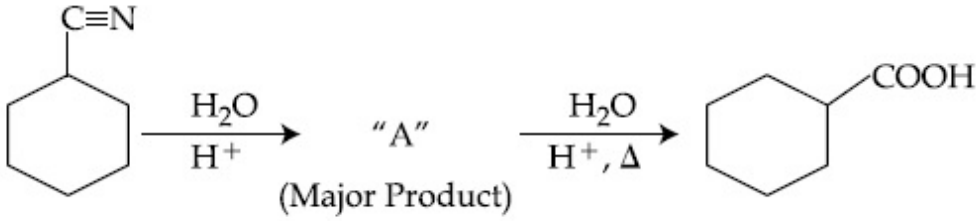
86435116345.



86435116346.

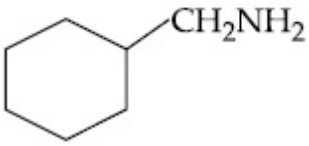
Question Number : 45 Question Id : 8643515445 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

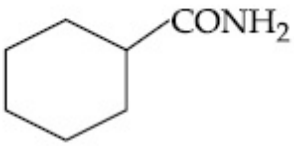


Consider the above chemical reaction and identify product "A" :

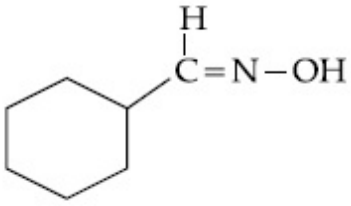
Options :



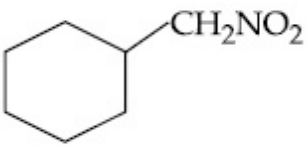
86435116347.



86435116348.



86435116349.

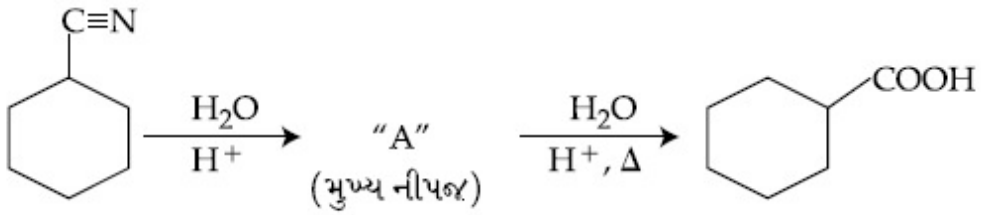


86435116350.

Question Number : 45 Question Id : 8643515445 Question Type : MCQ Option Shuffling : Yes Is

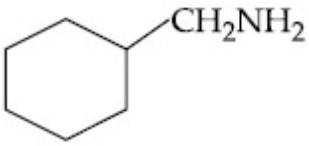
Question Mandatory : No

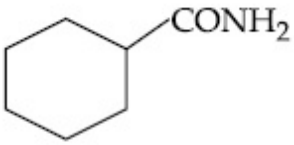
Correct Marks : 4 Wrong Marks : 1

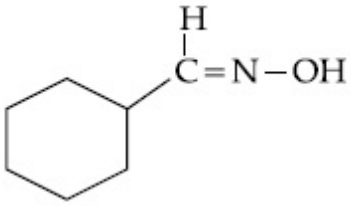


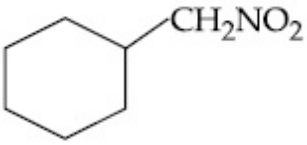
ઉપરની રાસાયણિક પ્રક્રિયાને ધ્યાનમાં લો અને નીપજ "A" ઓળખો.

Options :

86435116347. 

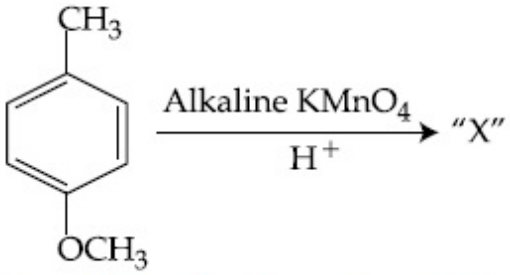
86435116348. 

86435116349. 

86435116350. 

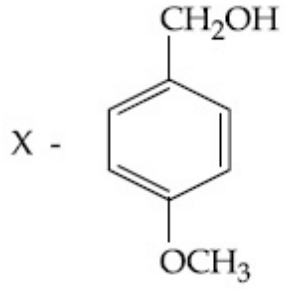
Question Number : 46 Question Id : 8643515446 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

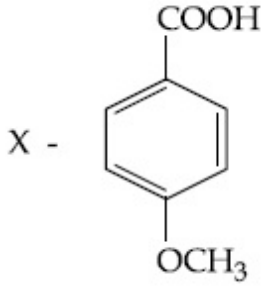
Correct Marks : 4 Wrong Marks : 1

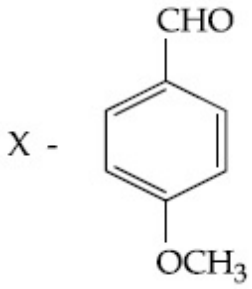


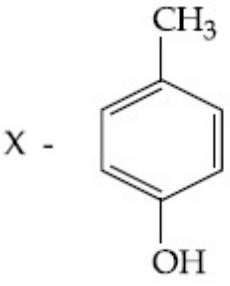
Considering the above chemical reaction, identify the product "X" :

Options :

86435116351. 

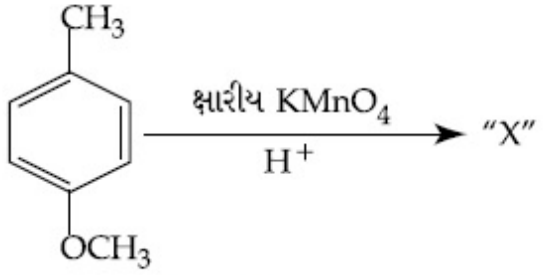
86435116352. 

86435116353. 

86435116354. 

Question Number : 46 Question Id : 8643515446 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

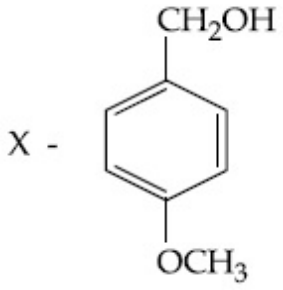
Correct Marks : 4 Wrong Marks : 1



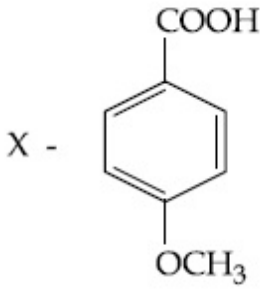
ઉપરની રાસાયણિક પ્રક્રિયાને ધ્યાનમાં લો. નીપજ "X" ને ઓળખો.

Options :

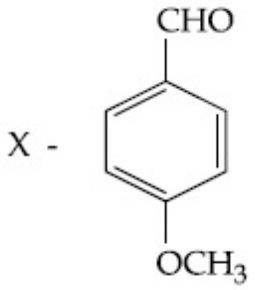
86435116351.



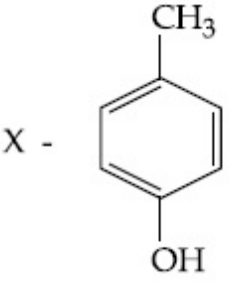
86435116352.



86435116353.

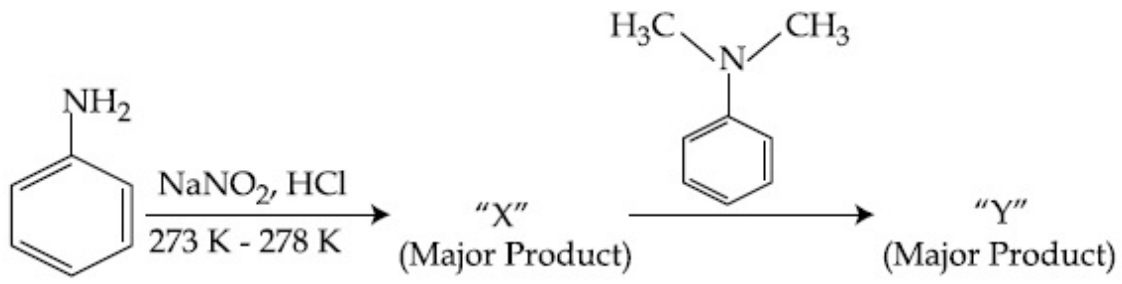


86435116354.



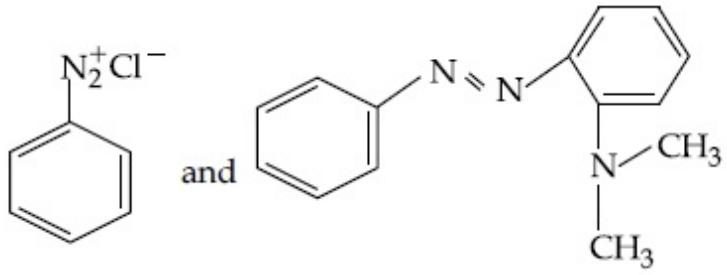
Question Number : 47 Question Id : 8643515447 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

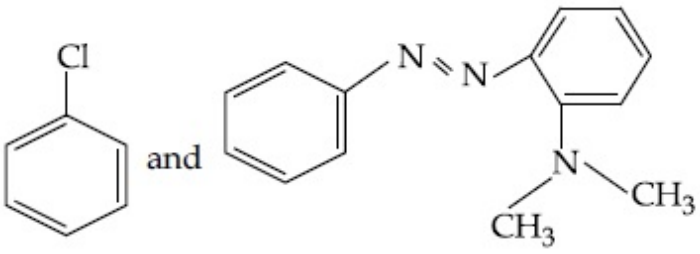
Correct Marks : 4 Wrong Marks : 1

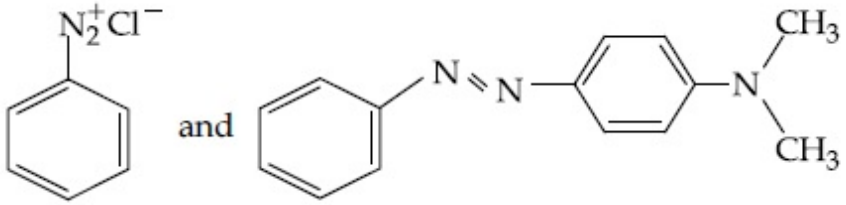


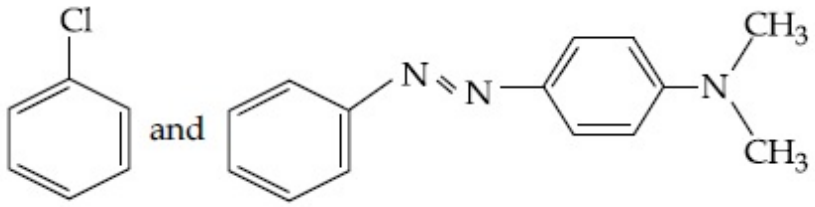
Considering the above reaction, X and Y respectively are :

Options :

86435116355. 

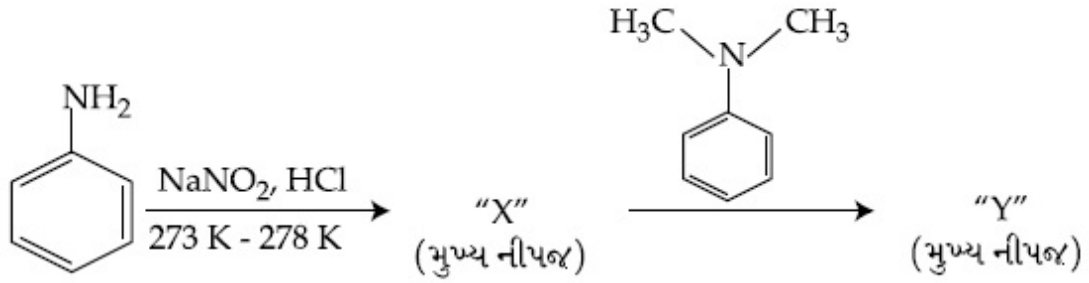
86435116356. 

86435116357. 

86435116358. 

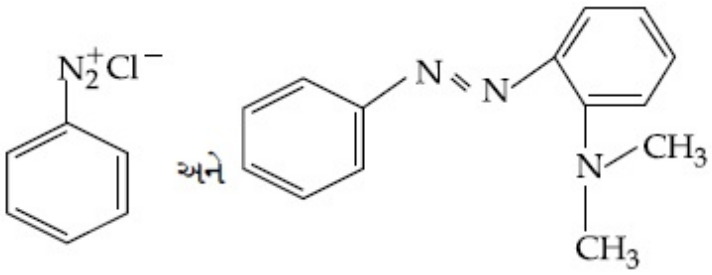
Question Number : 47 Question Id : 8643515447 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

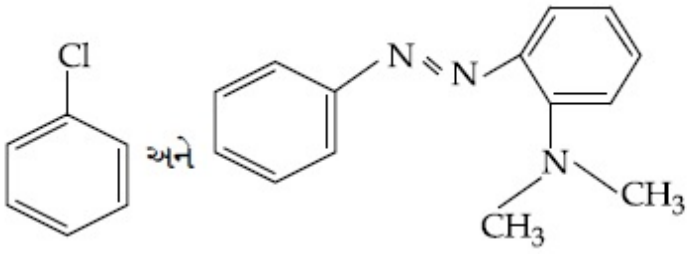
Correct Marks : 4 Wrong Marks : 1

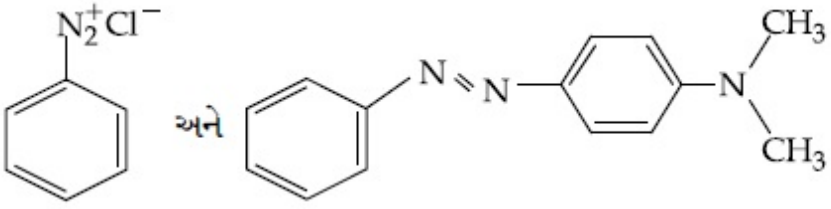


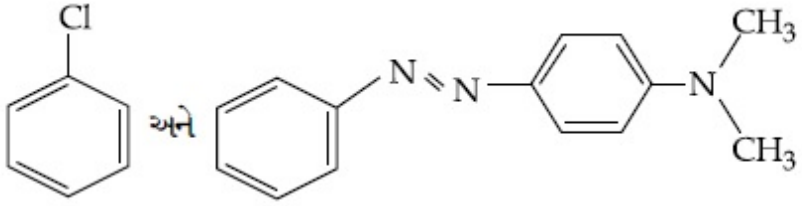
ઉપરની પ્રક્રિયાને ધ્યાનમાં લો. X અને Y અનુક્રમે શોધો.

Options :

86435116355. 

86435116356. 

86435116357. 

86435116358. 

Question Number : 48 Question Id : 8643515448 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Match List - I with List - II :

	List - I (Class of Drug)		List - II (Example)
(a)	Antacid	(i)	Novestrol
(b)	Artificial Sweetener	(ii)	Cimetidine
(c)	Antifertility	(iii)	Valium
(d)	Tranquilizers	(iv)	Alitame

Choose the most appropriate match :

Options :

86435116359. (a)-(ii), (b)-(iv), (c)-(iii), (d)-(i)

86435116360. (a)-(ii), (b)-(iv), (c)-(i), (d)-(iii)

86435116361. (a)-(iv), (b)-(i), (c)-(ii), (d)-(iii)

86435116362. (a)-(iv), (b)-(iii), (c)-(i), (d)-(ii)

Question Number : 48 Question Id : 8643515448 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 (ઔષધનો વર્ગ)		સૂચી - II (ઉદાહરણ)
(a)	પ્રતિએસિડ	(i)	નોવેસ્ટ્રોલ
(b)	કૃત્રિમ ગળ્યા પદાર્થ	(ii)	સિમેટિડીન
(c)	ગર્ભનિરોધકો	(iii)	વેલીયમ
(d)	પ્રશાંતકો	(iv)	એલિટેમ

સૌથી વધુ બંધબેસતી જોડ પસંદ કરો.

Options :

86435116359. (a)-(ii), (b)-(iv), (c)-(iii), (d)-(i)

86435116360. (a)-(ii), (b)-(iv), (c)-(i), (d)-(iii)

86435116361. (a)-(iv), (b)-(i), (c)-(ii), (d)-(iii)

86435116362. (a)-(iv), (b)-(iii), (c)-(i), (d)-(ii)

Question Number : 49 Question Id : 8643515449 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

A non-reducing sugar "A" hydrolyses to give two reducing mono saccharides. Sugar A is :

Options :

86435116363. Glucose

86435116364. Fructose

86435116365. Galactose

86435116366. Sucrose

Question Number : 49 Question Id : 8643515449 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

એક નોન-રિડ્યુસીંગ સુગર (શર્કરા) "A" નું જળવિભાજન થઈને તે બે રિડ્યુસીંગ મોનો સેક્કેરાઈડો આપે છે. શર્કરા A શોધો.

Options :

86435116363. ગ્લુકોઝ

86435116364. ફ્રુક્ટોઝ

86435116365. ગેલેક્ટોઝ

86435116366. સુક્રોઝ

Question Number : 50 Question Id : 8643515450 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Reagent, 1-naphthylamine and sulphanilic acid in acetic acid is used for the detection of :

Options :

86435116367. NO_2^-

86435116368. NO_3^-

86435116369. NO

86435116370. N_2O

Question Number : 50 Question Id : 8643515450 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

એસિટિક એસિડમાં 1-નેપ્થાઈલએમાઈન અને સલ્ફાનિલીક એસિડ પ્રક્રિયક નીચેનામાંથી શોધવા ઉપયોગમાં લેવાય છે તે _____.

Options :

86435116367. NO_2^-

86435116368. NO_3^-

86435116369. NO

86435116370. N_2O

Chemistry Section B

Section Id :	864351364
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 :	864351364
Question Shuffling Allowed :	Yes

Question Number : 51 Question Id : 8643515451 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

Complete combustion of 3 g of ethane gives $x \times 10^{22}$ molecules of water. The value of x is _____. (Round off to the Nearest Integer).

[Use : $N_A = 6.023 \times 10^{23}$; Atomic masses in u : C : 12.0 ; O : 16.0 ; H : 1.0]

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
100

Question Number : 51 Question Id : 8643515451 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

3 g ઈથેનનું સંપૂર્ણ દહન પાણીનાં $x \times 10^{22}$ અણુઓ આપે છે. તો x નું મૂલ્ય _____ છે. (નજીકનાં પૂર્ણાંકમાં રાઉન્ડ ઓફ કરો)

(ઉપયોગ : $N_A = 6.023 \times 10^{23}$; પરમાણ્વીય દળો u માં : C : 12.0 ; O : 16.0 ; H : 1.0]

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
100

Question Number : 52 Question Id : 8643515452 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

AX is a covalent diatomic molecule where A and X are second row elements of periodic table. Based on Molecular orbital theory, the bond order of AX is 2.5. The total number of electrons in AX is _____. (Round off to the Nearest Integer).

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
100

Question Number : 52 Question Id : 8643515452 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

AX એ સહસંયોજક દ્વિપરમાણ્વીક અણુ છે જ્યાં A અને X એ આવર્ત કોષ્ટકના બીજા આવર્તનાં (second row) તત્વો છે. આણ્વીય કક્ષક વાદ ને આધારે, AX નો બંધક્રમાંક 2.5 છે. તો AX માં ઈલેક્ટ્રોનોની કુલ સંખ્યા _____ છે.

(નજીકનાં પૂર્ણાંકમાં રાઉન્ડ ઓફ કરો)

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
100

Question Number : 53 Question Id : 8643515453 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

For the reaction

$$C_2H_6 \rightarrow C_2H_4 + H_2$$

the reaction enthalpy $\Delta_r H =$ _____ kJ mol^{-1}. (Round off to the Nearest Integer).

[Given : Bond enthalpies in kJ mol^{-1} : C – C : 347, C = C : 611;
C – H : 414, H – H : 436]

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
100

Question Number : 53 Question Id : 8643515453 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

$C_2H_6 \rightarrow C_2H_4 + H_2$

પ્રક્રિયા માટે, પ્રક્રિયા એન્થાલ્પી $\Delta_r H =$ _____ kJ mol^{-1} છે. (નજીકનાં પૂર્ણાંકમાં રાઉન્ડ ઓફ કરો)

[આપેલ : બંધ એન્થાલ્પીઓ kJ mol^{-1} માં : C – C : 347, C = C : 611;
C – H : 414, H – H : 436]

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

Text Areas : PlainText
Possible Answers :
100

Question Number : 54 Question Id : 8643515454 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

2 molal solution of a weak acid HA has a freezing point of 3.885°C. The degree of dissociation of this acid is _____ $\times 10^{-3}$. (Round off to the Nearest Integer).

[Given : Molal depression constant of water = 1.85 K kg mol^{-1}

Freezing point of pure water = 0°C]

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
100

Question Number : 54 Question Id : 8643515454 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

નિર્બળ એસિડ HA નું 2 મોલલ દ્રાવણ 3.885°C ઠારબિંદુ ધરાવે છે. આ જ એસિડનો વિયોજન અંશ _____ $\times 10^{-3}$ છે. (નજીકના પૂર્ણાંકમાં રાઉન્ડ ઓફ કરો)

[આપેલ : પાણીનો મોલલ અવનયન અચળાંક = 1.85 K kg mol^{-1}

શુધ્ધ પાણીનું ઠાર બિંદુ = 0°C]

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
100

Question Number : 55 Question Id : 8643515455 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

In order to prepare a buffer solution of pH 5.74, sodium acetate is added to acetic acid. If the concentration of acetic acid in the buffer is 1.0 M, the concentration of sodium acetate in the buffer is _____ M. (Round off to the Nearest Integer).

[Given : pKa (acetic acid) = 4.74]

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
100

Question Number : 55 Question Id : 8643515455 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

pH 5.74 વાળું, બફર દ્રાવણ બનાવવાનાં ક્રમમાં, સોડિયમ એસિટેટને એસિટિક એસિડમાં ઉમેરવામાં આવે છે. જો બફરમાં એસિટિક એસિડની સાંદ્રતા 1.0 M હોય તો, બફરમાં સોડિયમ એસિટેટની સાંદ્રતા _____ M છે. (નજીકનાં પૂર્ણાંકમાં રાઉન્ડ ઓફ કરો)

[આપેલ : pKa (એસિટિક એસિડ) = 4.74]

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
100

Question Number : 56 Question Id : 8643515456 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

For the reaction

$2Fe^{3+}(aq) + 2I^{-}(aq) \rightarrow 2Fe^{2+}(aq) + I_2(s)$

the magnitude of the standard molar free energy change,

$\Delta_r G^{\circ}_m = -$ _____ kJ (Round off to the Nearest Integer).

$$\begin{bmatrix} E^{\circ}_{Fe^{2+}/Fe(s)} = -0.440\ V\ ;\ E^{\circ}_{Fe^{3+}/Fe(s)} = -0.036\ V \\ E^{\circ}_{I_2/2I^{-}} = 0.539\ V\ ; \qquad F = 96500\ C \end{bmatrix}$$

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
100

Question Number : 56 Question Id : 8643515456 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

$2Fe^{3+}(aq) + 2I^{-}(aq) \rightarrow 2Fe^{2+}(aq) + I_2(s)$ પ્રક્રિયા માટે, પ્રમાણિત મોલર મુક્ત ઊર્જા ફેરફારની માત્રા

$\Delta_r G^{\circ}_m = -$ _____ kJ છે. (નજીકનાં પૂર્ણાંકમાં રાઉન્ડ ઓફ કરો)

$$\begin{bmatrix} E^{\circ}_{Fe^{2+}/Fe(s)} = -0.440\ V ; E^{\circ}_{Fe^{3+}/Fe(s)} = -0.036\ V \\ E^{\circ}_{I_2/2I^-} = 0.539\ V ; \quad F = 96500\ C \end{bmatrix}$$

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
100

Question Number : 57 Question Id : 8643515457 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

$2\ NO(g) + Cl_2(g) \rightleftharpoons 2\ NOCl(s)$

This reaction was studied at $-10^{\circ}C$ and the following data was obtained

run	$[NO]_0$	$[Cl_2]_0$	r_0
1	0.10	0.10	0.18
2	0.10	0.20	0.35
3	0.20	0.20	1.40

$[NO]_0$ and $[Cl_2]_0$ are the initial concentrations and r_0 is the initial reaction rate.

The overall order of the reaction is _____. (Round off to the Nearest Integer).

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
100

Question Number : 57 Question Id : 8643515457 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

$2\ NO(g) + Cl_2(g) \rightleftharpoons 2\ NOCl(s)$

આ પ્રક્રિયાનો અભ્યાસ $-10°C$ પર કરવામાં આવ્યો અને નીચે મુજબની માહિતી પ્રાપ્ત થઈ.

ક્રમ (Run)	$[NO]_0$	$[Cl_2]_0$	r_0
1	0.10	0.10	0.18
2	0.10	0.20	0.35
3	0.20	0.20	1.40

$[NO]_0$ અને $[Cl_2]_0$ એ શરૂઆતની સાંદ્રતાઓ છે અને r_0 એ શરૂઆતનો પ્રક્રિયાવેગ છે. તો સમગ્ર પ્રક્રિયાનો ક્રમ (પ્રક્રિયા ક્રમ) _____ છે. (નજીકનાં પૂર્ણાંકમાં રાઉન્ડ ઓફ કરો)

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
100

Question Number : 58 Question Id : 8643515458 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

The total number of unpaired electrons present in the complex $K_3[Cr(oxalate)_3]$ is _____.

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
100

Question Number : 58 Question Id : 8643515458 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

$K_3[Cr(oxalate)_3]$ સંકીર્ણમાં હાજર અયુગ્મિત ઈલેક્ટ્રોનોની કુલ સંખ્યા _____ છે.

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
100

Question Number : 59 Question Id : 8643515459 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

_____ grams of 3-Hydroxy propanal (MW = 74) must be dehydrated to produce 7.8 g of acrolein (MW = 56) (C_3H_4O) if the percentage yield is 64. (Round off to the Nearest Integer).

[Given : Atomic masses : C : 12.0 u, H : 1.0 u, O : 16.0 u]

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
100

Question Number : 59 Question Id : 8643515459 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

જો ટકાવારી નીપજ 64 હોય તો, 7.8 g એક્રોલીન (MW = 56) (C_3H_4O) નું ઉત્પાદન કરવા માટે _____ ગ્રામ 3-હાઈડ્રોક્સી પ્રોપેનાલ (MW = 74) નું નિર્જલીકરણ કરવું જ પડે. (નજીકનાં પૂર્ણાંકમાં રાઉન્ડ ઓફ કરો)

[આપેળ : પરમાણ્વીય દળ : C : 12.0 u, H : 1.0 u, O : 16.0 u]

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
100

Question Number : 60 Question Id : 8643515460 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

A reaction of 0.1 mole of Benzylamine with bromomethane gave 23 g of Benzyl trimethyl ammonium bromide. The number of moles of bromomethane consumed in this reaction are $n \times 10^{-1}$, when n = _____. (Round off to the Nearest Integer).

[Given : Atomic masses : C : 12.0 u, H : 1.0 u, N : 14.0 u, Br : 80.0 u]

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
100

Question Number : 60 Question Id : 8643515460 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

બેન્ઝાઈલએમાઈનનાં 0.1 મોલ સાથે બ્રોમો મિથેનની પ્રક્રિયા કરતાં તે 23 g બેન્ઝાઈલ ટ્રાયમિથાઈલ એમોનિયમ બ્રોમાઈડ આપે છે. તો આ પ્રક્રિયામાં વપરાતાં બ્રોમો મિથેનનાં મોલસ્‌ની સંખ્યા $n \times 10^{-1}$ છે જ્યાં $n =$ _____ છે.
(નજીકનાં પૂર્ણાંકમાં રાઉન્ડ ઓફ કરો)

[આપેળ પરમાણ્વીય દળ : C : 12.0 u, H : 1.0 u, N : 14.0 u, Br : 80.0 u]

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
100

Mathematics Section A

Section Id :	864351365
Section Number :	5
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 :	864351365
Question Shuffling Allowed :	Yes

Question Number : 61 Question Id : 8643515461 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No
Correct Marks : 4 Wrong Marks : 1

If the functions are defined as $f(x) = \sqrt{x}$ and $g(x) = \sqrt{1-x}$, then what is the common domain of the following functions : $f+g,\ f-g,\ f/g,\ g/f,\ g-f$ where

$$(f \pm g)(x) = f(x) \pm g(x),\ (f/g)(x) = \frac{f(x)}{g(x)}$$

Options :

86435116381. $0 \le x < 1$

86435116382. $0 < x < 1$

86435116383. $0 \leq x \leq 1$

86435116384. $0 < x \leq 1$

Question Number : 61 Question Id : 8643515461 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

જો વિધેયો $f(x) = \sqrt{x}$ અને $g(x) = \sqrt{1-x}$ પ્રમાણે વ્યાખ્યાયિત થાય, તો નીચેનાં વિધેયોનો સામાન્ય પ્રદેશ શું થશે ?

$f+g, f-g, f/g, g/f, g-f$ જ્યાં $(f \pm g)(x) = f(x) \pm g(x), (f/g)(x) = \dfrac{f(x)}{g(x)}$

Options :

86435116381. $0 \leq x < 1$

86435116382. $0 < x < 1$

86435116383. $0 \leq x \leq 1$

86435116384. $0 < x \leq 1$

Question Number : 62 Question Id : 8643515462 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

If the equation $a|z|^2 + \overline{\bar{\alpha}z + \alpha\bar{z}} + d = 0$ represents a circle where a, d are real constants, then which of the following condition is correct ?

Options :

86435116385. $|\alpha|^2 - ad \geqslant 0$ and $a \in \mathbf{R}$

86435116386. $|\alpha|^2 - ad > 0$ and $a \in \mathbf{R} - \{0\}$

86435116387. $|\alpha|^2 - ad \neq 0$

86435116388. $\alpha = 0$, $a, d \in \mathbf{R}^+$

Question Number : 62 Question Id : 8643515462 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

જો સમીકરણ $a|z|^2 + \overline{\bar{\alpha}z + \alpha\bar{z}} + d = 0$ વર્તુળ દર્શાવે, જ્યાં a, d વાસ્તવિક અચળો છે, તો નીચેનાં માંથી કઈ શરત સાચી છે ?

Options :

86435116385. $|\alpha|^2 - ad \geq 0$ અને $a \in \mathbf{R}$

86435116386. $|\alpha|^2 - ad > 0$ અને $a \in \mathbf{R} - \{0\}$

86435116387. $|\alpha|^2 - ad \neq 0$

86435116388. $\alpha = 0$, $a, d \in \mathbf{R}^+$

Question Number : 63 Question Id : 8643515463 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Let $A + 2B = \begin{bmatrix} 1 & 2 & 0 \\ 6 & -3 & 3 \\ -5 & 3 & 1 \end{bmatrix}$ and $2A - B = \begin{bmatrix} 2 & -1 & 5 \\ 2 & -1 & 6 \\ 0 & 1 & 2 \end{bmatrix}$. If Tr(A) denotes the sum of all diagonal elements of the matrix A, then Tr(A) – Tr(B) has value equal to :

Options :

86435116389. 1

86435116390. 2

86435116391. 3

86435116392. 0

Question Number : 63 Question Id : 8643515463 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

ધારો કે $A+2B=\begin{bmatrix}1 & 2 & 0\\ 6 & -3 & 3\\ -5 & 3 & 1\end{bmatrix}$ અને $2A-B=\begin{bmatrix}2 & -1 & 5\\ 2 & -1 & 6\\ 0 & 1 & 2\end{bmatrix}$. જો $Tr(A)$ એ શ્રેણિક A નાં બધાંજ વિકર્ણી ઘટકોનો સરવાળો દર્શાવે, તો $Tr(A)-Tr(B)$ = _____

Options :

86435116389. 1

86435116390. 2

86435116391. 3

86435116392. 0

Question Number : 64 Question Id : 8643515464 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Let α, β, γ be the real roots of the equation, $x^3+ax^2+bx+c=0$, (a, b, c $\in$ **R** and a, b $\neq$ 0). If the system of equations (in u, v, w) given by $\alpha u+\beta v+\gamma w=0;\ \beta u+\gamma v+\alpha w=0;$ $\gamma u+\alpha v+\beta w=0$ has non-trivial solution, then the value of $\frac{a^2}{b}$ is :

Options :

86435116393. 0

86435116394. 1

86435116395. 3

86435116396. 5

Question Number : 64 Question Id : 8643515464 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

ધારો કે α, β, γ એ સમીકરણ $x^3+ax^2+bx+c=0$, (a, b, c ϵ **R** અને a, b $\neq$ 0) નાં વાસ્તવિક બીજો છે. જો (u, v, w માં) સમીકરણ સંહતિ $\alpha u+\beta v+\gamma w=0$; $\beta u+\gamma v+\alpha w=0$; $\gamma u+\alpha v+\beta w=0$ ને અસાહજિક ઉકેલો હોય, તો $\frac{a^2}{b}$ નું મૂલ્ય _____ છે.

Options :

86435116393. 0

86435116394. 1

86435116395. 3

86435116396. 5

Question Number : 65 Question Id : 8643515465 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The sum of all the 4-digit distinct numbers that can be formed with the digits 1, 2, 2 and 3 is :

Options :

86435116397. 22264

86435116398. 26664

86435116399. 122234

86435116400. 122664

Question Number : 65 Question Id : 8643515465 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

અંકો 1, 2, 2 અને 3 દ્વારા બનતી 4-અંકોની તમામ ભિન્ન સંખ્યાઓનો સરવાળો _____ થાય.

Options :

86435116397. 22264

86435116398. 26664

86435116399. 122234

86435116400. 122664

Question Number : 66 Question Id : 8643515466 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Let $(1+x+2x^2)^{20}=a_0+a_1x+a_2x^2+....+a_{40}x^{40}$. Then, $a_1+a_3+a_5+.....+a_{37}$ is equal to :

Options :

86435116401. $2^{19}(2^{20}+21)$

86435116402. $2^{20}(2^{20}+21)$

86435116403. $2^{19}(2^{20}-21)$

86435116404. $2^{20}(2^{20}-21)$

Question Number : 66 Question Id : 8643515466 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

ધારો કે $(1+x+2x^2)^{20}=a_0+a_1x+a_2x^2+....+a_{40}x^{40}$. તો $a_1+a_3+a_5+.....+a_{37}$ = _____

Options :

86435116401. $2^{19}(2^{20}+21)$

86435116402. $2^{20}(2^{20}+21)$

86435116403. $2^{19}(2^{20}-21)$

86435116404. $2^{20}(2^{20}-21)$

Question Number : 67 Question Id : 8643515467 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The value of $3+\cfrac{1}{4+\cfrac{1}{3+\cfrac{1}{4+\cfrac{1}{3+\ldots\ldots\infty}}}}$ is equal to :

Options :

86435116405. $1.5+\sqrt{3}$

86435116406. $2+\sqrt{3}$

86435116407. $3+2\sqrt{3}$

86435116408. $4+\sqrt{3}$

Question Number : 67 Question Id : 8643515467 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

$3+\cfrac{1}{4+\cfrac{1}{3+\cfrac{1}{4+\cfrac{1}{3+\ldots\ldots\infty}}}}$ = _____

Options :

86435116405. $1.5+\sqrt{3}$

86435116406. $2+\sqrt{3}$

86435116407. $3+2\sqrt{3}$

86435116408. $4+\sqrt{3}$

Question Number : 68 Question Id : 8643515468 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

$\frac{1}{3^2-1}+\frac{1}{5^2-1}+\frac{1}{7^2-1}+\ldots\ldots+\frac{1}{(201)^2-1}$ is equal to :

Options :

86435116409. $\frac{25}{101}$

86435116410. $\frac{101}{408}$

86435116411. $\frac{99}{400}$

86435116412. $\frac{101}{404}$

Question Number : 68 Question Id : 8643515468 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

$$\frac{1}{3^2-1}+\frac{1}{5^2-1}+\frac{1}{7^2-1}+\ldots\ldots+\frac{1}{(201)^2-1}=\_\_\_\_\_$$

Options :

86435116409. $\frac{25}{101}$

86435116410. $\frac{101}{408}$

86435116411. $\frac{99}{400}$

86435116412. $\frac{101}{404}$

Question Number : 69 Question Id : 8643515469 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

If α, β are natural numbers such that $100^{\alpha}-199\beta=(100)(100)+(99)(101)+(98)(102)+\ldots\ldots+(1)(199)$, then the slope of the line passing through (α, β) and origin is :

Options :

86435116413. 510

86435116414. 530

86435116415. 540

86435116416. 550

Question Number : 69 Question Id : 8643515469 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

પ્રાકૃતિક સંખ્યાઓ α, β માટે જો $100^{\alpha} - 199\beta = (100)(100) + (99)(101) + (98)(102) + \ldots\ldots + (1)(199)$, હોય, તો (α, β) તથા ઊગમબિંદુમાંથી પસાર થતી રેખાનો ઢાળ _____ છે.

Options :

86435116413. 510

86435116414. 530

86435116415. 540

86435116416. 550

Question Number : 70 Question Id : 8643515470 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

If $f(x) = \begin{cases} \frac{1}{|x|} & ; |x| \geq 1 \\ ax^2 + b & ; |x| < 1 \end{cases}$ is differentiable at every point of the domain, then the values of a and b are respectively :

Options :

86435116417. $\frac{1}{2}, \frac{1}{2}$

86435116418. $-\frac{1}{2}, \frac{3}{2}$

86435116419. $\frac{5}{2}, -\frac{3}{2}$

86435116420. $\frac{1}{2}, -\frac{3}{2}$

Question Number : 70 Question Id : 8643515470 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

જો $f(x) = \begin{cases} \frac{1}{|x|} & ; |x| \geq 1 \\ ax^2 + b ; & |x| < 1 \end{cases}$ એ પ્રદેશનાં દરેક બિંદુ પાસે વિકલનીય હોય, તો a તથા b ની અનુક્રમે કિંમત

_____ છે.

Options :

86435116417. $\frac{1}{2}, \frac{1}{2}$

86435116418. $-\frac{1}{2}, \frac{3}{2}$

86435116419. $\frac{5}{2}, -\frac{3}{2}$

86435116420. $\frac{1}{2}, -\frac{3}{2}$

Question Number : 71 Question Id : 8643515471 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The real valued function $f(x) = \frac{\text{cosec}^{-1}x}{\sqrt{x - [x]}}$, where $[x]$ denotes the greatest integer less than or equal to x, is defined for all x belonging to :

Options :

86435116421. all reals except integers

86435116422. all reals except the interval $[-1, 1]$

86435116423. all non-integers except the interval $[-1, 1]$

86435116424. all integers except $0, -1, 1$

Question Number : 71 Question Id : 8643515471 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

જો $[x]$ એ x અથવા x થી નાનો મહત્તમ પૂર્ણાંક દર્શાવે, તો વાસ્તવિક મૂલ્યવાળું વિધેય $f(x) = \frac{\text{cosec}^{-1}x}{\sqrt{x-[x]}}$ એ _____ માં સમાયેલ દરેક x માટે વ્યાખ્યાયિત છે.

Options :

86435116421. પૂર્ણાંકો સિવાયનાં દરેક વાસ્તવિકો

86435116422. અંતરાલ $[-1, 1]$ સિવાયનાં દરેક વાસ્તવિકો

86435116423. અંતરાલ $[-1, 1]$ સિવાયની દરેક પૂર્ણાંક રહિત સંખ્યાઓ

86435116424. $0, -1, 1$ સિવાયનાં દરેક પૂર્ણાંકો

Question Number : 72 Question Id : 8643515472 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

If $\lim\limits_{x\to 0}\frac{\sin^{-1}x - \tan^{-1}x}{3x^3}$ is equal to L, then the value of $(6L+1)$ is :

Options :

86435116425. $\frac{1}{6}$

86435116426. 6

86435116427. 2

86435116428. $\frac{1}{2}$

Question Number : 72 Question Id : 8643515472 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

જો $\lim_{x\to 0}\frac{\sin^{-1}x-\tan^{-1}x}{3x^3}$ = L હોય, તો (6L + 1) નું મૂલ્ય _____ થાય.

Options :

86435116425. $\frac{1}{6}$

86435116426. 6

86435116427. 2

86435116428. $\frac{1}{2}$

Question Number : 73 Question Id : 8643515473 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The integral $\int\frac{(2x-1)\cos\sqrt{(2x-1)^2+5}}{\sqrt{4x^2-4x+6}}dx$ is equal to :

(where c is a constant of integration)

Options :

86435116429. $\frac{1}{2}\sin\sqrt{(2x+1)^2+5}+c$

86435116430. $\frac{1}{2}\sin\sqrt{(2x-1)^2+5}+c$

86435116431. $\frac{1}{2}\cos\sqrt{(2x-1)^2+5}+c$

86435116432. $\frac{1}{2}\cos\sqrt{(2x+1)^2+5}+c$

Question Number : 73 Question Id : 8643515473 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

સંકલ $\int \frac{(2x-1)\cos\sqrt{(2x-1)^2+5}}{\sqrt{4x^2-4x+6}}\,dx$ = _____

(જ્યાં c એ સંકલનો અચળ છે)

Options :

86435116429. $\frac{1}{2}\sin\sqrt{(2x+1)^2+5}+c$

86435116430. $\frac{1}{2}\sin\sqrt{(2x-1)^2+5}+c$

86435116431. $\frac{1}{2}\cos\sqrt{(2x-1)^2+5}+c$

86435116432. $\frac{1}{2}\cos\sqrt{(2x+1)^2+5}+c$

Question Number : 74 Question Id : 8643515474 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The differential equation satisfied by the system of parabolas $y^2=4a(x+a)$ is :

Options :

86435116433. $y\left(\frac{dy}{dx}\right)^2+2x\left(\frac{dy}{dx}\right)-y=0$

86435116434. $y\left(\frac{dy}{dx}\right)+2x\left(\frac{dy}{dx}\right)-y=0$

86435116435. $y\left(\frac{dy}{dx}\right)^2-2x\left(\frac{dy}{dx}\right)+y=0$

86435116436. $y\left(\frac{dy}{dx}\right)^2-2x\left(\frac{dy}{dx}\right)-y=0$

Question Number : 74 Question Id : 8643515474 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

પરવલયો $y^2 = 4a(x+a)$ ની સંહતીનું સમાધાન કરતું વિકલ સમીકરણ _____ છે.

Options :

86435116433. $y\left(\frac{dy}{dx}\right)^2 + 2x\left(\frac{dy}{dx}\right) - y = 0$

86435116434. $y\left(\frac{dy}{dx}\right) + 2x\left(\frac{dy}{dx}\right) - y = 0$

86435116435. $y\left(\frac{dy}{dx}\right)^2 - 2x\left(\frac{dy}{dx}\right) + y = 0$

86435116436. $y\left(\frac{dy}{dx}\right)^2 - 2x\left(\frac{dy}{dx}\right) - y = 0$

Question Number : 75 Question Id : 8643515475 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Choose the correct statement about two circles whose equations are given below :

$x^2 + y^2 - 10x - 10y + 41 = 0$

$x^2 + y^2 - 22x - 10y + 137 = 0$

Options :

86435116437. circles have two meeting points

86435116438. circles have no meeting point

86435116439. circles have only one meeting point

86435116440. circles have same centre

Question Number : 75 Question Id : 8643515475 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

નીચે આપેલ સમીકરણોવાળા બે વર્તુળો માટે સાચું વિધાન પસંદ કરો :

$x^2 + y^2 - 10x - 10y + 41 = 0$

$x^2 + y^2 - 22x - 10y + 137 = 0$

Options :

86435116437. વર્તુળોને બે મિલન બિંદુઓ છે

86435116438. વર્તુળોને મિલન બિંદુ નથી

86435116439. વર્તુળોને ફક્ત એક મિલન બિંદુ છે

86435116440. વર્તુળોને સમાન કેન્દ્ર છે

Question Number : 76 Question Id : 8643515476 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

For the four circles M, N, O and P, following four equations are given :

Circle M : $x^2+y^2=1$

Circle N : $x^2+y^2-2x=0$

Circle O : $x^2+y^2-2x-2y+1=0$

Circle P : $x^2+y^2-2y=0$

If the centre of circle M is joined with centre of the circle N, further centre of circle N is joined with centre of the circle O, centre of circle O is joined with the centre of circle P and lastly, centre of circle P is joined with centre of circle M, then these lines form the sides of a :

Options :

86435116441. Rectangle

86435116442. Rhombus

86435116443. Square

86435116444. Parallelogram

Question Number : 76 Question Id : 8643515476 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

ચાર વર્તુળો M, N, O અને P માટે નીચેનાં ચાર સમીકરણો આપેલ છે :

વર્તુળ M : $x^2+y^2=1$

વર્તુળ N : $x^2+y^2-2x=0$

વર્તુળ O : $x^2+y^2-2x-2y+1=0$

વર્તુળ P : $x^2+y^2-2y=0$

જો વર્તુળ M નાં કેન્દ્રને વર્તુળ N નાં કેન્દ્ર સાથે જોડવામાં આવે, આ ઉપરાંત વર્તુળ N નાં કેન્દ્રને વર્તુળ O નાં કેન્દ્ર સાથે જોડવામાં આવે, વર્તુળ O નાં કેન્દ્રને વર્તુળ P નાં કેન્દ્ર સાથે જોડવામાં આવે અને અંતમાં વર્તુળ P નાં કેન્દ્રને વર્તુળ M નાં કેન્દ્ર સાથે જોડવામાં આવે, તો આ રેખાઓ _____ ની બાજુઓ બનાવે છે.

Options :

86435116441. લંબચોરસ

86435116442. સમબાજુ ચતુષ્કોણ

86435116443. ચોરસ

86435116444. સમાંતરબાજુ ચતુષ્કોણ

Question Number : 77 Question Id : 8643515477 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The number of integral values of m so that the abscissa of point of intersection of lines $3x+4y=9$ and $y=mx+1$ is also an integer, is :

Options :

86435116445. 0

86435116446. 1

86435116447. 2

86435116448. 3

Question Number : 77 Question Id : 8643515477 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

સુરેખાઓ $3x+4y=9$ અને $y=mx+1$ નાં છેદબિંદુની ભુજા પૂર્ણાંક થાય તેવી m ની પૂર્ણાંક કિંમતોની સંખ્યા _____ છે.

Options :

86435116445. 0

86435116446. 1

86435116447. 2

86435116448. 3

Question Number : 78 Question Id : 8643515478 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The equation of one of the straight lines which passes through the point (1, 3) and makes an angle $\tan^{-1}(\sqrt{2})$ with the straight line, $y+1=3\sqrt{2}\,x$ is :

Options :

86435116449. $4\sqrt{2}\,x+5y-(15+4\sqrt{2})=0$

86435116450. $4\sqrt{2}\,x-5y-(5+4\sqrt{2})=0$

86435116451. $5\sqrt{2}\,x+4y-(15+4\sqrt{2})=0$

86435116452. $4\sqrt{2}\,x+5y-4\sqrt{2}=0$

Question Number : 78 Question Id : 8643515478 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

બિંદુ (1, 3) માંથી પસાર થતી અને સુરેખા $y+1=3\sqrt{2}\,x$ સાથે $\alpha=\tan^{-1}(\sqrt{2})$ જેટલો ખૂણો બનાવતી સુરેખાઓમાંની એકનું સમીકરણ _____ છે.

Options :

86435116449. $4\sqrt{2}\,x+5y-(15+4\sqrt{2})=0$

86435116450. $4\sqrt{2}\,x-5y-(5+4\sqrt{2})=0$

86435116451. $5\sqrt{2}\,x + 4y - (15 + 4\sqrt{2}) = 0$

86435116452. $4\sqrt{2}\,x + 5y - 4\sqrt{2} = 0$

Question Number : 79 Question Id : 8643515479 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The solutions of the equation

$$\begin{vmatrix} 1+\sin^2 x & \sin^2 x & \sin^2 x \\ \cos^2 x & 1+\cos^2 x & \cos^2 x \\ 4\sin 2x & 4\sin 2x & 1+4\sin 2x \end{vmatrix} = 0,\ (0 < x < \pi),\ \text{are :}$$

Options :

86435116453. $\frac{\pi}{6}, \frac{5\pi}{6}$

86435116454. $\frac{5\pi}{12}, \frac{7\pi}{12}$

86435116455. $\frac{7\pi}{12}, \frac{11\pi}{12}$

86435116456. $\frac{\pi}{12}, \frac{\pi}{6}$

Question Number : 79 Question Id : 8643515479 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

સમીકરણ :

$$\begin{vmatrix} 1+\sin^2 x & \sin^2 x & \sin^2 x \\ \cos^2 x & 1+\cos^2 x & \cos^2 x \\ 4\sin 2x & 4\sin 2x & 1+4\sin 2x \end{vmatrix} = 0,\ (0 < x < \pi)$$ નાં ઉકેલો _____ છે.

Options :

86435116453. $\frac{\pi}{6}, \frac{5\pi}{6}$

86435116454. $\frac{5\pi}{12}, \frac{7\pi}{12}$

86435116455. $\frac{7\pi}{12}, \frac{11\pi}{12}$

86435116456. $\frac{\pi}{12}, \frac{\pi}{6}$

Question Number : 80 Question Id : 8643515480 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No
Correct Marks : 4 Wrong Marks : 1

A vector $\vec{a}$ has components 3p and 1 with respect to a rectangular cartesian system. This system is rotated through a certain angle about the origin in the counter clockwise sense. If, with respect to new system, $\vec{a}$ has components $p+1$ and $\sqrt{10}$, then a value of p is equal to :

Options :

86435116457. 1

86435116458. -1

86435116459. $\frac{4}{5}$

86435116460. $-\frac{5}{4}$

Question Number : 80 Question Id : 8643515480 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No
Correct Marks : 4 Wrong Marks : 1

લંબચોરસ કાર્તેઝીય સંહતિ સાપેક્ષ સદિશ $\vec{a}$ નાં સંઘટકો $3p$ અને 1 છે. આ સંહતિનું ઊગમબિંદુ ફરતે ઘડિયાલનાં કાંટાની વિરૂધ્ધ દિશામાં અમુક ખૂણા જેટલું પરિભ્રમણ કરવામાં આવે છે. જો આ નવી સંહતિ સાપેક્ષ $\vec{a}$ નાં સંઘટકો $p+1$ અને $\sqrt{10}$ હોય તો $p =$ _____.

Options :

86435116457. 1

86435116458. -1

86435116459. $\frac{4}{5}$

86435116460. $-\frac{5}{4}$

Mathematics Section B

Section Id :	864351366
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 :	864351366
Question Shuffling Allowed :	Yes

Question Number : 81 Question Id : 8643515481 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

Let z_1, z_2 be the roots of the equation $z^2+az+12=0$ and z_1, z_2 form an equilateral triangle with origin. Then, the value of $|a|$ is _____.

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

100

Question Number : 81 Question Id : 8643515481 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

ધારો કે z_1, z_2 એ સમીકરણ $z^2+az+12=0$ ના બીજ છે અને z_1, z_2 એ ઊગમબિંદુ સાથે સમબાજુ ત્રિકોણ બનાવે છે. તો $|a|$ નું મૂલ્ય _____ છે.

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
100

Question Number : 82 Question Id : 8643515482 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

Let $f(x)$ and $g(x)$ be two functions satisfying $f(x^2)+g(4-x)=4x^3$ and $g(4-x)+g(x)=0$, then the value of $\int_{-4}^{4} f(x^2)dx$ is _____.

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
100

Question Number : 82 Question Id : 8643515482 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

ધારો કે $f(x)$ અને $g(x)$ એ $f(x^2)+g(4-x)=4x^3$ અને $g(4-x)+g(x)=0$ નું સમાધાન કરતાં બે વિધેયો છે. તો $\int_{-4}^{4} f(x^2)dx$ નું મૂલ્ય _____ છે.

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

100

Question Number : 83 Question Id : 8643515483 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

If $f(x)=\int\frac{5x^8+7x^6}{(x^2+1+2x^7)^2}\,dx$, $(x \geqslant 0)$, $f(0)=0$ and $f(1)=\frac{1}{K}$, then the value of K is

_____.

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
100

Question Number : 83 Question Id : 8643515483 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

જો $f(x)=\int\frac{5x^8+7x^6}{(x^2+1+2x^7)^2}\,dx$, $(x \geqslant 0)$, $f(0)=0$ અને $f(1)=\frac{1}{K}$ હોય, તો K નું મૂલ્ય _____ છે.

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
100

Question Number : 84 Question Id : 8643515484 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

A square ABCD has all its vertices on the curve $x^2y^2=1$. The midpoints of its sides also lie on the same curve. Then, the square of area of ABCD is _____.

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
100

Question Number : 84 Question Id : 8643515484 Question Type : SA

Correct Marks : 4 Wrong Marks : 0

ચોરસ ABCD નાં બધાજ શિરોબિંદુઓ વક્ર $x^2y^2=1$ પર આવેલા છે. તેની બાજુઓનાં મધ્યબિંદુઓ પણ તે જ વક્ર પર આવેલા છે. તો ABCD નાં ક્ષેત્રફળનો વર્ગ _____ છે.

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
100

Question Number : 85 Question Id : 8643515485 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

Let the plane $ax+by+cz+d=0$ bisect the line joining the points $(4, -3, 1)$ and $(2, 3, -5)$ at the right angles. If a, b, c, d are integers, then the minimum value of $(a^2+b^2+c^2+d^2)$ is _____.

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
100

Question Number : 85 Question Id : 8643515485 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

ધારો કે સમતલ $ax+by+cz+d=0$ એ બિંદુઓ $(4, -3, 1)$ અને $(2, 3, -5)$ ને જોડતી રેખાને કાટખૂણે દુભાગે છે. જો a, b, c, d પૂર્ણાંકો હોય, તો $(a^2+b^2+c^2+d^2)$ ની ન્યૂનતમ કિંમત _____ છે.

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
100

Question Number : 86 Question Id : 8643515486 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

The equation of the planes parallel to the plane $x-2y+2z-3=0$ which are at unit distance from the point (1, 2, 3) is $ax+by+cz+d=0$. If $(b-d)=K(c-a)$, then the positive value of K is _____.

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
100

Question Number : 86 Question Id : 8643515486 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

સમતલ $x-2y+2z-3=0$ ને સમાંતર તથા બિંદુ (1, 2, 3) થી એકમ અંતરે આવેલ સમતલોનું સમીકરણ $ax+by+cz+d=0$ છે. જો $(b-d)=K(c-a)$ હોય, તો K નું ધન મૂલ્ય _____ છે.

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
100

Question Number : 87 Question Id : 8643515487 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

The mean age of 25 teachers in a school is 40 years. A teacher retires at the age of 60 years and a new teacher is appointed in his place. If the mean age of the teachers in this school now is 39 years, then the age (in years) of the newly appointed teacher is _____.

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
100

Question Number : 87 Question Id : 8643515487 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

એક શાળામાં 25 શિક્ષકોનાં ઉંમરની સરેરાશ 40 વર્ષ છે. એક શિક્ષક 60 વર્ષની ઉંમરે નિવૃત્ત થાય છે અને તેમની જગ્યાએ નવા શિક્ષકની નિમણુંક કરવામાં આવે છે. હવે જો આ શાળાનાં શિક્ષકોની સરેરાશ ઉંમર 39 વર્ષ હોય, તો નવા નિમણુંક પામેલ શિક્ષકની ઉંમર (વર્ષમાં) _____ હશે.

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
100

Question Number : 88 Question Id : 8643515488 Question Type : SA
Correct Marks : 4 Wrong Marks : 0
The number of times the digit 3 will be written when listing the integers from 1 to 1000 is _____.

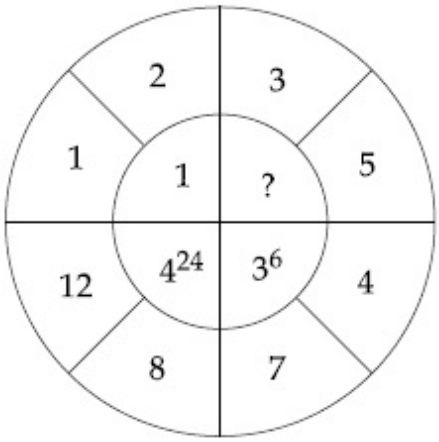
Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
100

Question Number : 88 Question Id : 8643515488 Question Type : SA
Correct Marks : 4 Wrong Marks : 0
1 થી 1000 સુધીનાં પૂર્ણાંકોની સૂચી બનાવતી વખતે અંક 3 ને _____ વખત લખવામાં આવે છે.

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
100

Question Number : 89 Question Id : 8643515489 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

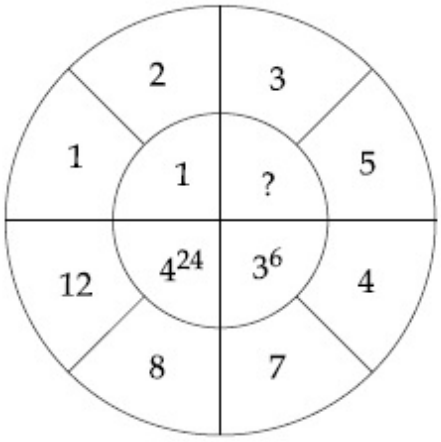
The missing value in the following figure is _____.



Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
100

Question Number : 89 Question Id : 8643515489 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

નીચેની આકૃતિમાં ખૂટતી કિંમત _____ છે.



Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
100

Question Number : 90 Question Id : 8643515490 Question Type : SA

Correct Marks : 4 Wrong Marks : 0

The number of solutions of the equation $|\cot x| = \cot x + \frac{1}{\sin x}$ in the interval $[0, 2\pi]$ is

_____.

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
100

Question Number : 90 Question Id : 8643515490 Question Type : SA
Correct Marks : 4 Wrong Marks : 0

સમીકરણ $|\cot x| = \cot x + \frac{1}{\sin x}$ નાં અંતરાલ $[0, 2\pi]$ માં ઉકેલોની સંખ્યા _____ છે.

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
100