

Sub-Section Number: 1
Sub-Section Id: 405036124
Question Shuffling Allowed : Yes

Question Number : 26 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 4 Wrong Marks : 1

The de Broglie wavelength of an electron
in the 4th Bohr orbit is :

Options :

1. $4\pi a_0$

2. $8\pi a_0$

3. $6\pi a_0$

4. $2\pi a_0$

Question Number : 26 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 4 Wrong Marks : 1

चौथी बोर कक्षा में एक इलेक्ट्रॉन की डी-ब्रोग्ली तरंगदैर्घ्य
होगी :

Options :

1. $4\pi a_0$

2. $8\pi a_0$

3. $6\pi a_0$

4. $2\pi a_0$

Question Number : 26 Question Type : MCQ Option Shuffling : Yes

Correct Marks : 4 Wrong Marks : 1

4थी ँहोर कक्षाभां रहेला अेक ँलेक्त्रोननी डी-अ्रोखी तरंगलंबार्थ शोधे :

Options :

1. $4\pi a_0$

2. $8\pi a_0$

3. $6\pi a_0$

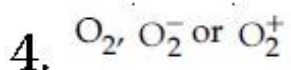
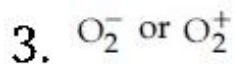
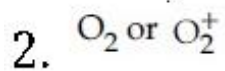
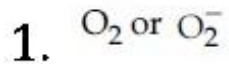
4. $2\pi a_0$

Question Number : 27 Question Type : MCQ Option Shuffling : Yes

Correct Marks : 4 Wrong Marks : 1

If the magnetic moment of a dioxygen species is 1.73 B.M, it may be :

Options :



Question Number : 27 Question Type : MCQ Option Shuffling : Yes

Correct Marks : 4 Wrong Marks : 1

एक डार्डऑक्सीजन स्पीशीज का चुम्बकीय आघूर्ण 1.73 B.M है, यह हो सकती है :

Options :

1. O_2 અથવા O_2^-
2. O_2 અથવા O_2^+
3. O_2^- અથવા O_2^+
4. O_2 , O_2^- અથવા O_2^+

Question Number : 27 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 4 Wrong Marks : 1

એક ડાયઓક્સિજન સ્પીસીઝ ની ચુંબકીય ચાકમાત્રા
1.73 B.M છે તો તે હોય શકે :

Options :

1. O_2 અથવા O_2^-
2. O_2 અથવા O_2^+
3. O_2^- અથવા O_2^+
4. O_2 , O_2^- અથવા O_2^+

Question Number : 28 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 4 Wrong Marks : 1

If enthalpy of atomisation for $Br_2(l)$ is
 x kJ/mol and bond enthalpy for Br_2 is
 y kJ/mol, the relation between them :

Options :

1. $x = y$

2. $x > y$

3. $x < y$

4. does not exist

Question Number : 28 Question Type : MCQ Option Shuffling : Yes

Correct Marks : 4 Wrong Marks : 1

यदि $\text{Br}_{2(l)}$ के लिए कणन एन्थैल्पी $x \text{ kJ/mol}$ हो
तथा Br_2 के लिए आबन्ध एन्थैल्पी $y \text{ kJ/mol}$ हो, तो
उनके बीच सम्बन्ध :

Options :

1. $x = y$ होगा

2. $x > y$ होगा

3. $x < y$ होगा

4. बनता नहीं है।

Question Number : 28 Question Type : MCQ Option Shuffling : Yes

Correct Marks : 4 Wrong Marks : 1

$\text{Br}_{2(l)}$ ની પરમાણ્વીય કરણ એન્થાલ્પી $x \text{ kJ/mol}$ છે
અને Br_2 માટે બંધ એન્થાલ્પી $y \text{ kJ/mol}$ છે. તો તેમની
વચ્ચેનો સંબંધ :

Options :

1. $x = y$ છે

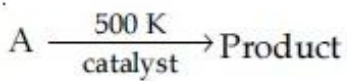
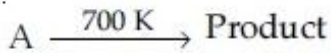
2. $x > y$ છે

3. $x < y$ છે

4. અસ્તિત્વ ધરાવતો નથી

Question Number : 29 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 4 Wrong Marks : 1

For following reactions



it was found that the E_a is decreased by 30 kJ/mol in the presence of catalyst. If the rate remains unchanged, the activation energy for catalysed reaction is (Assume pre exponential factor is same) :

Options :

1. 105 kJ/mol

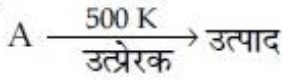
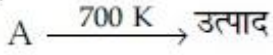
2. 135 kJ/mol

3. 75 kJ/mol

4. 198 kJ/mol

Question Number : 29 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 4 Wrong Marks : 1

निम्न अभिक्रियाओं के लिए



यह पाया गया कि उत्प्रेरक की उपस्थिति में E_a , 30 kJ/mol से घट गई। यदि दर अपरिवर्तित रहे तो उत्प्रेरित अभिक्रिया के लिए संक्रियण ऊर्जा होगी (मान लीजिये पूर्व चरघातांकी गुणक वही रहता है) :

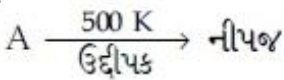
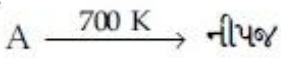
Options :

1. 105 kJ/mol
2. 135 kJ/mol
3. 75 kJ/mol
4. 198 kJ/mol

Question Number : 29 Question Type : MCQ Option Shuffling : Yes

Correct Marks : 4 Wrong Marks : 1

નીચેની પ્રક્રિયાઓ માટે,



એવું જાણવા મળ્યું કે ઉદ્દીપકની હાજરીમાં E_a માં 30 kJ/mol જેટલો ઘટાડો થાય છે. જો પ્રક્રિયા દર બદલાતો ન હોય તો, ઉદ્દીપકીય પ્રક્રિયા માટેની સક્રિયકરણ શક્તિ, (ધારીલો કે પૂર્વઘાતાંકીય અવયવ સમાન છે.) શોધો :

Options :

1. 105 kJ/mol

2. 135 kJ/mol

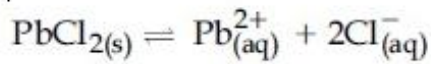
3. 75 kJ/mol

4. 198 kJ/mol

Question Number : 30 Question Type : MCQ Option Shuffling : Yes

Correct Marks : 4 Wrong Marks : 1

The K_{sp} for the following dissociation is 1.6×10^{-5}



Which of the following choices is correct for a mixture of 300 mL 0.134 M $\text{Pb}(\text{NO}_3)_2$ and 100 mL 0.4 M NaCl ?

Options :

1. $Q > K_{sp}$

2. $Q = K_{sp}$

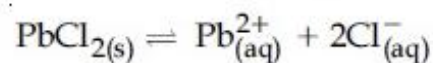
3. Not enough data provided

4. $Q < K_{sp}$

Question Number : 30 Question Type : MCQ Option Shuffling : Yes

Correct Marks : 4 Wrong Marks : 1

निम्न वियोजन के लिये K_{sp} का मान 1.6×10^{-5} है,



0.134 M $\text{Pb}(\text{NO}_3)_2$ के 300 mL तथा 0.4 M NaCl के 100 mL को मिलाकर बनाये गये मिश्रण के लिए निम्न में से कौन सा विकल्प सही है?

Options :

1. $Q > K_{sp}$

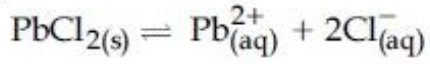
2. $Q = K_{sp}$

3. પર્યાપ્ત ઑકડા ડપલબ્ધ નહીં

4. $Q < K_{sp}$

Question Number : 30 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 4 Wrong Marks : 1

નીચેના વલચોજન માટે K_{sp} 1.6×10^{-5} છે.



નીચે આપેલી પસંદગીઓ પૈકી કઈ એક 300 mL
0.134 M $Pb(NO_3)_2$ અને 100 mL 0.4 M NaCl
ના મલશ્રણ માટે સાચી છે ?

Options :

1. $Q > K_{sp}$

2. $Q = K_{sp}$

3. પુસ્તી માહલતિ ડપલબ્ધ નથી

4. $Q < K_{sp}$

Question Number : 31 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 4 Wrong Marks : 1

'X' melts at low temperature and is a bad conductor of electricity in both liquid and solid state. X is :

Options :

1. Zinc sulphide
2. Carbon tetrachloride
3. Silicon carbide
4. Mercury

Question Number : 31 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 4 Wrong Marks : 1

'X' निम्न ताप पर पिघलता है तथा द्रव तथा ठोस दोनों अवस्थाओं में विद्युत का कुचालक है। X है :

Options :

1. जिंक सल्फाइड
2. कार्बन टेट्राक्लोराइड
3. सिलिकान कार्बाइड
4. मर्करी

Question Number : 31 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 4 Wrong Marks : 1

'X' ઓછા તાપમાને પિગળે છે અને તે બંને પ્રવાહી અને ઘન અવસ્થાઓમાં વિદ્યુત પ્રવાહનો ખરાબ વાહક છે તો X શોધો.

Options :

1. ઝિંક સલ્ફાઇડ
2. કાર્બન ટેટ્રાક્લોરાઇડ
3. સિલિકોન કાર્બાઇડ
4. મરક્યુરી

Question Number : 32 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 4 Wrong Marks : 1

B has a smaller first ionization enthalpy than Be. Consider the following statements :

- (I) it is easier to remove 2p electron than 2s electron
- (II) 2p electron of B is more shielded from the nucleus by the inner core of electrons than the 2s electrons of Be
- (III) 2s electron has more penetration power than 2p electron
- (IV) atomic radius of B is more than Be (atomic number B = 5, Be = 4)

The correct statements are :

Options :

1. (I), (II) and (III)
2. (I), (II) and (IV)
3. (II), (III) and (IV)

4. (I), (III) and (IV)

Question Number : 32 Question Type : MCQ Option Shuffling : Yes

Correct Marks : 4 Wrong Marks : 1

B की प्रथम आयनन एन्थैल्पी Be से कम है। निम्न कथनों पर विचार कीजिए :

- (I) 2s इलेक्ट्रॉन की तुलना में 2p इलेक्ट्रॉन हटाना आसान है।
- (II) Be के 2s इलेक्ट्रॉनों की तुलना में B के 2p इलेक्ट्रॉन आंतरिक कोर इलेक्ट्रॉनों द्वारा नाभिक से ज्यादा परिरक्षित हैं।
- (III) 2p इलेक्ट्रॉनों की तुलना में 2s इलेक्ट्रॉन की प्रवेशी सामर्थ्य ज्यादा है।
- (IV) B की परमाणु त्रिज्या, Be से ज्यादा है।

(परमाणु संख्या B = 5, Be = 4)

सही कथन हैं :

Options :

1. (I), (II) तथा (III)

2. (I), (II) तथा (IV)

3. (II), (III) तथा (IV)

4. (I), (III) तथा (IV)

Question Number : 32 Question Type : MCQ Option Shuffling : Yes

Correct Marks : 4 Wrong Marks : 1

B ની પ્રથમ આયનીકરણ એન્ટાલ્પી Be કરતા નાની છે.
નીચે આપેલા વિધાનો ધ્યાનમાં લો :

- (I) 2p નો ઇલેક્ટ્રોન 2s ના ઇલેક્ટ્રોન કરતા દૂર કરવો સહેલો છે.
- (II) B નો 2p ઇલેક્ટ્રોન Be ના 2s ઇલેક્ટ્રોન કરતા તેના ઈનર કોરના ઇલેક્ટ્રોન વડે તેના ન્યુક્લિયસથી વધુ આચ્છાદિત છે.
- (III) 2s ઇલેક્ટ્રોનની બેદન શક્તિ 2p ઇલેક્ટ્રોન કરતાં વધુ છે.
- (IV) B ની પરમાણ્વીય ત્રિજ્યા Be કરતા વધુ છે.
(પરમાણ્વીય ક્રમ B=5, Be=4)

સાચું કથન શોધો :

Options :

1. (I), (II) અને (III)

2. (I), (II) અને (IV)

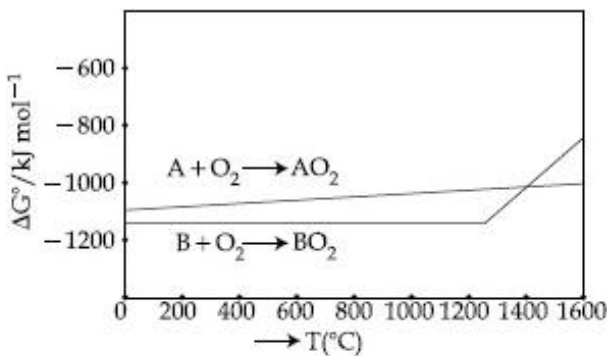
3. (II), (III) અને (IV)

4. (I), (III) અને (IV)

Question Number : 33 Question Type : MCQ Option Shuffling : Yes

Correct Marks : 4 Wrong Marks : 1

According to the following diagram, A reduces BO_2 when the temperature is :

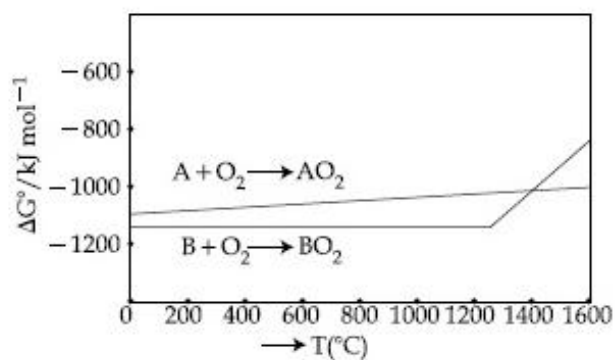


Options :

1. $< 1400\text{ }^{\circ}\text{C}$
2. $> 1400\text{ }^{\circ}\text{C}$
3. $> 1200\text{ }^{\circ}\text{C}$ but $< 1400\text{ }^{\circ}\text{C}$
4. $< 1200\text{ }^{\circ}\text{C}$

Question Number : 33 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 4 Wrong Marks : 1

निम्न चित्र के अनुसार A, BO_2 का अपचयन करता है जब ताप है :

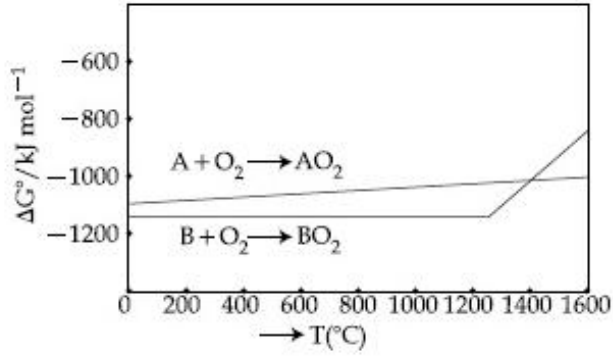


Options :

1. $< 1400\text{ }^{\circ}\text{C}$
2. $> 1400\text{ }^{\circ}\text{C}$
3. $> 1200\text{ }^{\circ}\text{C}$ परन्तु $< 1400\text{ }^{\circ}\text{C}$
4. $< 1200\text{ }^{\circ}\text{C}$

Question Number : 33 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 4 Wrong Marks : 1

નીચે આપેલી આકૃતિ મુજબ A એ BO_2 નું રિડક્શન કરે જ્યારે તાપમાન :



Options :

1. $< 1400\text{ }^\circ\text{C}$
2. $> 1400\text{ }^\circ\text{C}$
3. $> 1200\text{ }^\circ\text{C}$ પણ $< 1400\text{ }^\circ\text{C}$
4. $< 1200\text{ }^\circ\text{C}$

Question Number : 34 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 4 Wrong Marks : 1

The acidic, basic and amphoteric oxides, respectively, are :

Options :

1. $\text{MgO}, \text{Cl}_2\text{O}, \text{Al}_2\text{O}_3$
2. $\text{N}_2\text{O}_3, \text{Li}_2\text{O}, \text{Al}_2\text{O}_3$
3. $\text{Cl}_2\text{O}, \text{CaO}, \text{P}_4\text{O}_{10}$

4. $\text{Na}_2\text{O}, \text{SO}_3, \text{Al}_2\text{O}_3$

Question Number : 34 Question Type : MCQ Option Shuffling : Yes

Correct Marks : 4 Wrong Marks : 1

अम्लीय, क्षारीय तथा उभयधर्मी ऑक्साइडें क्रमशः हैं :

Options :

1. $\text{MgO}, \text{Cl}_2\text{O}, \text{Al}_2\text{O}_3$

2. $\text{N}_2\text{O}_3, \text{Li}_2\text{O}, \text{Al}_2\text{O}_3$

3. $\text{Cl}_2\text{O}, \text{CaO}, \text{P}_4\text{O}_{10}$

4. $\text{Na}_2\text{O}, \text{SO}_3, \text{Al}_2\text{O}_3$

Question Number : 34 Question Type : MCQ Option Shuffling : Yes

Correct Marks : 4 Wrong Marks : 1

એસિડિક, બેઝિક અને ઉભયગુણી ઓક્સાઈડો અનુક્રમે શોધો :

Options :

1. $\text{MgO}, \text{Cl}_2\text{O}, \text{Al}_2\text{O}_3$

2. $\text{N}_2\text{O}_3, \text{Li}_2\text{O}, \text{Al}_2\text{O}_3$

3. $\text{Cl}_2\text{O}, \text{CaO}, \text{P}_4\text{O}_{10}$

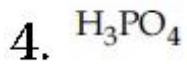
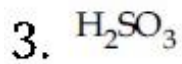
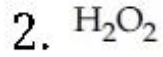
4. $\text{Na}_2\text{O}, \text{SO}_3, \text{Al}_2\text{O}_3$

Question Number : 35 Question Type : MCQ Option Shuffling : Yes

Correct Marks : 4 Wrong Marks : 1

The compound that cannot act both as oxidising and reducing agent is :

Options :

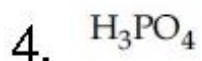
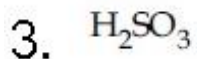


Question Number : 35 Question Type : MCQ Option Shuffling : Yes

Correct Marks : 4 Wrong Marks : 1

वह यौगिक जो उपचायक तथा अपचायक दोनों की तरह कार्य नहीं कर सकता, है :

Options :

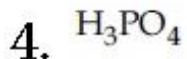
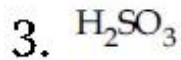
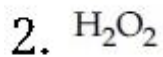
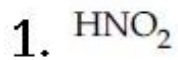


Question Number : 35 Question Type : MCQ Option Shuffling : Yes

Correct Marks : 4 Wrong Marks : 1

संयोजन के वे ऑक्सिडेशनकर्ता अने रिडक्शनकर्ता अंभ अंने तरिके वर्ती शक्तो नथी ते :

Options :



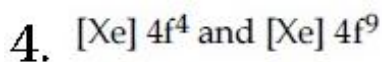
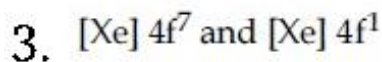
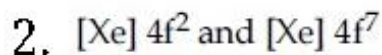
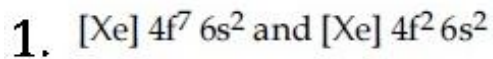
Question Number : 36 Question Type : MCQ Option Shuffling : Yes

Correct Marks : 4 Wrong Marks : 1

The electronic configurations of bivalent europium and trivalent cerium are :

(atomic number : Xe = 54, Ce = 58, Eu = 63)

Options :

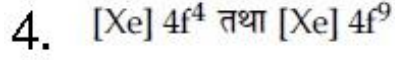
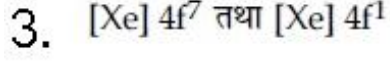
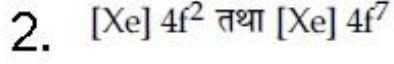
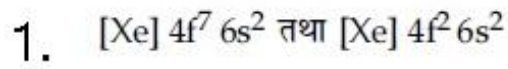


Question Number : 36 Question Type : MCQ Option Shuffling : Yes

Correct Marks : 4 Wrong Marks : 1

द्विसंयोजक यूरोपियम तथा त्रिसंयोजक सीरियम के इलेक्ट्रॉनिक विन्यास हैं : (परमाणु संख्या Xe = 54, Ce = 58, Eu = 63)

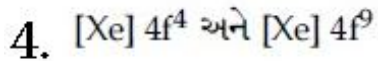
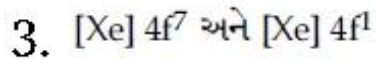
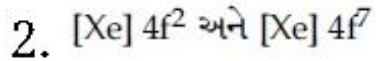
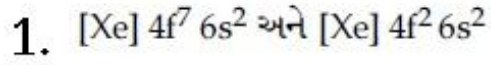
Options :



Question Number : 36 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 4 Wrong Marks : 1

द्विभासीत युरोपियम अने त्रिभासीत सिरीयम नी इलेक्ट्रोनीय संरचना शोधो. (परमाणु क्रमांक Xe = 54, Ce = 58, Eu = 63)

Options :



Question Number : 37 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 4 Wrong Marks : 1

Complex X of composition $\text{Cr}(\text{H}_2\text{O})_6\text{Cl}_n$ has a spin only magnetic moment of 3.83 BM. It reacts with AgNO_3 and shows geometrical isomerism. The IUPAC nomenclature of X is :

Options :

1. Hexaaqua chromium(III) chloride
2. Tetraaquadichlorido chromium(IV) chloride dihydrate
3. Tetraaquadichlorido chromium(III) chloride dihydrate
4. Dichloridotetraqua chromium(IV) chloride dihydrate

Question Number : 37 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 4 Wrong Marks : 1

$\text{Cr}(\text{H}_2\text{O})_6\text{Cl}_n$ संघटन के संकुल X का स्पिन मात्रा का चुम्बकीय आघूर्ण 3.83 BM है। यह AgNO_3 के साथ अभिक्रिया करता है और ज्यामितीय समावयवता प्रदर्शित करता है। X का आई यू पी ए सी नाम है :

Options :

1. हेक्साएक्वाक्रोमियम(III) क्लोराइड
2. टेट्राएक्वाडाइक्लोराइडो क्रोमियम(IV) क्लोराइड डाइहाइड्रेट
3. टेट्राएक्वाडाइक्लोराइडो क्रोमियम(III) क्लोराइड डाइहाइड्रेट

डाइक्लोरइडाटेट्राऐक्वा क्रोमियम(IV) क्लोराइड

4. डाइहाइड्रेट

Question Number : 37 Question Type : MCQ Option Shuffling : Yes

Correct Marks : 4 Wrong Marks : 1

સંકિર્ણ X જેનું બંધારણ $\text{Cr}(\text{H}_2\text{O})_6\text{Cl}_n$ છે. તેની ફક્ત સ્પીન ચુંબકીય ચાકમાત્રા 3.83 BM છે. જે AgNO_3 સાથે પ્રક્રિયા કરે છે અને ભૌમિતિક સમઘટકતા દર્શાવે છે. તો X નું IUPAC નામકરણ શોધો :

Options :

1. હેક્ઝાએક્વાક્રોમિયમ(III) ક્લોરાઈડ

2. ટેટ્રાએક્વાડાયક્લોરીડોક્રોમિયમ(IV) ક્લોરાઈડ
ડાયહાઈડ્રેટ

3. ટેટ્રાએક્વાડાયક્લોરીડોક્રોમિયમ(III) ક્લોરાઈડ
ડાયહાઈડ્રેટ

4. ડાયક્લોરીડોટેટ્રાએક્વાક્રોમિયમ(IV) ક્લોરાઈડ
ડાયહાઈડ્રેટ

Question Number : 38 Question Type : MCQ Option Shuffling : Yes

Correct Marks : 4 Wrong Marks : 1

$[\text{Pd}(\text{F})(\text{Cl})(\text{Br})(\text{I})]^{2-}$ has n number of geometrical isomers. Then, the spin-only magnetic moment and crystal field stabilisation energy [CFSE] of $[\text{Fe}(\text{CN})_6]^{n-6}$, respectively, are :

[Note : Ignore the pairing energy]

Options :

1. 0 BM and $-2.4 \Delta_0$
2. 1.73 BM and $-2.0 \Delta_0$
3. 2.84 BM and $-1.6 \Delta_0$
4. 5.92 BM and 0

Question Number : 38 Question Type : MCQ Option Shuffling : Yes

Correct Marks : 4 Wrong Marks : 1

$[\text{Pd}(\text{F})(\text{Cl})(\text{Br})(\text{I})]^{2-}$ के ज्यामितीय समावयवों की संख्या n है। तब $[\text{Fe}(\text{CN})_6]^{n-6}$ का स्पिन मात्र चुम्बकीय आघूर्ण तथा क्रिस्टल क्षेत्र स्थायीकरण ऊर्जा [CFSE] क्रमशः हैं :

[नोट : युग्मन ऊर्जा को छोड़ दीजिए]

Options :

1. 0 BM तथा $-2.4 \Delta_0$
2. 1.73 BM तथा $-2.0 \Delta_0$
3. 2.84 BM तथा $-1.6 \Delta_0$
4. 5.92 BM तथा 0

Question Number : 38 Question Type : MCQ Option Shuffling : Yes

Correct Marks : 4 Wrong Marks : 1

$[\text{Pd}(\text{F})(\text{Cl})(\text{Br})(\text{I})]^{2-}$ પાસે ભૌમિતિક સમઘટકોની સંખ્યા n છે. તો $[\text{Fe}(\text{CN})_6]^{n-6}$ ની ફક્ત સ્પીન ચુંબકીય ચાકમાત્રા અને સ્ફટિક ક્ષેત્ર સ્થિરીકરણ ઉર્જા $[\text{CFSE}]$ અનુક્રમે શોધો :

[નોંધ : ચુમ્બીકરણ ઉર્જા ને અવગણો]

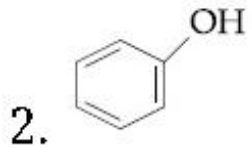
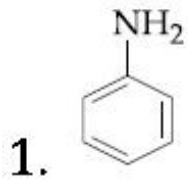
Options :

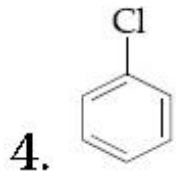
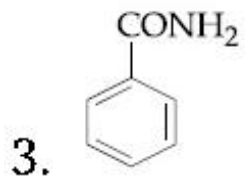
1. 0 BM અને $-2.4 \Delta_0$
2. 1.73 BM અને $-2.0 \Delta_0$
3. 2.84 BM અને $-1.6 \Delta_0$
4. 5.92 BM અને 0

Question Number : 39 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 4 Wrong Marks : 1

Which of these will produce the highest yield in Friedel Crafts reaction ?

Options :



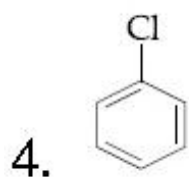
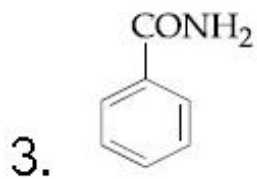
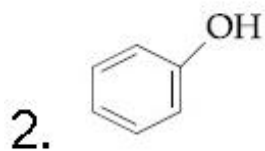
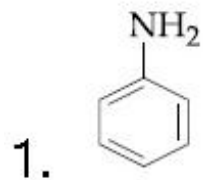


Question Number : 39 Question Type : MCQ Option Shuffling : Yes

Correct Marks : 4 Wrong Marks : 1

फ्रीडल क्राफ्ट्स अभिक्रिया में इनमें से कौन अधिकतम उत्पाद देगा ?

Options :

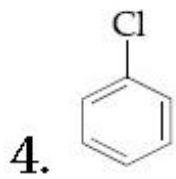
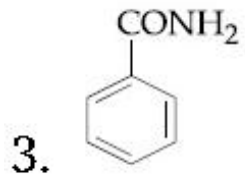
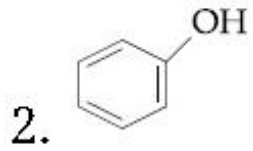
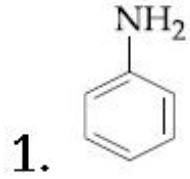


Question Number : 39 Question Type : MCQ Option Shuffling : Yes

Correct Marks : 4 Wrong Marks : 1

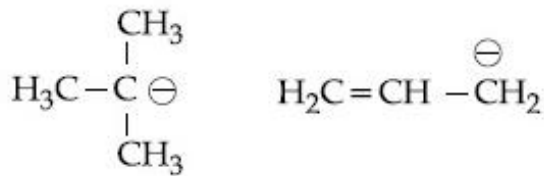
નીચે આપેલા પૈકી કયો એક ફિડલ ક્રાફ્ટ્સ પ્રક્રિયામાં સૌથી વધુ નીપજ આપશે?

Options :



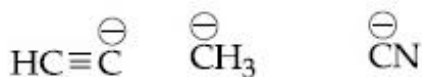
Question Number : 40 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 4 Wrong Marks : 1

The increasing order of basicity for the following intermediates is (from weak to strong)



(i)

(ii)



(iii)

(iv)

(v)

Options :

1. (v) < (i) < (iv) < (ii) < (iii)

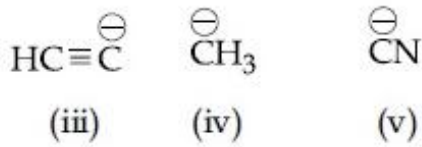
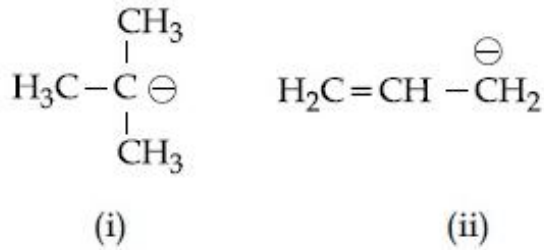
2. (v) < (iii) < (ii) < (iv) < (i)

3. (iii) < (i) < (ii) < (iv) < (v)

4. (iii) < (iv) < (ii) < (i) < (v)

Question Number : 40 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 4 Wrong Marks : 1

निम्न मध्यवर्तियों के लिए क्षारीयता का बढ़ता क्रम है
(दुर्बल से प्रबल) :



Options :

1. (v) < (i) < (iv) < (ii) < (iii)

2. (v) < (iii) < (ii) < (iv) < (i)

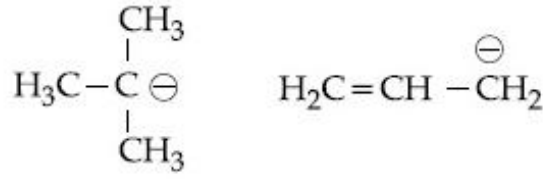
3. (iii) < (i) < (ii) < (iv) < (v)

4. (iii) < (iv) < (ii) < (i) < (v)

Question Number : 40 Question Type : MCQ Option Shuffling : Yes

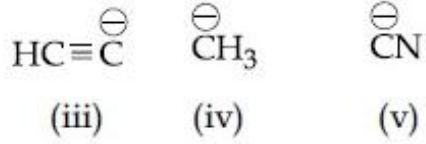
Correct Marks : 4 Wrong Marks : 1

નીચેના મધ્યવર્તિઓમાં બેઝિકતાનો ચઢતો ક્રમ શોધો :
(નિર્બળ થી પ્રબળ તરફ)



(i)

(ii)



Options :

1. (v) < (i) < (iv) < (ii) < (iii)

2. (v) < (iii) < (ii) < (iv) < (i)

3. (iii) < (i) < (ii) < (iv) < (v)

4. (iii) < (iv) < (ii) < (i) < (v)

Question Number : 41 Question Type : MCQ Option Shuffling : Yes

Correct Marks : 4 Wrong Marks : 1

A chemist has 4 samples of artificial sweetener A, B, C and D. To identify these samples, he performed certain experiments and noted the following observations :

- (i) A and D both form blue-violet colour with ninhydrin.
- (ii) Lassaigne extract of C gives positive AgNO_3 test and negative $\text{Fe}_4[\text{Fe}(\text{CN})_6]_3$ test.
- (iii) Lassaigne extract of B and D gives positive sodium nitroprusside test.

Based on these observations which option is correct ?

Options :

1. A : Alitame; B : Saccharin;
C : Aspartame; D : Sucralose

2. A : Aspartame; B : Saccharin;
C : Sucralose; D : Alitame

3. A : Aspartame; B : Alitame;
C : Saccharin; D : Sucralose

4. A : Saccharin; B : Alitame;
C : Sucralose; D : Aspartame

Question Number : 41 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 4 Wrong Marks : 1

एक केमिस्ट के पास कृत्रिम मधुरकों A, B, C तथा D का 4 प्रतिदर्श हैं। इन प्रतिदर्शों को पहचानने के लिए उसने कुछ प्रयोग किये तथा निम्न प्रेक्षणों को नोट किया :

- (i) A तथा D दोनों निनहाइड्रिन के साथ नीला-बैंगनी रंग देते हैं।
- (ii) C का लैसें सारकत्त AgNO_3 के साथ सकारात्मक तथा $\text{Fe}_4[\text{Fe}(\text{CN})_6]_3$ के साथ नकारात्मक परीक्षण देता है।
- (iii) B तथा D का लैसें सारकत्त सोडियम नाइट्रोप्रूसाइड के साथ सकारात्मक परीक्षण देता है।

इन प्रेक्षणों के आधार पर कौन सा विकल्प सही है?

Options :

A : ऐलीटेम; B : सैकरीन; C : ऐस्परटेम;

1. D : सुक्रालोज

A : ऐस्परटेम; B : सैकरीन; C : सुक्रालोज;

2. D : ऐलीटेम

A : ऐस्परटेम; B : ऐलीटेम; C : सैकरीन;

3. D : सुक्रालोज

A : सैकरीन; B : ऐलीटेम; C : सुक्रालोज;

4. D : ऐस्परटेम

Question Number : 41 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 4 Wrong Marks : 1

એક કેમિસ્ટ પાસે કૃત્રિમ ગળ્યા પદાર્થના 4 નમૂનાઓ A, B, C અને D છે. આ નમૂનોઓને ઓળખાવા તેણે કેટલાક પ્રયોગો કરી નીચેના અવલોકનોની નોંધ કરી -

- (i) A અને D બંને નીનહાઈડ્રીન સાથે ભૂરો જાંબલી રંગ આપે છે.
- (ii) C ના લેસાઈનનું નિષ્કર્ષણ હકારાત્મક AgNO_3 કસોટી આપે છે. અને નકારાત્મક $\text{Fe}_4[\text{Fe}(\text{CN})_6]_3$ કસોટી આપે છે.
- (iii) B અને D નું લેસાઈન નિષ્કર્ષણ હકારાત્મક સોડિયમ નાઈટ્રોપ્રુસાઈડ કસોટી આપે છે.

ઉપરોક્ત અવલોકનના આધારે નીચેનામાંથી કયો વિકલ્પ સાચો છે?

Options :

A : એલીટિમ; B : સેકેરીન; C : એસ્પાર્ટેમ;

1. D : સુકાલોઝ

A : એસ્પાર્ટેમ; B : સેકેરીન; C : સુકાલોઝ;

2. D : એલીટિમ

A : એસ્પાર્ટેમ; B : એલીટિમ; C : સેકેરીન;

3. D : સુકાલોઝ

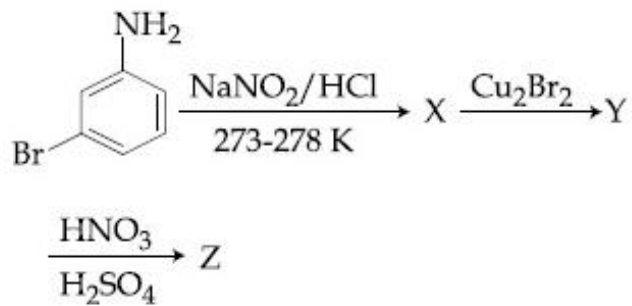
A : સેકેરીન; B : એલીટિમ; C : સુકાલોઝ;

4. D : એસ્પાર્ટેમ

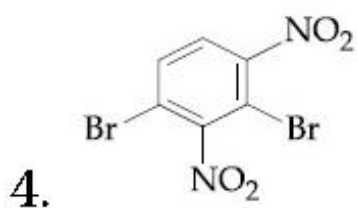
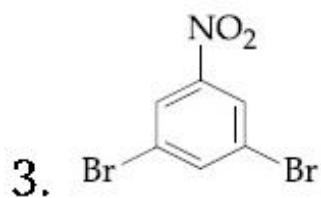
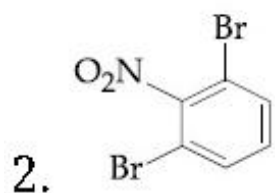
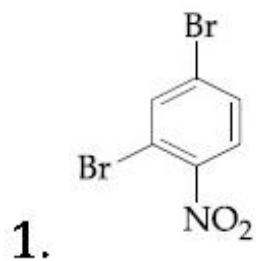
Question Number : 42 Question Type : MCQ Option Shuffling : Yes

Correct Marks : 4 Wrong Marks : 1

The major product Z obtained in the following reaction scheme is :

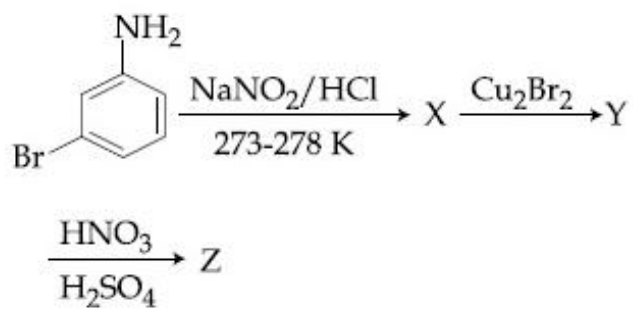


Options :

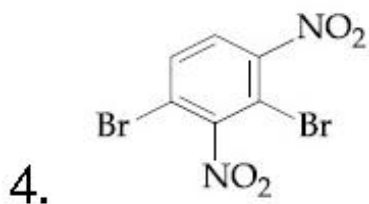
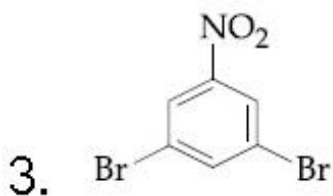
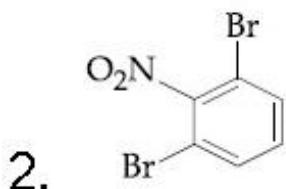
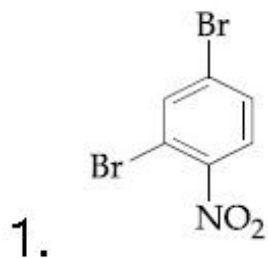


Question Number : 42 Question Type : MCQ Option Shuffling : Yes
 Correct Marks : 4 Wrong Marks : 1

निम्न अभिक्रिया स्कीम में प्राप्त होने वाला मुख्य उत्पाद Z है :

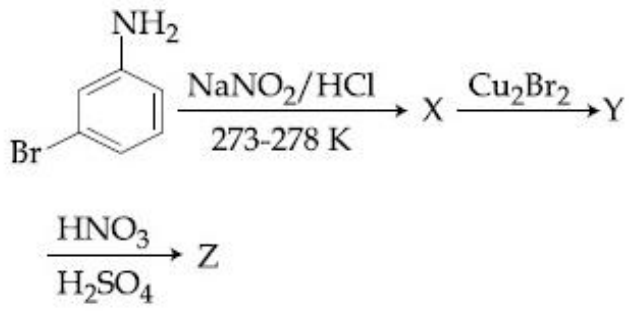


Options :

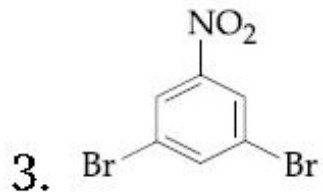
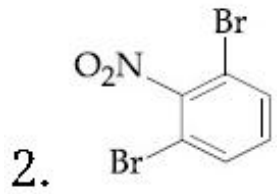
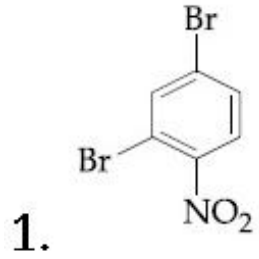


Question Number : 42 Question Type : MCQ Option Shuffling : Yes
 Correct Marks : 4 Wrong Marks : 1

નીચેની પ્રક્રિયામાં મળતી મુખ્ય નીપજ Z શોધો.

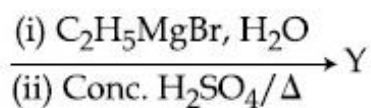
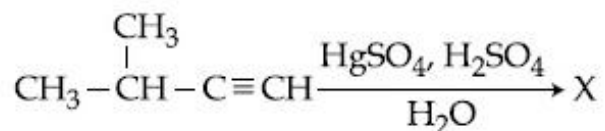


Options :

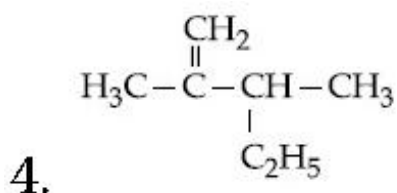
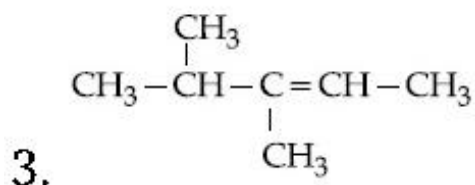
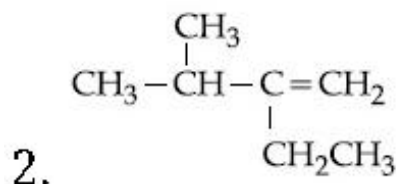
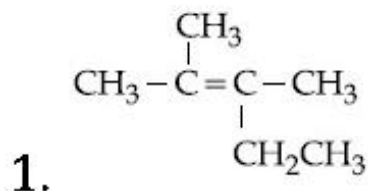


Question Number : 43 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 4 Wrong Marks : 1

The major product (Y) in the following reactions is :

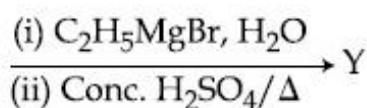
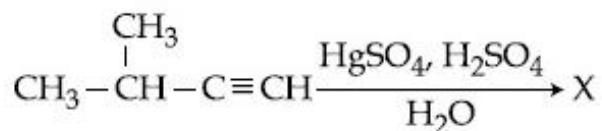


Options :

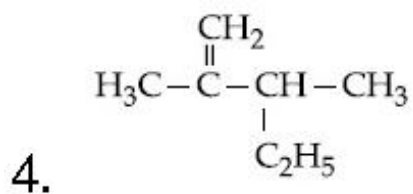
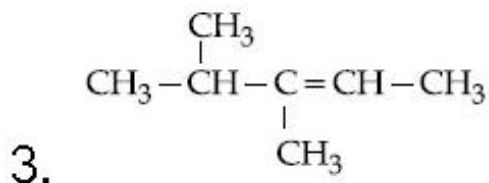
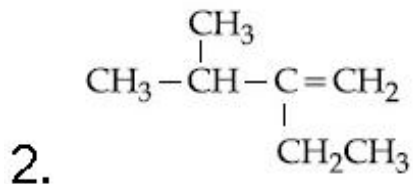
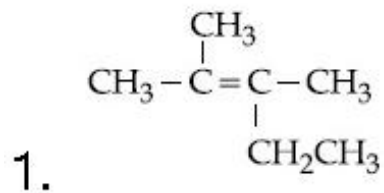


Question Number : 43 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 4 Wrong Marks : 1

निम्न अभिक्रियाओं में मुख्य उत्पाद (Y) है :



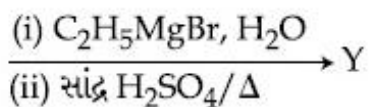
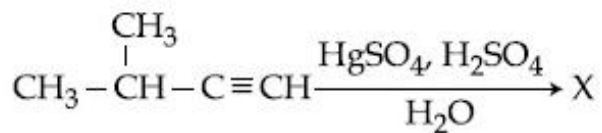
Options :



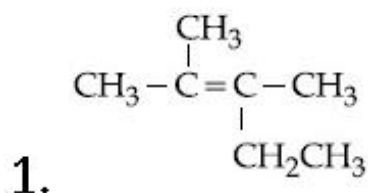
Question Number : 43 Question Type : MCQ Option Shuffling : Yes

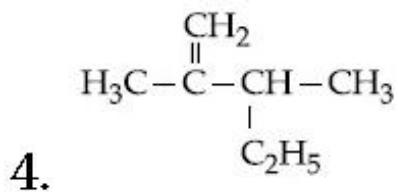
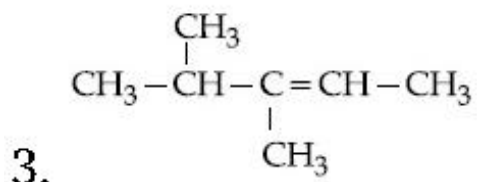
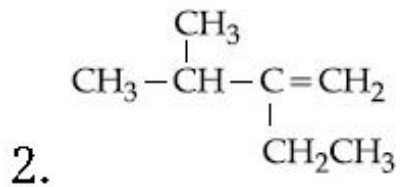
Correct Marks : 4 Wrong Marks : 1

નીચે આપેલ પ્રક્રિયામાં મુખ્ય નીપજ (Y) શોધો :



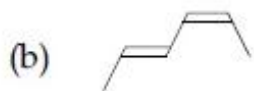
Options :





Question Number : 44 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 4 Wrong Marks : 1

The correct order of heat of combustion
for following alkadienes is :



Options :

1. (c) < (b) < (a)

2. (b) < (c) < (a)

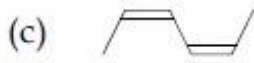
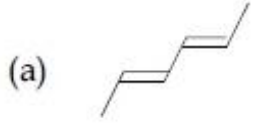
3. (a) < (c) < (b)

4. (a) < (b) < (c)

Question Number : 44 Question Type : MCQ Option Shuffling : Yes

Correct Marks : 4 Wrong Marks : 1

निम्न ऐल्काडाइन्स के लिए दहन ऊष्मा का सही क्रम है:



Options :

1. (c) < (b) < (a)

2. (b) < (c) < (a)

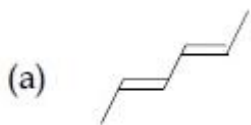
3. (a) < (c) < (b)

4. (a) < (b) < (c)

Question Number : 44 Question Type : MCQ Option Shuffling : Yes

Correct Marks : 4 Wrong Marks : 1

नीचेना आल्काडाइन्स नी दहन उष्मानो साथो क्रम शोधो :



Options :

1. (c) < (b) < (a)

2. (b) < (c) < (a)

3. (a) < (c) < (b)

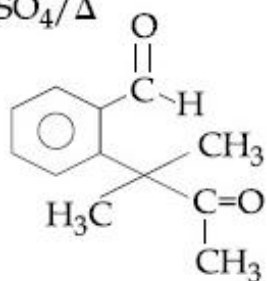
4. (a) < (b) < (c)

Question Number : 45 Question Type : MCQ Option Shuffling : Yes

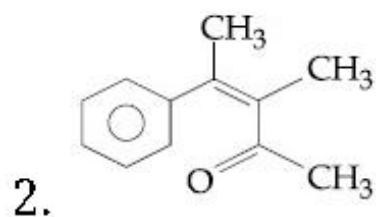
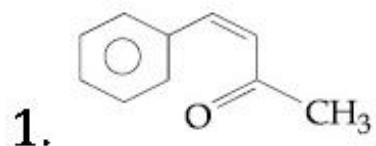
Correct Marks : 4 Wrong Marks : 1

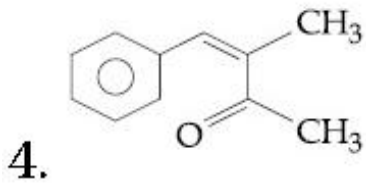
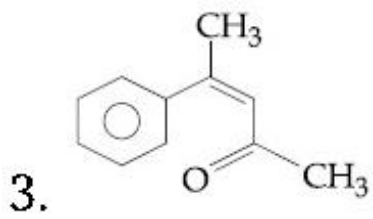
Identify (A) in the following reaction sequence :

(A) $\xrightarrow[\text{(ii) H}^+, \text{H}_2\text{O}]{\text{(i) CH}_3\text{MgBr}}$ (B) $\xrightarrow{\text{O}_3/\text{Zn, H}_2\text{O}}$
Gives Positive iodoform test
(iii) Conc. H₂SO₄/Δ



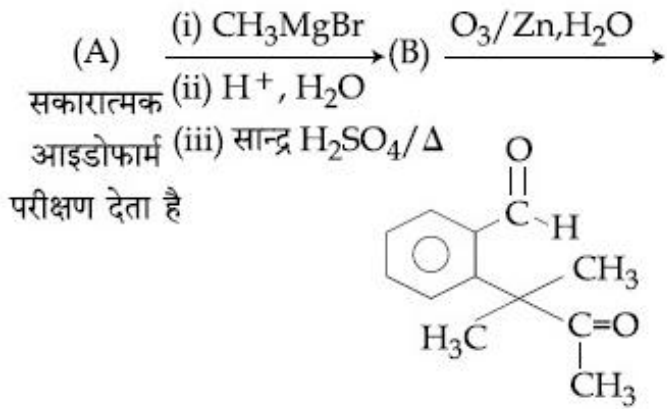
Options :



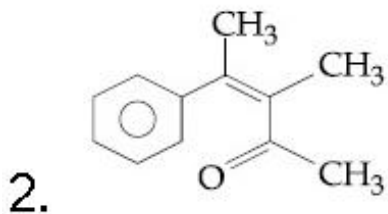
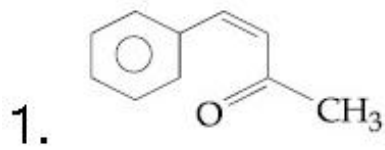


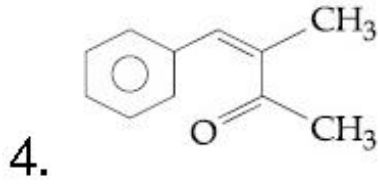
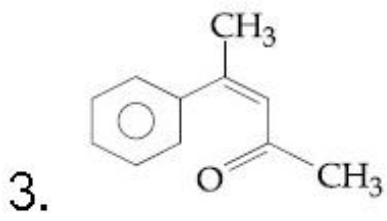
Question Number : 45 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 4 Wrong Marks : 1

निम्न अभिक्रिया अनुक्रम में (A) की पहचान कीजिए :



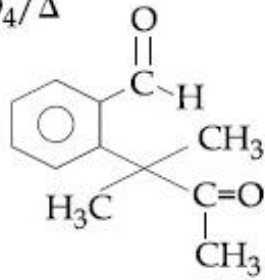
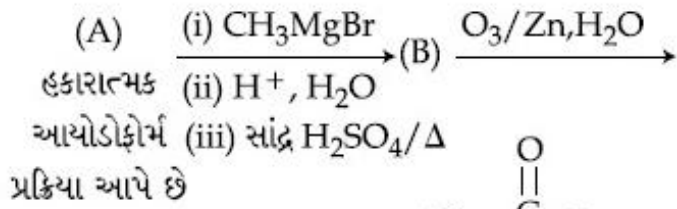
Options :



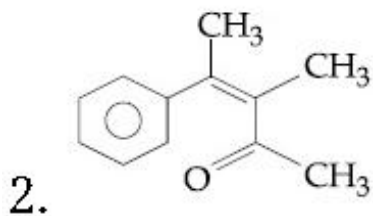
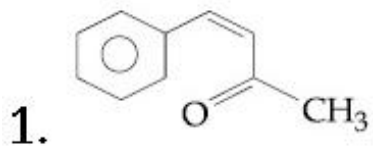


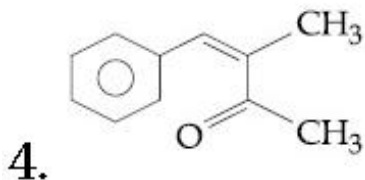
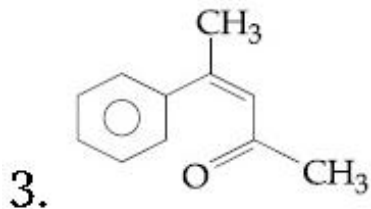
Question Number : 45 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 4 Wrong Marks : 1

નીચે આપેલ પ્રક્રિયા શ્રેણીમાં (A) ઓળખો :



Options :





Sub-Section Number: 2
 Sub-Section Id: 405036125
 Question Shuffling Allowed : Yes

Question Number : 46 Question Type : SA
 Correct Marks : 4 Wrong Marks : 0

The molarity of HNO_3 in a sample which has density 1.4 g/mL and mass percentage of 63% is _____. (Molecular Weight of $\text{HNO}_3 = 63$)

Response Type: Numeric
 Evaluation Required For SA: Yes
 Show Word Count: Yes
 Answers Type: Range
 Possible Answers :
 14 to 14

Question Number : 46 Question Type : SA
 Correct Marks : 4 Wrong Marks : 0

उस प्रतिदर्श में, जिसका घनत्व 1.4 g/mL तथा द्रव्यमान प्रतिशतता 63% की हो, HNO_3 की मोलरता होगी _____ (HNO_3 का अणुभार = 63)

Response Type: Numeric
 Evaluation Required For SA: Yes
 Show Word Count: Yes
 Answers Type: Range
 Possible Answers :
 14 to 14

Question Number : 46 Question Type : SA
 Correct Marks : 4 Wrong Marks : 0

1.4 g/mL ધનતા અને 63% દળ ટકાવારી ધરાવતા એક નમૂનામાં HNO₃ ની મોલારિટી શું છે _____
(HNO₃ અણુભાર = 63)

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

14 to 14

Question Number : 47 **Question Type :** SA
Correct Marks : 4 **Wrong Marks :** 0

How much amount of NaCl should be added to 600 g of water ($\rho = 1.00 \text{ g/mL}$) to decrease the freezing point of water to -0.2°C ? _____. (The freezing point depression constant for water = 2 K kg mol^{-1})

Note: For this question, discrepancy is found in question/answer. So, this question is ignored for all candidates.

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

1 to 2.01

Question Number : 47 **Question Type :** SA
Correct Marks : 4 **Wrong Marks :** 0

600 g પાણી ($\rho = 1.00 \text{ g/mL}$) મેં NaCl કી કિતની માત્રા મિલાયી જાય કિ उसका हिमांक घटकर -0.2°C हो जाय? _____. (पानी के लिए हिमांक अवनमन स्थिरांक = 2 K kg mol^{-1})

Note: For this question, discrepancy is found in question/answer. So, this question is ignored for all candidates.

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

1 to 2.01

Question Number : 47 **Question Type :** SA
Correct Marks : 4 **Wrong Marks :** 0

પાણીનું ઠારણ બિંદુમાં -0.2°C નો ઘટાડો કરવા માટે NaCl નો કેટલા જથ્થો 600 g પાણીમાં ઉમેરવો પડે _____. ($\rho = 1.00 \text{ g/mL}$) પાણી માટે ઠારણ બિંદુ અવનયન અચળાંક = 2 K kg mol^{-1})

Note: For this question, discrepancy is found in question/answer. So, this question is ignored for all candidates.

Response Type: Numeric

Evaluation Required For SA: Yes

Show Word Count: Yes

Answers Type: Range

Possible Answers :

1 to 2.01

Question Number : 48 Question Type : SA

Correct Marks : 4 Wrong Marks : 0

108 g of silver (molar mass 108 g mol^{-1}) is deposited at cathode from $\text{AgNO}_3(\text{aq})$ solution by a certain quantity of electricity. The volume (in L) of oxygen gas produced at 273 K and 1 bar pressure from water by the same quantity of electricity is _____.

Response Type: Numeric

Evaluation Required For SA: Yes

Show Word Count: Yes

Answers Type: Range

Possible Answers :

5.66 to 5.68

Question Number : 48 Question Type : SA

Correct Marks : 4 Wrong Marks : 0

एक निश्चित विद्युत मात्रा द्वारा AgNO_3 (जलीय) से 108 g सिल्वर (मोलर द्रव्यमान 108 g mol^{-1}) कैथोड पर निक्षेपित किया गया। विद्युत की उसी मात्रा द्वारा 273 K तथा 1 बार दाब पर बनायी गई ऑक्सीजन का आयतन (L में) होगा _____.

Response Type: Numeric

Evaluation Required For SA: Yes

Show Word Count: Yes

Answers Type: Range

Possible Answers :

5.66 to 5.68

Question Number : 48 Question Type : SA

Correct Marks : 4 Wrong Marks : 0

$\text{AgNO}_3(\text{aq})$ ના દ્રાવણમાં વિજપ્રવાહ ના ચોક્કસ જથ્થા વડે 108 g સિલ્વર (ચાંદી) (મોલર દળ 108 g mol^{-1}) કેથોડ પર જમા થાય છે. વિજપ્રવાહના એટલાજ જથ્થા વડે 273 K અને 1 bar દબાણે પાણી માંથી ઓક્સિજન વાયુ નું કેટલું કદ (લિટરમાં) ઉત્પન્ન થશે _____.

Response Type: Numeric

Evaluation Required For SA: Yes

Show Word Count: Yes

Answers Type: Range

Possible Answers :

5.66 to 5.68

Question Number : 49 Question Type : SA

Correct Marks : 4 Wrong Marks : 0

The hardness of a water sample containing 10^{-3} M MgSO_4 expressed as CaCO_3 equivalents (in ppm) is _____.

(molar mass of MgSO_4 is 120.37 g/mol)

Response Type: Numeric

Evaluation Required For SA: Yes

Show Word Count: Yes

Answers Type: Range

Possible Answers :

100 to 100

Question Number : 49 Question Type : SA

Correct Marks : 4 Wrong Marks : 0

10^{-3} M MgSO_4 वाले जल के प्रतिदर्श की कठोरता जिसको CaCO_3 समतुल्य (ppmमें) अभिव्यक्त किये जाने पर, होगी _____.

(MgSO_4 का मोलर संहति = 120.37 g/mol)

Response Type: Numeric

Evaluation Required For SA: Yes

Show Word Count: Yes

Answers Type: Range

Possible Answers :

100 to 100

Question Number : 49 Question Type : SA

Correct Marks : 4 Wrong Marks : 0

10^{-3} M MgSO_4 धरावता पाणीना अेक नमूनानी कठिनता CaCO_3 ने तुल्य छे तेने ppm मां दर्शावो _____.

(MgSO_4 नुं मोलर दण = 120.37 g/mol)

Response Type: Numeric

Evaluation Required For SA: Yes

Show Word Count: Yes

Answers Type: Range

Possible Answers :

100 to 100

Question Number : 50 Question Type : SA

Correct Marks : 4 Wrong Marks : 0

The mass percentage of nitrogen in histamine is _____.

Response Type: Numeric

Evaluation Required For SA: Yes

Show Word Count: Yes

Answers Type: Range

Possible Answers :

37.80 to 38.20

Question Number : 50 Question Type : SA

Correct Marks : 4 Wrong Marks : 0

हिस्टैमिन में नाइट्रोजन की द्रव्यमान प्रतिशतता है

_____.

Response Type: Numeric

Evaluation Required For SA: Yes

Show Word Count: Yes

Answers Type: Range

Possible Answers :

37.80 to 38.20

Question Number : 50 Question Type : SA

Correct Marks : 4 Wrong Marks : 0

हिस्टामाईनमां नाईट्रोजननी दण टकावारी शोधो

_____.

Response Type: Numeric

Evaluation Required For SA: Yes

Show Word Count: Yes

Answers Type: Range

Possible Answers :

37.80 to 38.20

Mathematics

Section Id :	40503677
Section Number :	3
Section type :	Online
Mandatory or Optional:	Mandatory
Number of Questions:	25
Number of Questions to be attempted:	25
Section Marks:	100

Sub-Section Number:	1
Sub-Section Id:	405036126
Question Shuffling Allowed :	Yes

Question Number : 51 Question Type : MCQ Option Shuffling : Yes

Correct Marks : 4 Wrong Marks : 1

If for all real triplets (a, b, c),

$f(x) = a + bx + cx^2$; then $\int_0^1 f(x)dx$ is equal

to :

Options :