

## National Testing Agency

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### BTECH

**Group Number :** 1  
**Group Id :** 40503618  
**Group Maximum Duration :** 0  
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**Break time:** 0  
**Group Marks:** 300  
**Is this Group for Examiner?:** No

# Chemistry

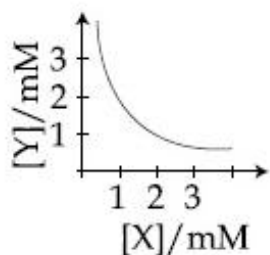
|                                      |           |
|--------------------------------------|-----------|
| Section Id :                         | 40503658  |
| Section Number :                     | 2         |
| Section type :                       | Online    |
| Mandatory or Optional:               | Mandatory |
| Number of Questions:                 | 25        |
| Number of Questions to be attempted: | 25        |
| Section Marks:                       | 100       |

|                              |          |
|------------------------------|----------|
| Sub-Section Number:          | 1        |
| Sub-Section Id:              | 40503688 |
| Question Shuffling Allowed : | Yes      |

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

Correct Marks : 4 Wrong Marks : 1

The stoichiometry and solubility product of a salt with the solubility curve given below is, respectively :



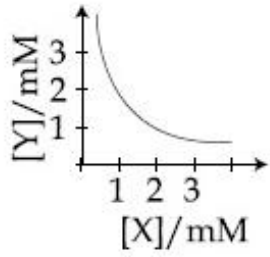
Options :

1.  $XY, 2 \times 10^{-6} M^3$
2.  $XY_2, 4 \times 10^{-9} M^3$
3.  $X_2Y, 2 \times 10^{-9} M^3$
4.  $XY_2, 1 \times 10^{-9} M^3$

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

Correct Marks : 4 Wrong Marks : 1

નીચે દિયે ગયે વક્ર કે આધાર પર, એક લવણ કી સ્ટાઈકિયોમીટ્રી (રસસમીકરણમિતિ) તથા વિલેયતા ગુણનફલ, ક્રમશઃ હૈ :



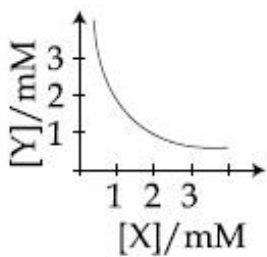
Options :

1.  $XY, 2 \times 10^{-6} M^3$
2.  $XY_2, 4 \times 10^{-9} M^3$
3.  $X_2Y, 2 \times 10^{-9} M^3$
4.  $XY_2, 1 \times 10^{-9} M^3$

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

Correct Marks : 4 Wrong Marks : 1

એક ક્ષારનો દ્રાવ્યતા વક્ર નીચે આપેલો છે તો તેના તત્વયોગમીતીય અને દ્રાવ્યતા ગુણાકાર અનુક્રમે શોધો ?



Options :

1.  $XY, 2 \times 10^{-6} M^3$

2.  $XY_2, 4 \times 10^{-9} M^3$

3.  $X_2Y, 2 \times 10^{-9} M^3$

4.  $XY_2, 1 \times 10^{-9} M^3$

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

The rate of a certain biochemical reaction at physiological temperature (T) occurs  $10^6$  times faster with enzyme than without. The change in the activation energy upon adding enzyme is :

Options :

1.  $-6RT$

2.  $-6(2.303)RT$

3.  $+6RT$

4.  $+6(2.303)RT$

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

एक जैव-रासायनिक अभिक्रिया की दर शरीर क्रियात्मक ताप (T) पर बिना एन्जाइम की तुलना में एन्जाइम द्वारा  $10^6$  गुना तेज होता है। एन्जाइम के मिलाने पर सक्रियण ऊर्जा में परिवर्तन है :

Options :

1.  $-6RT$

2.  $-6(2.303)RT$

3.  $+6RT$

4.  $+6(2.303)RT$

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

કેટલીક જૈવરાસાયણિક પ્રક્રિયાઓનો દર શારીરિક તાપમાન (T) એ ઉત્સેચકોની હાજરીમાં તેઓની ગેરહાજરી કરતાં  $10^6$  મણી ઝડપી બને છે. તો ઉત્સેચક ઉમેરતા, સક્રિયકરણ શક્તિ માં થતો ફેરફાર શોધો?

Options :

1.  $-6RT$

2.  $-6(2.303)RT$

3.  $+6RT$

4.  $+6(2.303)RT$

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

As per Hardy-Schulze formulation, the flocculation values of the following for ferric hydroxide sol are in the order :

Options :

$$K_3[Fe(CN)_6] > AlCl_3 > K_2CrO_4 > KBr$$

1.  $> KNO_3$

$$AlCl_3 > K_3[Fe(CN)_6] > K_2CrO_4 >$$

2.  $KBr = KNO_3$

$$K_3[Fe(CN)_6] < K_2CrO_4 < AlCl_3 < KBr$$

3.  $< KNO_3$

$$K_3[Fe(CN)_6] < K_2CrO_4 < KBr =$$

4.  $KNO_3 = AlCl_3$

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

Correct Marks : 4 Wrong Marks : 1

हार्डी-सुल्से संरूपण के अनुसार, फेरिक हाइड्राक्साइड  
सॉल के लिए निम्न का ऊर्णन मान इस क्रम में है :

Options :

$$K_3[Fe(CN)_6] > AlCl_3 > K_2CrO_4 > KBr$$

1.  $> KNO_3$

$$AlCl_3 > K_3[Fe(CN)_6] > K_2CrO_4 >$$

2.  $KBr = KNO_3$

$$K_3[Fe(CN)_6] < K_2CrO_4 < AlCl_3 < KBr$$

3.  $< KNO_3$

$$K_3[Fe(CN)_6] < K_2CrO_4 < KBr =$$

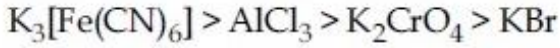
4.  $KNO_3 = AlCl_3$

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

Correct Marks : 4 Wrong Marks : 1

હાર્ડિયુલ્જ બનાવટ પ્રમાણે, ફેરીક હાઈડ્રોક્સાઈડસોલનાં  
ઉર્ણન મુલ્યો નો ક્રમ શોધો :

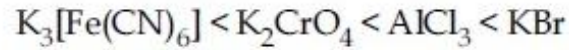
Options :



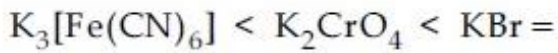
1.  $> KNO_3$



2.  $KBr = KNO_3$



3.  $< KNO_3$



4.  $KNO_3 = AlCl_3$

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

Correct Marks : 4 Wrong Marks : 1

The predominant intermolecular forces  
present in ethyl acetate, a liquid, are :

Options :

hydrogen bonding and London

1. dispersion

London dispersion, dipole-dipole

2. and hydrogen bonding

3. Dipole-dipole and hydrogen bonding

4. London dispersion and dipole-dipole

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

Correct Marks : 4 Wrong Marks : 1

દ્રવ ઇથિલ એસીટેટ મેં ઉપસ્થિત પ્રમુખ અંતરાઅણુક  
બલ હેં :

Options :

1. હાઇડ્રોજન આબન્ધ તથા લન્ડન પરિક્ષેપણ
2. લન્ડન પરિક્ષેપણ, દ્વિધ્રુવ-દ્વિધ્રુવ તથા હાઇડ્રોજન આબન્ધ
3. દ્વિધ્રુવ-દ્વિધ્રુવ તથા હાઇડ્રોજન આબન્ધ
4. લન્ડન પરિક્ષેપણ તથા દ્વિધ્રુવ-દ્વિધ્રુવ

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

Correct Marks : 4 Wrong Marks : 1

પ્રવાહી, ઈથાઈલ એસિટેટમાં મુખ્ય આતરઆણ્વીય બળો  
હાજર હોય છે તે :

Options :

1. હાઈડ્રોજન બંધન અને લંડન ડીપ્રેશન
2. લંડન ડીપ્રેશન, દ્વિધ્રુવીય-દ્વિધ્રુવીય અને હાઈડ્રોજન બંધન
3. દ્વિધ્રુવીય-દ્વિધ્રુવીય અને હાઈડ્રોજન બંધન
4. લંડન ડીપ્રેશન અને દ્વિધ્રુવીય-દ્વિધ્રુવીય

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



Correct Marks : 4 Wrong Marks : 1

For the Balmer series in the spectrum of H

atom,  $\bar{\nu} = R_H \left\{ \frac{1}{n_1^2} - \frac{1}{n_2^2} \right\}$ , the correct

statements among (I) to (IV) are :

- (I) As wavelength decreases, the lines in the series converge
- (II) The integer  $n_1$  is equal to 2
- (III) The lines of longest wavelength corresponds to  $n_2=3$
- (IV) The ionization energy of hydrogen can be calculated from wave number of these lines

Options :

1. (I), (II), (III)

2. (II), (III), (IV)

3. (I), (III), (IV)

4. (I), (II), (IV)

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

Correct Marks : 4 Wrong Marks : 1

हाइड्रोजन परमाणु के स्पेक्ट्रम में बामर श्रेणी के लिए :

$\bar{\nu} = R_H \left\{ \frac{1}{n_1^2} - \frac{1}{n_2^2} \right\}$ , (I) - (IV) में सही कथन

हैं :

- (I) जैसे जैसे तरंगदैर्घ्य घटती है, श्रेणी में लाइनें अभिसरित करती हैं।
- (II) पूर्णांक  $n_1$  2 के बराबर है।
- (III) दीर्घतम तरंगदैर्घ्य की लाइनें  $n_2=3$  के अनुरूप होती हैं।
- (IV) इन लाइनों की तरंग संख्या से हाइड्रोजन के आयनन ऊर्जा की गणना की जा सकती है।

Options :

1. (I), (II), (III)

2. (II), (III), (IV)

3. (I), (III), (IV)

4. (I), (II), (IV)

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

Correct Marks : 4 Wrong Marks : 1

H પરમાણુના બામર-શ્રેણી વર્ણપટમાં

$$\bar{\nu} = R_H \left\{ \frac{1}{n_1^2} - \frac{1}{n_2^2} \right\}$$

(I) - (IV) માં સાચા વિધાનો છે.

(I) જો તરંગલંબાઈ ઘટે, તેમ રેખાઓ એકઠી થાય છે.

(II) પૂર્ણાંક  $n_1$  તે 2 બરાબર છે.

(III) મહત્તમ તરંગલંબાઈ ધરાવતી રેખાઓ  $n_2=3$  ને અનુરૂપ છે.

(IV) હાઇડ્રોજનની આયનીકરણ શક્તિ આ રેખાઓની તરંગસંખ્યા ઉપરથી ગણી શકાય છે.

Options :

1. (I), (II), (III)

2. (II), (III), (IV)

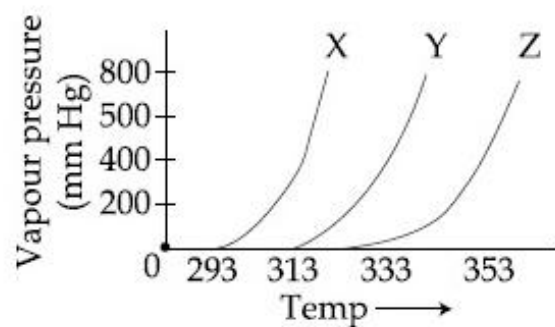
3. (I), (III), (IV)

4. (I), (II), (IV)

Question Number : 31 Question Type : MCQ Option Shuffling : Yes

Correct Marks : 4 Wrong Marks : 1

A graph of vapour pressure and temperature for three different liquids X, Y, and Z is shown below :



The following inferences are made :

- (A) X has higher intermolecular interactions compared to Y.
- (B) X has lower intermolecular interactions compared to Y.
- (C) Z has lower intermolecular interactions compared to Y.

The correct inference(s) is/are :

Options :

1. (A)

2. (B)

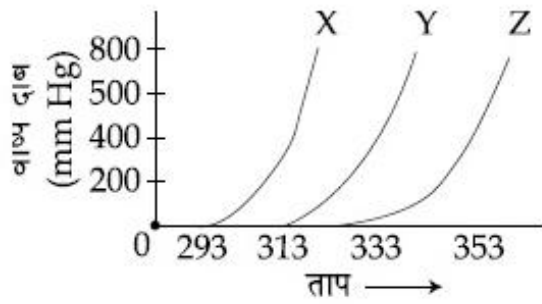
3. (C)

4. (A) and (C)

Question Number : 31 Question Type : MCQ Option Shuffling : Yes

Correct Marks : 4 Wrong Marks : 1

तीन अलग-अलग द्रवों X, Y एवं Z के लिए वाष्प दाब तथा ताप के बीच एक ग्राफ नीचे दिया गया है :



निम्न निष्कर्ष निकाले गये :

- (A) Y की तुलना में X का अंतराअणुक अन्योन्य क्रिया उच्चतर है।
- (B) Y की तुलना में X का अंतराअणुक अन्योन्य क्रिया निम्नतर है।
- (C) Y की तुलना में Z का अंतराअणुक अन्योन्य क्रिया निम्नतर है।

सही निष्कर्ष/ निष्कर्ष है/हैं :

Options :

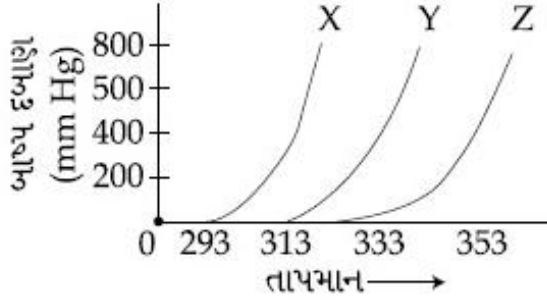
1. (A)

2. (B)

3. (C)

4. (A) तथा (C)

જુદા-જુદા ત્રણ પ્રવાહી X, Y અને Z માટે બાષ્પદબાણ અને તાપમાન નો આલેખ નીચે આપેલો છે :



નીચેના તારણો કાઢ્યા :

- (A) X માં આંતર આણ્વીય, આંતરક્રિયા Y ની સરખામણીમાં વધુ છે.
- (B) X માં આંતર આણ્વીય આંતરક્રિયા Y સરખામણીમાં ઓછી છે.
- (C) Z માં આંતર આણ્વીય આંતરક્રિયા Y ની સરખામણીમાં ઓછી છે.

સચોટ તારણો શોધો :

Options :

1. (A)

2. (B)

3. (C)

4. (A) અને (C)

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

Correct Marks : 4 Wrong Marks : 1

The first ionization energy (in kJ/mol) of Na, Mg, Al and Si respectively, are :

Options :

1. 496, 577, 737, 786

2. 786, 737, 577, 496

3. 496, 737, 577, 786

4. 496, 577, 786, 737

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

Correct Marks : 4 Wrong Marks : 1

Na, Mg, Al તથા Si કી પ્રથમ આયનન ઊર્જા  
( $\text{kJ mol}^{-1}$  મેં) ક્રમશઃ હેં :

Options :

1. 496, 577, 737, 786

2. 786, 737, 577, 496

3. 496, 737, 577, 786

4. 496, 577, 786, 737

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

Correct Marks : 4 Wrong Marks : 1

Na, Mg, Al અને Si ની અનુક્રમે પ્રથમ આયનીકરણ  
શક્તિ ( $\text{kJ/mol}^{-1}$  મેં) માં :

Options :

1. 496, 577, 737, 786

2. 786, 737, 577, 496

3. 496, 737, 577, 786

4. 496, 577, 786, 737

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

Correct Marks : 4 Wrong Marks : 1

The strength of an aqueous NaOH solution is *most accurately* determined by titrating :

(Note : consider that an appropriate indicator is used)

Options :

Aq. NaOH in a volumetric flask and

1. concentrated  $\text{H}_2\text{SO}_4$  in a conical flask

Aq. NaOH in a burette and

2. concentrated  $\text{H}_2\text{SO}_4$  in a conical flask

Aq. NaOH in a burette and aqueous

3. oxalic acid in a conical flask

Aq. NaOH in a pipette and aqueous

4. oxalic acid in a burette

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

Correct Marks : 4 Wrong Marks : 1

जलीय NaOH विलयन की सामर्थ्य सर्वाधिक यथार्थता से इस तरह अनुमापन द्वारा निकाली जाती है :

(नोट : विचार कीजिए कि एक उपयुक्त संसूचक का उपयोग किया गया है।)

Options :

जलीय NaOH आयतनी फ्लास्क में तथा सान्द्र

1.  $\text{H}_2\text{SO}_4$  एक कॉनिकल फ्लास्क में



2. જલીય NaOH એક બ્યુરેટ મેં તથા સાન્દ્ર  $H_2SO_4$  એક કોનિકલ ફ્લાસ્ક મેં

3. જલીય NaOH એક બ્યુરેટ મેં તથા જલીય આક્સેલિક એસિડ એક કોનિકલ ફ્લાસ્ક મેં

4. જલીય NaOH એક પિપેટ મેં તથા જલીય આક્સેલિક એસિડ એક બ્યુરેટ મેં

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

જલીય NaOH ના દ્વારણનું સાર્થક્ય એકદમ ચોકસાઈ  
પૂર્વક શોધવા તેનું અનુમાન,  
(નોંધ : ધ્યાન માં લો કે ચોચ સૂચક નો ઉપયોગ થયેલો  
છે.)

Options :

જલીય NaOH કદમાપક ફ્લાસ્ક માં અને  
1.  $H_2SO_4$  કોનીકલ ફ્લાસ્કમાં

જલીય NaOH બ્યુરેટ માં અને સાંદ્ર  $H_2SO_4$   
2. કોનીકલ ફ્લાસ્કમાં

જલીય NaOH બ્યુરેટમાં અને જલીય ઓક્ઝલિક  
3. એસિડ કોનીકલ ફ્લાસ્કમાં

જલીય NaOH પિપેટમાં અને જલીય ઓક્ઝલિક  
4. એસિડ બ્યુરેટમાં

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



When gypsum is heated to 393 K, it forms :

Options :

1. Anhydrous  $\text{CaSO}_4$
2. Dead burnt plaster
3.  $\text{CaSO}_4 \cdot 0.5 \text{H}_2\text{O}$
4.  $\text{CaSO}_4 \cdot 5 \text{H}_2\text{O}$

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

Correct Marks : 4 Wrong Marks : 1

जब जिप्सम को 393 K तक गरम किया जाता है, तो बनता है :

Options :

1. निर्जल  $\text{CaSO}_4$
2. मृत-तापित प्लास्टर
3.  $\text{CaSO}_4 \cdot 0.5 \text{H}_2\text{O}$
4.  $\text{CaSO}_4 \cdot 5 \text{H}_2\text{O}$

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

Correct Marks : 4 Wrong Marks : 1

જ્યારે જિપ્સમને 393 K એ ગરમ કરવામાં આવે ત્યારે, તે નીચેનામાંથી શું બનાવે છે?

Options :

1. નિર્જળ  $\text{CaSO}_4$

2. મૃત્તપાચ પ્લાસ્ટર

3.  $\text{CaSO}_4 \cdot 0.5 \text{H}_2\text{O}$

4.  $\text{CaSO}_4 \cdot 5 \text{H}_2\text{O}$

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

Correct Marks : 4 Wrong Marks : 1

The number of bonds between sulphur and oxygen atoms in  $\text{S}_2\text{O}_8^{2-}$  and the number of bonds between sulphur and sulphur atoms in rhombic sulphur, respectively, are :

Options :

1. 4 and 6

2. 4 and 8

3. 8 and 6

4. 8 and 8

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

Correct Marks : 4 Wrong Marks : 1

$S_2O_8^{2-}$  में सल्फर तथा ऑक्सीजन परमाणुओं के बीच आबन्धों की संख्या तथा विषमलंबाक्ष सल्फर में सल्फर परमाणुओं तथा सल्फर के बीच आबन्धों की संख्या क्रमशः हैं :

Options :

1. 4 तथा 6

2. 4 तथा 8

3. 8 तथा 6

4. 8 तथा 8

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

Correct Marks : 4 Wrong Marks : 1

$S_2O_8^{2-}$  માં સલ્ફર અને ઓક્સિજન પરમાણુ વચ્ચે રહેલા બંધોની સંખ્યા અને રહોમ્બિક સલ્ફર માં રહેલા સલ્ફર અને સલ્ફર પરમાણુની વચ્ચે રહેલા બંધોની સંખ્યા અનુક્રમે :

Options :

1. 4 અને 6

2. 4 અને 8

3. 8 અને 6

4. 8 અને 8

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

The third ionization enthalpy is minimum  
for :

Options :

1. Ni
2. Mn
3. Fe
4. Co

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

जिसके लिये तृतीय आयनन एन्थैल्पी न्यूनतम है, वह  
है :

Options :

1. Ni
2. Mn
3. Fe
4. Co

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

નીચે આપેલા પૈકી કોની તૃતીય આયનીકરણ એન્થાલ્પી  
સૌથી ઓછી છે ?

Options :

1. Ni

2. Mn

3. Fe

4. Co

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

Correct Marks : 4 Wrong Marks : 1

The complex that can show *fac*- and *mer*- isomers is :

Options :

1.  $[\text{Co}(\text{NH}_3)_3(\text{NO}_2)_3]$

2.  $[\text{CoCl}_2(\text{en})_2]$

3.  $[\text{Co}(\text{NH}_3)_4\text{Cl}_2]^+$

4.  $[\text{Pt}(\text{NH}_3)_2\text{Cl}_2]$

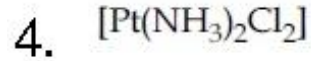
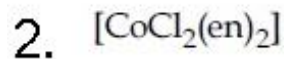
Question Number : 37 Question Type : MCQ Option Shuffling : Yes

Correct Marks : 4 Wrong Marks : 1

वह संकर जो *fac*- तथा *mer*- समावयवी प्रदर्शित करता है, है :

Options :

1.  $[\text{Co}(\text{NH}_3)_3(\text{NO}_2)_3]$

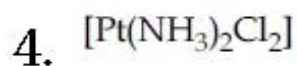


Question Number : 37 Question Type : MCQ Option Shuffling : Yes

Correct Marks : 4 Wrong Marks : 1

સંકિર્ણ કે જે *fac*- અને *mer*- સમઘટકતા દર્શાવે છે તે,

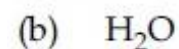
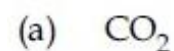
Options :



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

Correct Marks : 4 Wrong Marks : 1

Among the gases (a) - (e), the gases that cause greenhouse effect are :



Options :

1. (a) and (d)
2. (a), (c), (d) and (e)
3. (a), (b), (c) and (e)
4. (a), (b), (c) and (d)

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

Correct Marks : 4 Wrong Marks : 1

गैसों (a) से (e) में, गैसों जो ग्रीनहाउस प्रभाव पैदा करती हैं, होंगी :

- (a)  $\text{CO}_2$
- (b)  $\text{H}_2\text{O}$
- (c) CFCs
- (d)  $\text{O}_2$
- (e)  $\text{O}_3$

Options :

1. (a) तथा (d)
2. (a), (c), (d) तथा (e)
3. (a), (b), (c) तथा (e)
4. (a), (b), (c) तथा (d)

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

Correct Marks : 4 Wrong Marks : 1



નીચે આપેલા વાયુઓ (a) - (e) માંથી જે વાયુઓ ગ્રીનહાઉસ અસર ઉત્પન્ન કરે છે :

- (a)  $\text{CO}_2$
- (b)  $\text{H}_2\text{O}$
- (c) CFCs
- (d)  $\text{O}_2$
- (e)  $\text{O}_3$

Options :

1. (a) અને (d)

2. (a), (c), (d) અને (e)

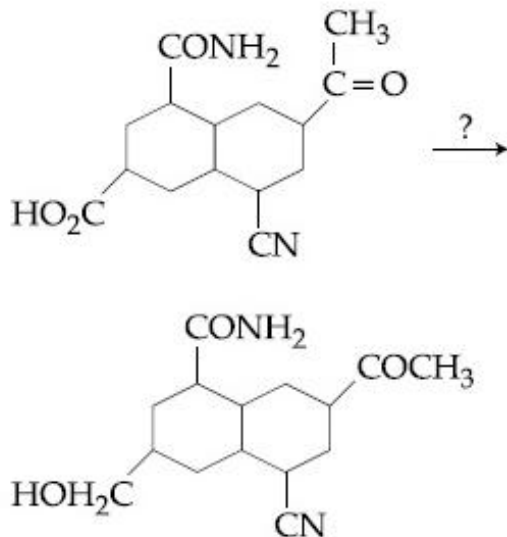
3. (a), (b), (c) અને (e)

4. (a), (b), (c) અને (d)

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

Correct Marks : 4 Wrong Marks : 1

The most suitable reagent for the given conversion is :



Options :

1.  $\text{LiAlH}_4$

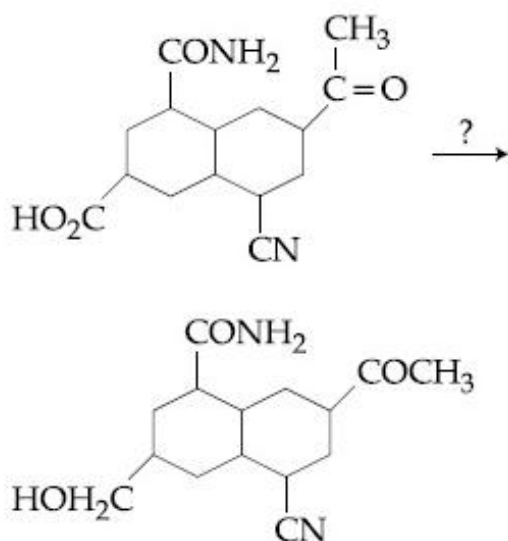
2.  $\text{B}_2\text{H}_6$

3.  $\text{H}_2/\text{Pd}$

4.  $\text{NaBH}_4$

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

दिये गये रूपान्तरण के लिए सर्वाधिक उपयुक्त अभिकर्मक है :



Options :

1.  $\text{LiAlH}_4$

2.  $\text{B}_2\text{H}_6$

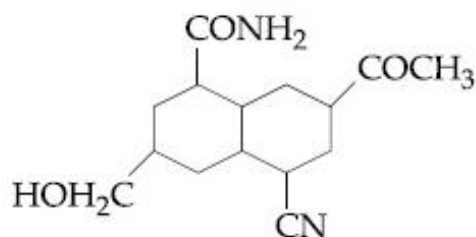
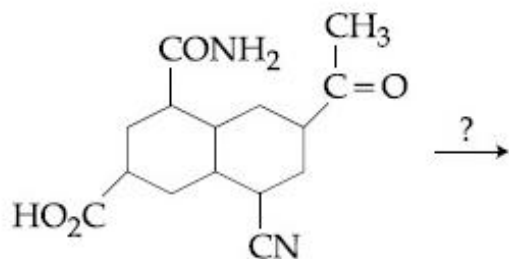
3.  $\text{H}_2/\text{Pd}$

4.  $\text{NaBH}_4$

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

Correct Marks : 4 Wrong Marks : 1

સૌથી વધુ સુસંગત પ્રક્રિયક, આપેલ રૂપાંતર માટે,



Options :

1.  $\text{LiAlH}_4$

2.  $\text{B}_2\text{H}_6$

3.  $\text{H}_2/\text{Pd}$

4.  $\text{NaBH}_4$

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

Correct Marks : 4 Wrong Marks : 1

A flask contains a mixture of isohexane and 3-methylpentane. One of the liquids boils at 63 °C while the other boils at 60 °C. What is the best way to separate the two liquids and which one will be distilled out first ?

Options :

1. fractional distillation, isohexane
2. fractional distillation, 3-methylpentane
3. simple distillation, isohexane
4. simple distillation, 3-methylpentane

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

Correct Marks : 4 Wrong Marks : 1

एक फ्लास्क में आइसोहेक्सेन तथा 3-मेथिलपेन्टेन का मिश्रण है। इन द्रवों में एक 63 °C पर उबलता है जबकि दूसरा 60 °C पर उबलता है। इन दो द्रवों को पृथक् करने का सबसे अच्छा उपाय क्या है तथा इनमें कौन सर्वप्रथम आसवित होगा ?

Options :

1. प्रभाजी आसवन, आइसोहेक्सेन
2. प्रभाजी आसवन, 3-मेथिलपेन्टेन
3. साधारण आसवन, आइसोहेक्सेन
4. साधारण आसवन, 3-मेथिलपेन्टेन

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

Correct Marks : 4 Wrong Marks : 1

એક ફ્લાસ્કમાં આઈસોહેક્ઝેન અને 3-મિથાઈલપેન્ટેનનું મિશ્રણ છે. તેમાનુ એક પ્રવાહી 63 °C ઉકળે છે જ્યારે બીજુ પ્રવાહી 60 °C એ ઉકળે છે. તો સૌથી શ્રેષ્ઠ રસ્તો આ બન્ને પ્રવાહીને અલગીકરણ કરવાનો શોધો. અને સૌથી પહેલા કયું પ્રવાહી નિસ્તંદન પામશે ?

Options :

1. વિભાગીય નિસ્તંદન, આઈસોહેક્ઝેન
2. વિભાગીય નિસ્તંદન, 3-મિથાઈલ પેન્ટેન
3. સાદુ નિસ્તંદન, આઈસોહેક્ઝેન
4. સાદુ નિસ્તંદન, 3-મિથાઈલપેન્ટેન

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

Correct Marks : 4 Wrong Marks : 1

Arrange the following compounds in increasing order of C – OH bond length :

methanol, phenol, p-ethoxyphenol

Options :

1. methanol < phenol < p-ethoxyphenol
2. phenol < p-ethoxyphenol < methanol
3. phenol < methanol < p-ethoxyphenol
4. methanol < p-ethoxyphenol < phenol

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

Correct Marks : 4 Wrong Marks : 1

निम्न यौगिकों को C–OH आबन्ध लम्बाई के बढ़ते क्रम में व्यवस्थित कीजिए :

मेथेनॉल, फीनॉल, p-एथाक्सीफीनॉल

Options :

1. मेथेनॉल < फीनॉल < p-एथाक्सीफीनॉल

2. फीनॉल < p-एथाक्सीफीनॉल < मेथेनॉल

3. फीनॉल < मेथेनॉल < p-एथाक्सीफीनॉल

4. मेथेनॉल < p-एथाक्सीफीनॉल < फीनॉल

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

Correct Marks : 4 Wrong Marks : 1

नीचे आपेला संयोजनोने C–OH बंधलंबाईना ચઢતા ક્રમમાં ગોઠવો :

મિથેનોલ, ફિનોલ, p-ઇથોક્સિ ફિનોલ

Options :

1. મિથેનોલ < ફિનોલ < p-ઇથોક્સિ ફિનોલ

2. ફિનોલ < p-ઇથોક્સિ ફિનોલ < મિથેનોલ

3. ફિનોલ < મિથેનોલ < p-ઇથોક્સિ ફિનોલ

4. મિથેનોલ < p-ઇથોક્સિ ફિનોલ < ફિનોલ

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

Correct Marks : 4 Wrong Marks : 1

Which of the following statement is not true for glucose ?

Options :

The pentaacetate of glucose does not react with hydroxylamine to give

1. oxime

Glucose reacts with hydroxylamine

2. to form oxime

Glucose gives Schiff's test for

3. aldehyde

Glucose exists in two crystalline

4. forms  $\alpha$  and  $\beta$

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

Correct Marks : 4 Wrong Marks : 1

ग्लूकोस के लिए कौन सा कथन सत्य नहीं है?

Options :

ग्लूकोस का पेन्टाऐसीटेट ऑक्साइम बनाने के लिए हाइड्राक्सिलऐमीन से अभिक्रिया नहीं

1. करता।

ग्लूकोस, हाइड्राक्सिलऐमीन के साथ अभिक्रिया

2. करके ऑक्साइम बनाता है।

ग्लूकोस, एलिडहाइड के लिए शिफ़ परीक्षण देता

3. है।



4. ગ્લૂકોસ દો ક્રિસ્ટલીય રૂપો  $\alpha$  તથા  $\beta$  મેં મિલતા હૈ।

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

Correct Marks : 4 Wrong Marks : 1

નીચે આપેલા વિધાનો પૈકી કયુ એક ગ્લુકોઝ માટે સાચું નથી?

Options :

1. ગ્લુકોઝનો પેન્ટાએસિટેટ, હાઈડ્રોક્સીન એમાઈન સાથે પ્રક્રિયા કરી ઓક્સાઈમ આપતો નથી.

2. ગ્લુકોઝ, હાઈડ્રોક્સીન એમાઈન સાથે પ્રક્રિયા કરી ઓક્સાઈમ બનાવે છે.

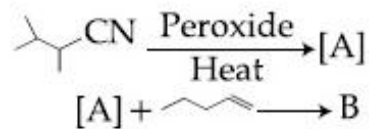
3. ગ્લુકોઝ આલ્કીહાઇડની સફીફ કસૌટી આપે છે.

4. ગ્લુકોઝ બે સફીટકમય  $\alpha$  અને  $\beta$  માં અસ્તિત્વ ધરાવે છે.

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

Correct Marks : 4 Wrong Marks : 1

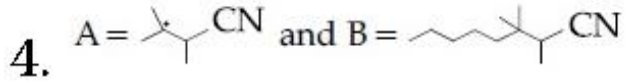
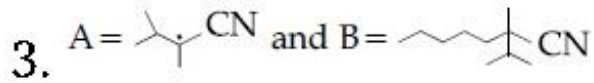
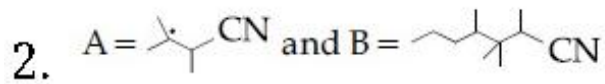
The major products A and B in the following reactions are :



Options :

1.  $\text{A} = \text{CH}_3\text{CH}_2\text{CN}$  and  $\text{B} = \text{CH}_3\text{CH}_2\text{CH}(\text{CN})\text{CH}_2\text{CH}_3$

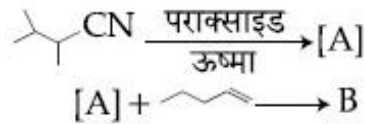




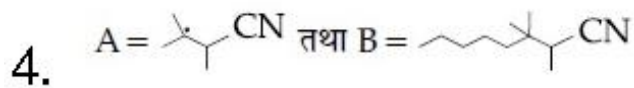
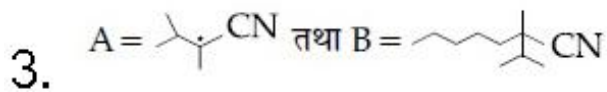
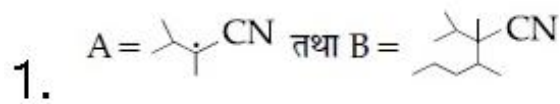
Question Number : 43 Question Type : MCQ Option Shuffling : Yes

Correct Marks : 4 Wrong Marks : 1

निम्न अभिक्रियाओं में मुख्य उत्पाद A तथा B हैं :



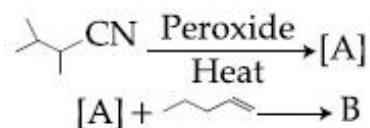
Options :



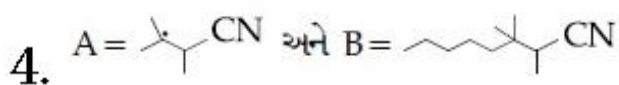
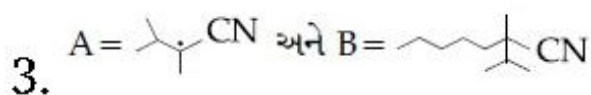
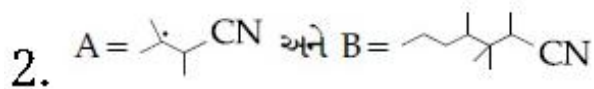
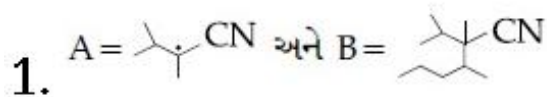
Question Number : 43 Question Type : MCQ Option Shuffling : Yes

Correct Marks : 4 Wrong Marks : 1

નીચે આપેલી પ્રક્રિયામાં મુખ્ય નીપજો A અને B શોધો :



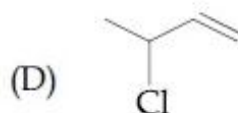
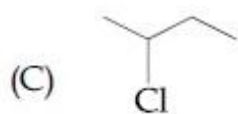
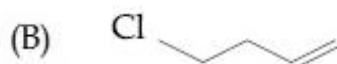
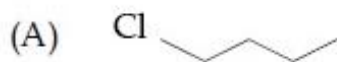
Options :



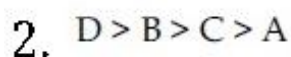
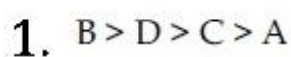
Question Number : 44 Question Type : MCQ Option Shuffling : Yes

Correct Marks : 4 Wrong Marks : 1

The decreasing order of reactivity towards dehydrohalogenation ( $E_1$ ) reaction of the following compounds is :



Options :



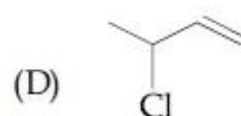
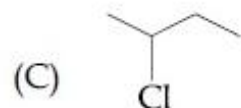
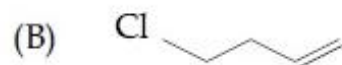
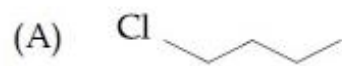
4.  $B > D > A > C$

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

Correct Marks : 4 Wrong Marks : 1

निम्न यौगिकों के डिहाइड्रोहैलोजेनेशन ( $E_1$ ) अभिक्रिया

के प्रति अभिक्रियाशीलता का घटता क्रम है :



Options :

1.  $B > D > C > A$

2.  $D > B > C > A$

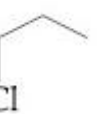
3.  $B > A > D > C$

4.  $B > D > A > C$

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

Correct Marks : 4 Wrong Marks : 1

નીચે આપેલા સંયોજનોને ડીહાઈડ્રોહેલોજનેશન ( $E_1$ ) પ્રક્રિયા માટેની સક્રિયતાના ઘટતા ક્રમમાં ગોઠવો :

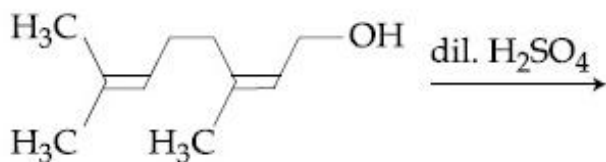
- (A) 
- (B) 
- (C) 
- (D) 

Options :

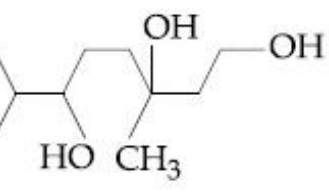
1.  $B > D > C > A$
2.  $D > B > C > A$
3.  $B > A > D > C$
4.  $B > D > A > C$

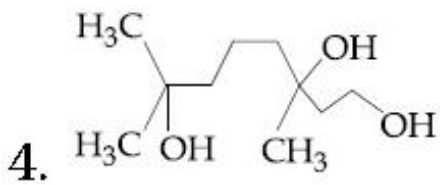
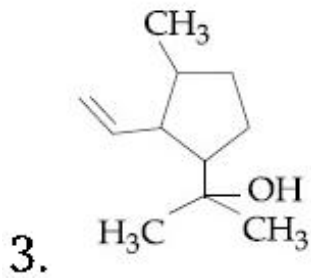
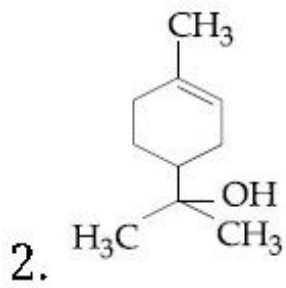
Question Number : 45 Question Type : MCQ Option Shuffling : Yes  
Correct Marks : 4 Wrong Marks : 1

The major product of the following reaction is :



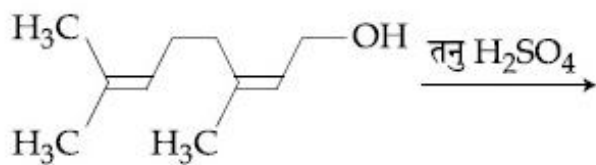
Options :

1. 

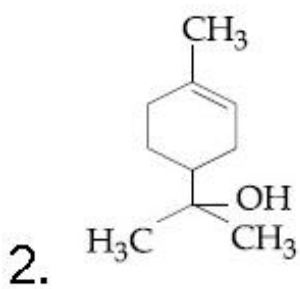
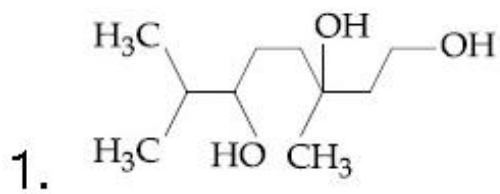


Question Number : 45 Question Type : MCQ Option Shuffling : Yes  
Correct Marks : 4 Wrong Marks : 1

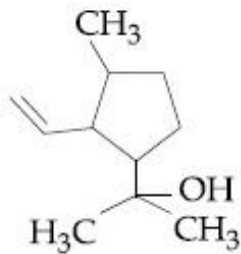
निम्नलिखित अभिक्रिया का मुख्य उत्पाद है :



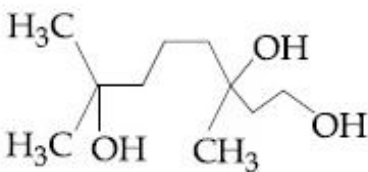
Options :



3.

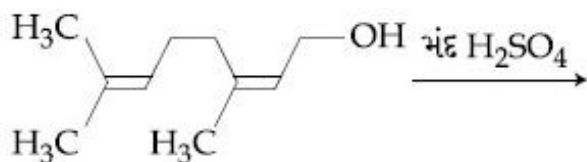


4.



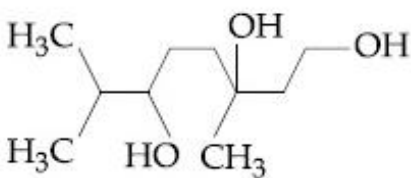
Question Number : 45 Question Type : MCQ Option Shuffling : Yes  
Correct Marks : 4 Wrong Marks : 1

આપેલી પ્રક્રિયાની મુખ્ય નીપજ શોધો :

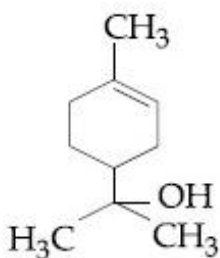


Options :

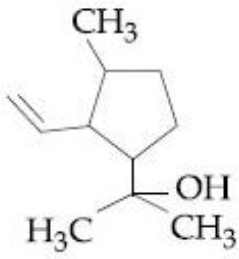
1.



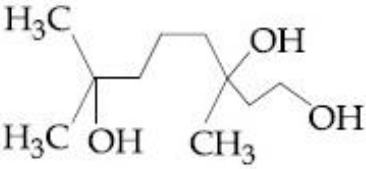
2.



3.



4.



Sub-Section Number:

2

Sub-Section Id:

40503689

Question Shuffling Allowed :

Yes

Question Number : 46 Question Type : SA

Correct Marks : 4 Wrong Marks : 0

ફેરસ સલ્ફેટ હેપ્ટાહાઈડ્રેટ નો ઉપયોગ ખોરાકમાં આયર્ન સાથે ઉમેરી શક્તિશાળી બનાવવામાં આવે છે. 100 kg ઘઉંમાં 10 ppm આયર્ન મેળવવા માટે આ ક્ષારનો જથ્થો (ગ્રામમાં) શોધો \_\_\_\_\_.

આણ્વીક દળ : Fe = 55.85; S = 32.00; O = 16.00

Response Type: Numeric

Evaluation Required For SA: Yes

Show Word Count: Yes

Answers Type: Range

Possible Answers :

4.95 to 4.99

Question Number : 46 Question Type : SA

Correct Marks : 4 Wrong Marks : 0

Ferrous sulphate heptahydrate is used to fortify foods with iron. The amount (in grams) of the salt required to achieve 10 ppm of iron in 100 kg of wheat is \_\_\_\_\_.

Atomic weight : Fe = 55.85; S = 32.00; O = 16.00

Response Type: Numeric

Evaluation Required For SA: Yes

Show Word Count: Yes

Answers Type: Range

Possible Answers :

4.95 to 4.99

Question Number : 46 Question Type : SA

Correct Marks : 4 Wrong Marks : 0

फेरस सल्फेट हेप्टाहाइड्रेट को आहार के पुष्टीकरण में आयरन के लिये प्रयोग किया जाता है। गेहूँ के 100 kg में आयरन का 10 ppm प्राप्त करने के लिए लवण की मात्रा (ग्राम में) होगी \_\_\_\_\_।

परमाणु द्रव्यमान : Fe = 55.85; S = 32.00; O = 16.00

Response Type: Numeric

Evaluation Required For SA: Yes

Show Word Count: Yes

Answers Type: Range

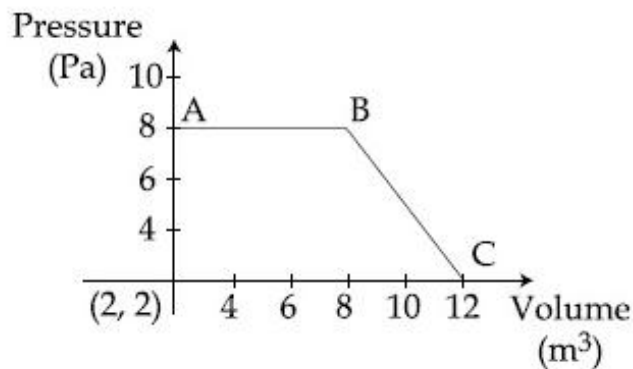
Possible Answers :

4.95 to 4.99

Question Number : 47 Question Type : SA

Correct Marks : 4 Wrong Marks : 0

The magnitude of work done by a gas that undergoes a reversible expansion along the path ABC shown in the figure is \_\_\_\_\_.



Response Type: Numeric

Evaluation Required For SA: Yes

Show Word Count: Yes

Answers Type: Range

Possible Answers :

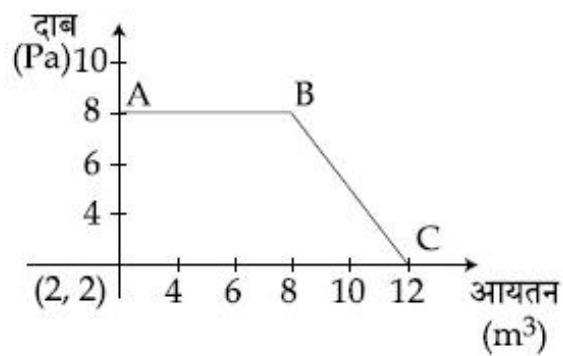
48 to 48

Question Number : 47 Question Type : SA

Correct Marks : 4 Wrong Marks : 0



उस गैस के द्वारा, जो चित्र में दिखाये गये ABC पथ के अनुसार उत्क्रमणीय प्रसारण करती है, किये गये कार्य का परिमाण होगा \_\_\_\_\_.



**Response Type:** Numeric

**Evaluation Required For SA:** Yes

**Show Word Count:** Yes

**Answers Type:** Range

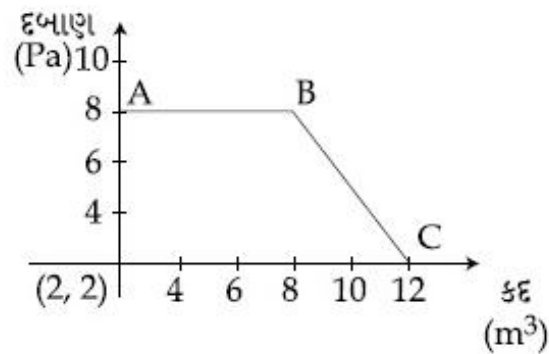
**Possible Answers :**

48 to 48

**Question Number :** 47 **Question Type :** SA

**Correct Marks :** 4 **Wrong Marks :** 0

આકૃતિમાં દર્શાવેલ પથ ABC મુજબ એક વાયુનું પ્રતિવર્તી વિસ્તરણ થાય છે તો વાયુ દ્વારા થતું કાર્ય શું \_\_\_\_\_.



**Response Type:** Numeric

**Evaluation Required For SA:** Yes

**Show Word Count:** Yes

**Answers Type:** Range

**Possible Answers :**

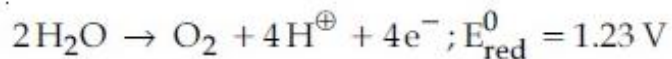
48 to 48

**Question Number :** 48 **Question Type :** SA

**Correct Marks :** 4 **Wrong Marks :** 0

What would be the electrode potential for the given half cell reaction at pH=5 ?

\_\_\_\_\_.



( $R = 8.314 \text{ J mol}^{-1} \text{ K}^{-1}$ ; Temp = 298 K;  
oxygen under std. atm. pressure of 1 bar)

Response Type: Numeric

Evaluation Required For SA: Yes

Show Word Count: Yes

Answers Type: Range

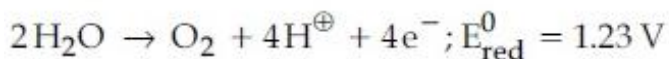
Possible Answers :

-0.93 to -0.94

Question Number : 48 Question Type : SA

Correct Marks : 4 Wrong Marks : 0

pH=5 પર, દી ગઈ અર્ધ સેલ અભિક્રિયા કે લિફ  
ઇલેક્ટ્રોડ વિભવ ક્યા હોગા ?



( $R = 8.314 \text{ J mol}^{-1} \text{ K}^{-1}$ ; Temp = 298 K;  
ઑક્સીજન માનક વાયુમંડલીય દાવ 1 bar પર)

Response Type: Numeric

Evaluation Required For SA: Yes

Show Word Count: Yes

Answers Type: Range

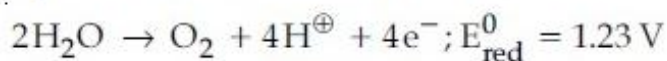
Possible Answers :

-0.93 to -0.94

Question Number : 48 Question Type : SA

Correct Marks : 4 Wrong Marks : 0

pH=5 પર, આપેલ અર્ધ કોષ પ્રક્રિયા,



માટે ઇલેક્ટ્રોડ પોટેન્શિયલ શોધો .

$R = 8.314 \text{ J mol}^{-1} \text{ K}^{-1}$ ; તાપમાન = 298 K;  
ઑક્સિજન પ્રમાણિત વાતાવરણ દબાણ 1 બાર પર

Response Type: Numeric

Evaluation Required For SA: Yes

Show Word Count: Yes

Answers Type: Range

Possible Answers :

-0.93 to -0.94

Question Number : 49 Question Type : SA

Correct Marks : 4 Wrong Marks : 0

The volume (in mL) of 0.125 M  $\text{AgNO}_3$  required to quantitatively precipitate chloride ions in 0.3 g of  $[\text{Co}(\text{NH}_3)_6]\text{Cl}_3$  is \_\_\_\_\_.

$$M_{[\text{Co}(\text{NH}_3)_6]\text{Cl}_3} = 267.46 \text{ g/mol}$$

$$M_{\text{AgNO}_3} = 169.87 \text{ g/mol}$$

**Response Type:** Numeric

**Evaluation Required For SA:** Yes

**Show Word Count:** Yes

**Answers Type:** Range

**Possible Answers :**

26.60 to 27.0

**Question Number :** 49 **Question Type :** SA

**Correct Marks :** 4 **Wrong Marks :** 0

$[\text{Co}(\text{NH}_3)_6]\text{Cl}_3$  के 0.3 g में क्लोराइड आयन को मात्रात्मक रूप से अवक्षेपित करने के लिए 0.125 M  $\text{AgNO}_3$  का कितना आयतन (mL में) आवश्यक होगा \_\_\_\_\_.

$$M_{[\text{Co}(\text{NH}_3)_6]\text{Cl}_3} = 267.46 \text{ g/mol}$$

$$M_{\text{AgNO}_3} = 169.87 \text{ g/mol}$$

**Response Type:** Numeric

**Evaluation Required For SA:** Yes

**Show Word Count:** Yes

**Answers Type:** Range

**Possible Answers :**

26.60 to 27.0

**Question Number :** 49 **Question Type :** SA

**Correct Marks :** 4 **Wrong Marks :** 0

$[\text{Co}(\text{NH}_3)_6]\text{Cl}_3$  ના 0.3 g માં જથ્થાત્મક રીતે ક્લોરાઈડ આયનને અવક્ષેપીત કરવામાટે જરૂરી 0.125 M  $\text{AgNO}_3$  નું કદ (mL માં) છે \_\_\_\_\_.

$$M_{[\text{Co}(\text{NH}_3)_6]\text{Cl}_3} = 267.46 \text{ g/mol}$$

$$M_{\text{AgNO}_3} = 169.87 \text{ g/mol}$$

**Response Type:** Numeric

**Evaluation Required For SA:** Yes

**Show Word Count:** Yes

**Answers Type:** Range

**Possible Answers :**

26.60 to 27.0

**Question Number :** 50 **Question Type :** SA

**Correct Marks :** 4 **Wrong Marks :** 0

The number of chiral centres in penicillin is \_\_\_\_\_.

**Response Type:** Numeric  
**Evaluation Required For SA:** Yes  
**Show Word Count:** Yes  
**Answers Type:** Range  
**Possible Answers :**  
3 to 3

**Question Number :** 50 **Question Type :** SA  
**Correct Marks :** 4 **Wrong Marks :** 0

पेनिसिलीन में काइरल केन्द्रों की संख्या है \_\_\_\_\_.

**Response Type:** Numeric  
**Evaluation Required For SA:** Yes  
**Show Word Count:** Yes  
**Answers Type:** Range  
**Possible Answers :**  
3 to 3

**Question Number :** 50 **Question Type :** SA  
**Correct Marks :** 4 **Wrong Marks :** 0

पेनिसिलीनमां रहेला किराल कार्बननी संख्या शोधो \_\_\_\_\_.

**Response Type:** Numeric  
**Evaluation Required For SA:** Yes  
**Show Word Count:** Yes  
**Answers Type:** Range  
**Possible Answers :**  
3 to 3