

National Testing Agency

Question Paper Name :	BTECH E 6th Sep 2020 Shift 1
Subject Name :	BTECH E
Creation Date :	2020-09-06 13:49:32
Duration :	180
Total Marks :	300
Display Marks:	Yes
Share Answer Key With Delivery Engine :	Yes
Actual Answer Key :	Yes

BTECH

Group Number :	1
Group Id :	405036126
Group Maximum Duration :	0
Group Minimum Duration :	180
Show Attended Group? :	No
Edit Attended Group? :	No
Break time :	0
Group Marks :	300
Is this Group for Examiner? :	No

Chemistry

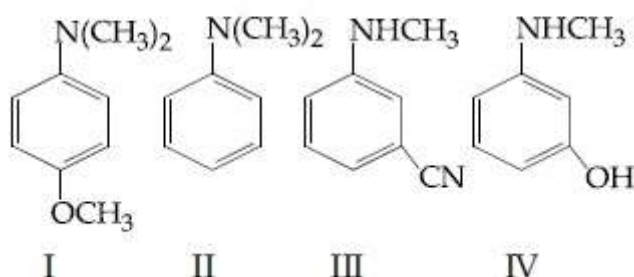
Section Id :	405036419
Section Number :	2
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	25
Number of Questions to be attempted :	25

Section Marks :	100
Display Number Panel :	Yes
Group All Questions :	Yes
Mark As Answered Required? :	Yes
Sub-Section Number :	1
Sub-Section Id :	405036805
Question Shuffling Allowed :	Yes

Question Number : 26 Question Id : 40503611481 Question Type : MCQ Option Shuffling : Yes
 Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option
 Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The increasing order of pK_b values of the following compounds is :



Options :

40503641626. I < II < IV < III

40503641627. II < I < III < IV

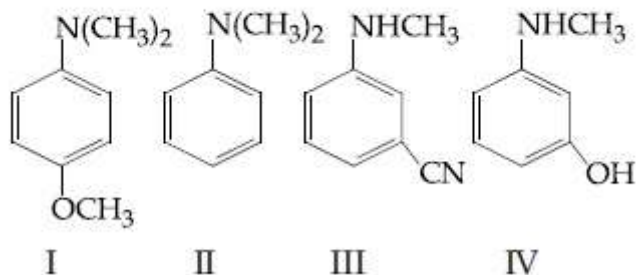
40503641628. I < II < III < IV

40503641629. II < IV < III < I

Question Number : 26 Question Id : 40503611481 Question Type : MCQ Option Shuffling : Yes
 Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option
 Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

निम्न यौगिकों के pK_b के मान का बढ़ता क्रम है :



Options :

40503641626. I < II < IV < III

40503641627. II < I < III < IV

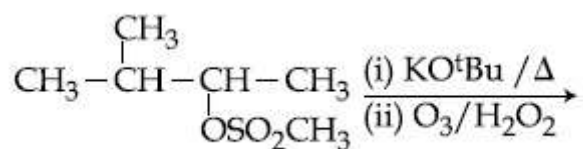
40503641628. I < II < III < IV

40503641629. II < IV < III < I

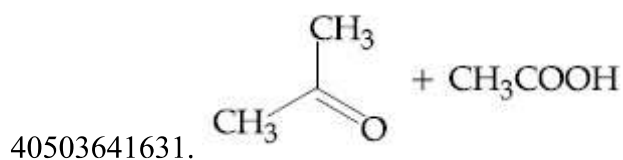
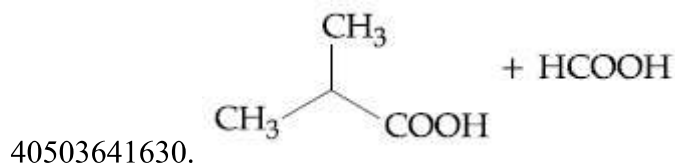
Question Number : 27 Question Id : 40503611482 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option
Orientation : Vertical

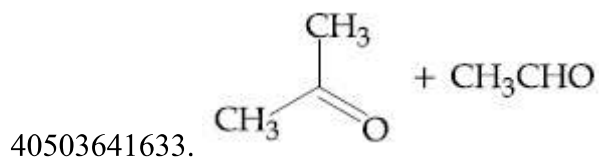
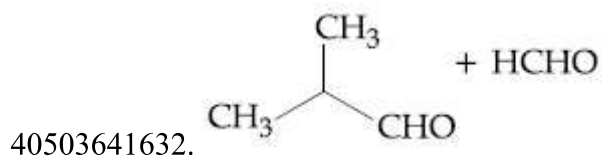
Correct Marks : 4 Wrong Marks : 1

The major products of the following reaction are :



Options :

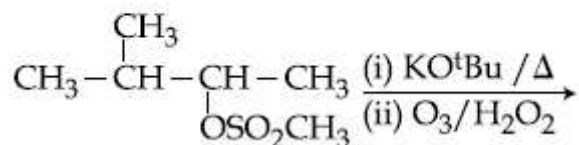




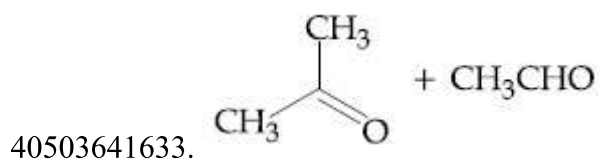
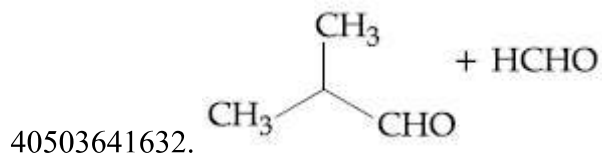
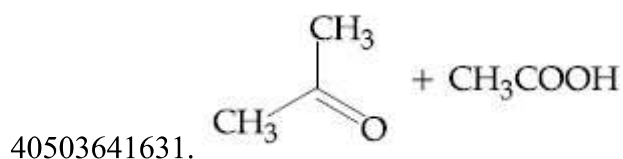
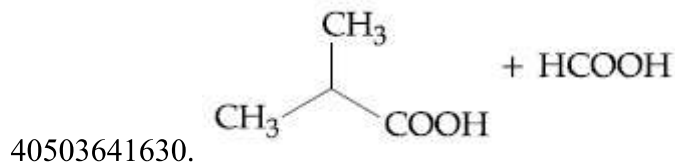
Question Number : 27 Question Id : 40503611482 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

निम्न अभिक्रिया के मुख्य उत्पाद हैं :



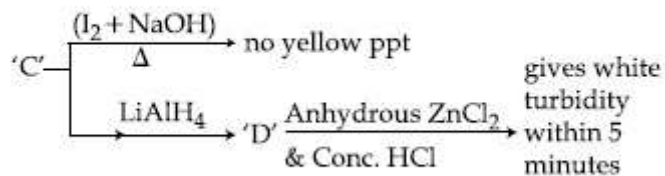
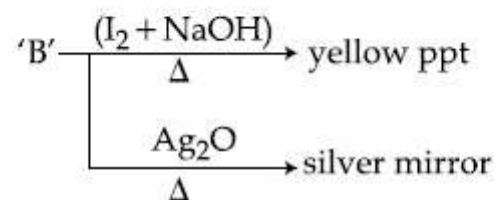
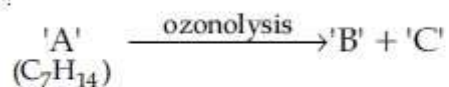
Options :



Question Number : 28 Question Id : 40503611483 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

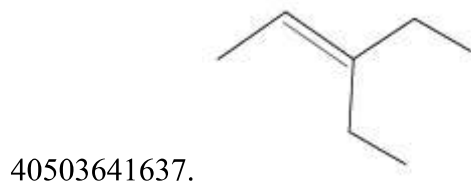
Correct Marks : 4 Wrong Marks : 1

Consider the following reactions :



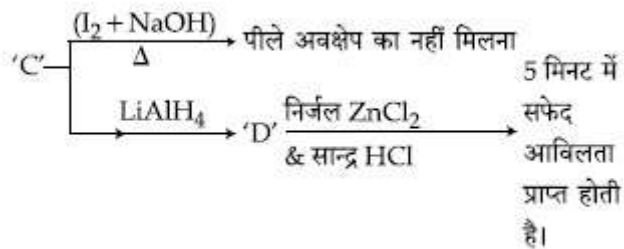
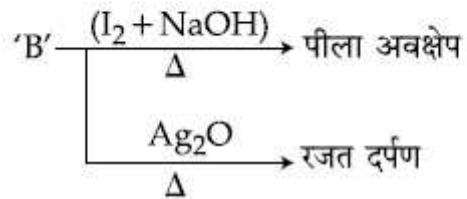
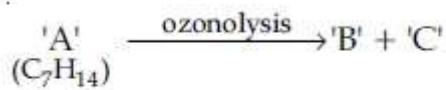
'A' is :

Options :



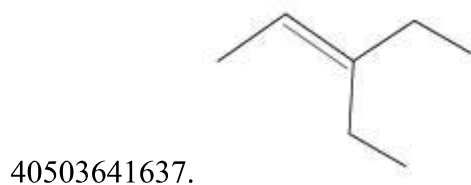
Question Number : 28 Question Id : 40503611483 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option
Orientation : Vertical
Correct Marks : 4 Wrong Marks : 1

निम्न अभिक्रियाओं पर विचार कीजिए :



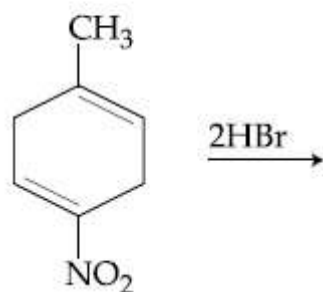
'A' है :

Options :

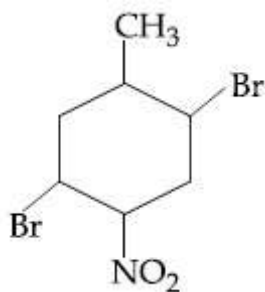


Question Number : 29 Question Id : 40503611484 Question Type : MCQ Option Shuffling : Yes
 Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option
 Orientation : Vertical
 Correct Marks : 4 Wrong Marks : 1

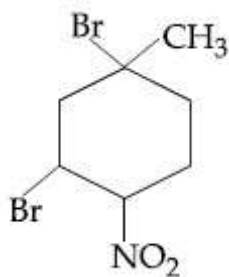
The major product of the following reaction is :



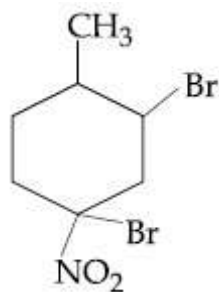
Options :



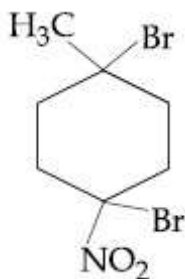
40503641638.



40503641639.



40503641640.

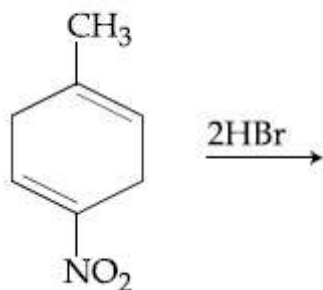


40503641641.

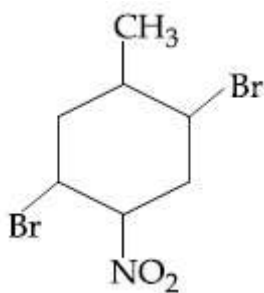
Question Number : 29 Question Id : 40503611484 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option
Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

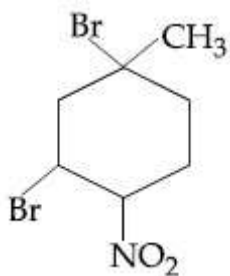
निम्न अभिक्रिया का मुख्य उत्पाद है :



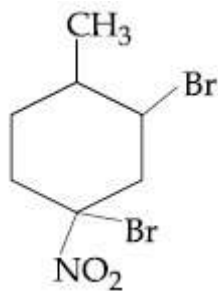
Options :



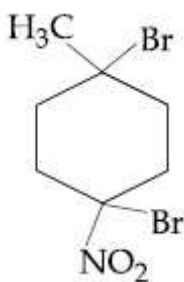
40503641638.



40503641639.



40503641640.



40503641641.

Question Number : 30 Question Id : 40503611485 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option
Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Consider the Assertion and Reason given below.

Assertion (A) : Ethene polymerized in the presence of Ziegler Natta Catalyst at high temperature and pressure is used to make buckets and dustbins.

Reason (R) : High density polymers are closely packed and are chemically inert.

Choose the correct answer from the following :

Options :

40503641642. Both (A) and (R) are correct and (R) is the correct explanation of (A).

40503641643. Both (A) and (R) are correct but (R) is not the correct explanation of (A).

40503641644. (A) is correct but (R) is wrong.

40503641645. (A) and (R) both are wrong.

Question Number : 30 Question Id : 40503611485 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option
Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

नीचे दिये गये कथन तथा कारण पर विचार कीजिए।

कथन (A) : उच्च ताप तथा दाब पर जिगलर-नाटा उत्प्रेरक की उपस्थिति में एथीन के बहुलकीकृत होने में प्राप्त पालीमर का उपयोग बकेट (बॉल्टी) तथा डस्टबिन के बनाने में होता है।

कारण (R) : उच्च घनत्व वाले पालीमर (बहुलक) संवृतता से संकुलित होते हैं तथा रासायनिक दृष्टि से उदासीन होते हैं।

निम्न में से सही उत्तर चुनिये :

Options :

40503641642. (A) तथा (R) दोनों सही हैं तथा (R), (A) की सही व्याख्या है।

40503641643. (A) तथा (R) दोनों ही सही हैं परन्तु (R), (A) की सही व्याख्या नहीं है।

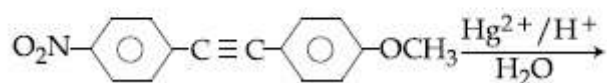
40503641644. (A) सही है परन्तु (R) गलत है।

40503641645. (A) तथा (R) दोनों ही गलत हैं।

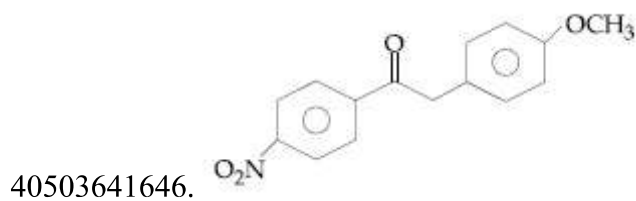
Question Number : 31 Question Id : 40503611486 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

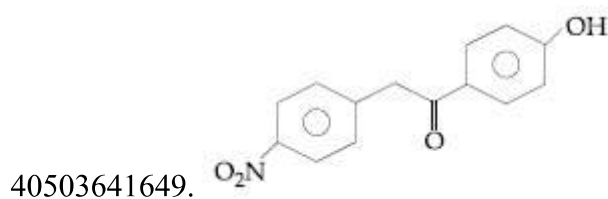
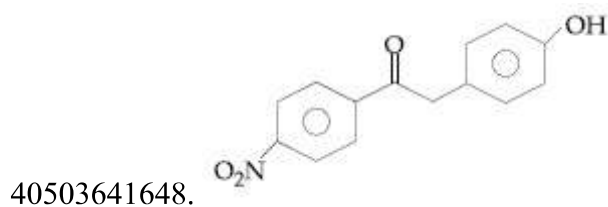
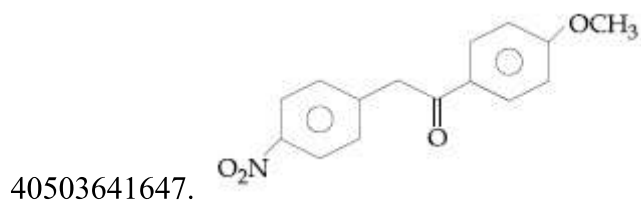
Correct Marks : 4 Wrong Marks : 1

The major product obtained from the following reaction is :



Options :

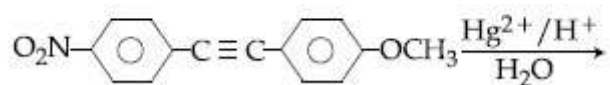




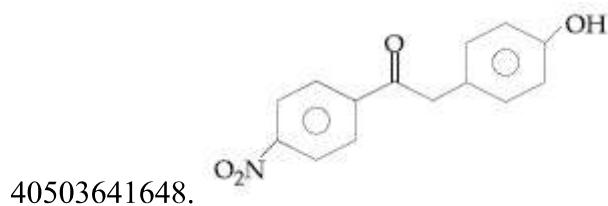
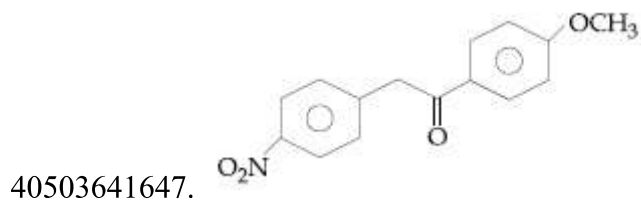
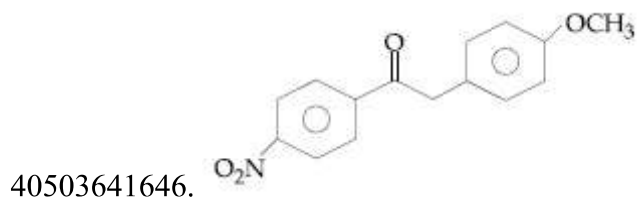
Question Number : 31 Question Id : 40503611486 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

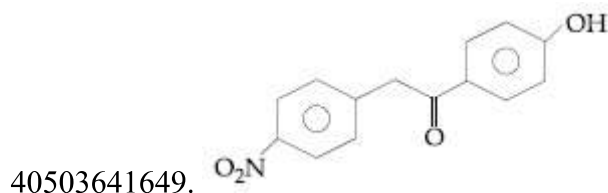
Correct Marks : 4 Wrong Marks : 1

निम्न अभिक्रिया से प्राप्त होने वाला मुख्य उत्पाद है :



Options :





Question Number : 32 Question Id : 40503611487 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Which of the following compounds shows geometrical isomerism ?

Options :

40503641650. 2-methylpent-1-ene

40503641651. 2-methylpent-2-ene

40503641652. 4-methylpent-1-ene

40503641653. 4-methylpent-2-ene

Question Number : 32 Question Id : 40503611487 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

निम्न में से कौन सा यौगिक ज्यामितीय समावयवता प्रदर्शित करता है ?

Options :

40503641650. 2-मेथिलपेन्ट-1-ईन

40503641651. 2-मेथिलपेन्ट-2-ईन

40503641652. 4-मेथिलपेन्ट-1-ईन

40503641653. 4-मेथिलपेन्ट-2-ईन

Question Number : 33 Question Id : 40503611488 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The set that contains atomic numbers of only transition elements, is :

Options :

40503641654. 21, 25, 42, 72

40503641655. 9, 17, 34, 38

40503641656. 37, 42, 50, 64

40503641657. 21, 32, 53, 64

Question Number : 33 Question Id : 40503611488 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

वह सेट जिसमें मात्र संक्रमण तत्वों की परमाणु संख्याओं का समावेश है, होगा :

Options :

40503641654. 21, 25, 42, 72

40503641655. 9, 17, 34, 38

40503641656. 37, 42, 50, 64

40503641657. 21, 32, 53, 64

Question Number : 34 Question Id : 40503611489 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The INCORRECT statement is :

Options :

40503641658. bronze is an alloy of copper and tin.

40503641659. german silver is an alloy of zinc,
copper and nickel.

40503641660. cast iron is used to manufacture
wrought iron.

40503641661. brass is an alloy of copper and nickel.

**Question Number : 34 Question Id : 40503611489 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option
Orientation : Vertical
Correct Marks : 4 Wrong Marks : 1**

गलत कथन है :

Options :

40503641658. ब्रांज, कॉपर तथा टिन की एक मिश्रातु है।

40503641659. जर्मन सिल्वर, जिंक, कॉपर तथा निकल का
एक मिश्रातु है।

40503641660. राट आयरन (पिटवाँ लोहा) के निर्माण में कास्ट
आयरन (ढलवाँ लोहा) प्रयुक्त होता है।

40503641661. ब्रास, कॉपर तथा निकल का एक मिश्रातु है।

**Question Number : 35 Question Id : 40503611490 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option
Orientation : Vertical**

Correct Marks : 4 Wrong Marks : 1

Among the sulphates of alkaline earth
metals, the solubilities of BeSO_4 and MgSO_4
in water, respectively, are :

Options :

40503641662. high and high

40503641663. poor and high

40503641664. high and poor

40503641665. poor and poor

Question Number : 35 Question Id : 40503611490 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

क्षारीय मृदा धातुओं के सल्फेट के बीच, जल में BeSO_4
तथा MgSO_4 की घुलनशीलता क्रमशः हैं :

Options :

40503641662. उच्च तथा उच्च

40503641663. अल्प तथा उच्च

40503641664. उच्च तथा अल्प

40503641665. अल्प तथा अल्प

Question Number : 36 Question Id : 40503611491 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The correct statement with respect to
dinitrogen is :

Options :

40503641666. liquid dinitrogen is not used in
cryosurgery.

40503641667. it can be used as an inert diluent for
reactive chemicals.

40503641668. it can combine with dioxygen at
25 °C.

40503641669. N_2 is paramagnetic in nature.

Question Number : 36 Question Id : 40503611491 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option
Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

डाइनाइट्रोजन के संदर्भ में सही कथन होगा :

Options :

40503641666. द्रव डाइनाइट्रोजन का प्रयोग क्रायोसर्जरी
(निम्नताप सर्जरी) में नहीं होता है।

40503641667. यह सक्रिय रसायनों के लिए एक निष्क्रिय
तनुकारी के रूप में प्रयुक्त किया जा सकता है।

40503641668. यह 25 °C पर डाइऑक्सीजन के साथ संयोग
कर सकता है।

40503641669. N_2 की प्रकृति अनुचुम्बकीय है।

Question Number : 37 Question Id : 40503611492 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option
Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The lanthanoid that does NOT show +4
oxidation state is :

Options :

40503641670. Dy

40503641671. Eu

40503641672. Tb

40503641673. Ce

Question Number : 37 Question Id : 40503611492 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option
Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

वह लैन्थन्यायड जो +4 आक्सीकरण अवस्था नहीं प्रदर्शित करता है, होगा :

Options :

40503641670. Dy

40503641671. Eu

40503641672. Tb

40503641673. Ce

Question Number : 38 Question Id : 40503611493 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The species that has a spin-only magnetic moment of 5.9 BM, is :

(T_d = tetrahedral)

Options :

40503641674. $Ni(CO)_4$ (T_d)

40503641675. $[MnBr_4]^{2-}$ (T_d)

40503641676. $[NiCl_4]^{2-}$ (T_d)

40503641677. $[Ni(CN)_4]^{2-}$ (square planar)

Question Number : 38 Question Id : 40503611493 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

वह स्पीशीज़ जिसमें 5.9 BM का स्पिन मात्र चुम्बकीय आघूर्ण है, होगी :

[T_d = (टेट्राहेड्रल) चतुष्फलकीय]

Options :

40503641674. $Ni(CO)_4$ (T_d)

40503641675. $[\text{MnBr}_4]^{2-}$ (T_d)

40503641676. $[\text{NiCl}_4]^{2-}$ (T_d)

40503641677. $[\text{Ni}(\text{CN})_4]^{2-}$ (वर्ग समतली)

Question Number : 39 Question Id : 40503611494 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The presence of soluble fluoride ion upto
1 ppm concentration in drinking water, is :

Options :

40503641678. safe for teeth

40503641679. harmful for teeth

40503641680. harmful to bones

40503641681. harmful to skin

Question Number : 39 Question Id : 40503611494 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

पेय जल में 1 ppm सान्द्रता के घुलनशील फ्लोराइड
आयन की उपस्थिति होगी :

Options :

40503641678. दाँतों के लिए सुरक्षित

40503641679. दाँतों के लिए हानिकारक

40503641680. हड्डियों के लिए हानिकारक

40503641681. त्वचा के लिए हानिकारक

Question Number : 40 Question Id : 40503611495 Question Type : MCQ Option Shuffling : Yes
 Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option
 Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

A solution of two components containing n_1 moles of the 1st component and n_2 moles of the 2nd component is prepared. M_1 and M_2 are the molecular weights of component 1 and 2 respectively. If d is the density of the solution in g mL^{-1} , C_2 is the molarity and x_2 is the mole fraction of the 2nd component, then C_2 can be expressed as :

Options :

40503641682.
$$C_2 = \frac{1000 d x_2}{M_1 + x_2 (M_2 - M_1)}$$

40503641683.
$$C_2 = \frac{d x_2}{M_2 + x_2 (M_2 - M_1)}$$

40503641684.
$$C_2 = \frac{d x_1}{M_2 + x_2 (M_2 - M_1)}$$

40503641685.
$$C_2 = \frac{1000 x_2}{M_1 + x_2 (M_2 - M_1)}$$

Question Number : 40 Question Id : 40503611495 Question Type : MCQ Option Shuffling : Yes
 Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option
 Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

दो अवयवों का एक विलयन है जो n_1 मोल प्रथम अवयव तथा n_2 मोल द्वितीय अवयव को मिलाकर तैयार किया गया है। अवयव 1 तथा अवयव 2 के अणुभार क्रमशः M_1 तथा M_2 हैं। यदि विलयन का घनत्व (g mL^{-1} में) d है तथा द्वितीय अवयव की मोलरता C_2 एवं मोल प्रभांश x_2 हो तो C_2 को इस प्रकार अभिव्यक्त कर सकते हैं :

Options :

40503641682.
$$C_2 = \frac{1000 \, d \, x_2}{M_1 + x_2 (M_2 - M_1)}$$

40503641683.
$$C_2 = \frac{d \, x_2}{M_2 + x_2 (M_2 - M_1)}$$

40503641684.
$$C_2 = \frac{d \, x_1}{M_2 + x_2 (M_2 - M_1)}$$

40503641685.
$$C_2 = \frac{1000 \, x_2}{M_1 + x_2 (M_2 - M_1)}$$

Question Number : 41 Question Id : 40503611496 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The variation of equilibrium constant with temperature is given below :

Temperature	Equilibrium Constant
-------------	----------------------

$T_1 = 25 \, ^\circ\text{C}$	$K_1 = 10$
------------------------------	------------

$T_2 = 100 \, ^\circ\text{C}$	$K_2 = 100$
-------------------------------	-------------

The values of ΔH° , ΔG° at T_1 and ΔG° at T_2 (in kJ mol^{-1}) respectively, are close to

[use $R = 8.314 \, \text{J K}^{-1} \text{mol}^{-1}$]

Options :

40503641686. 0.64, -7.14 and -5.71

40503641687. 28.4, -5.71 and -14.29

40503641688. 28.4, -7.14 and -5.71

40503641689. 0.64, -5.71 and -14.29

Question Number : 41 Question Id : 40503611496 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

ताप के साथ साम्य स्थिरांक का परिवर्तन नीचे दिया गया है :

ताप साम्य स्थिरांक

$$T_1 = 25^\circ\text{C} \quad K_1 = 10$$

$$T_2 = 100^\circ\text{C} \quad K_2 = 100$$

ΔH° , T_1 पर ΔG° तथा T_2 पर ΔG° के मान (kJ mol^{-1} में) क्रमशः निम्न के सन्निकट होंगे :

$$[R = 8.314 \text{ J K}^{-1} \text{ mol}^{-1}]$$

Options :

40503641686. $0.64, -7.14$ तथा -5.71

40503641687. $28.4, -5.71$ तथा -14.29

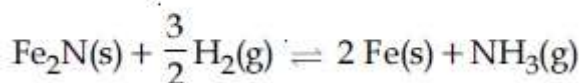
40503641688. $28.4, -7.14$ तथा -5.71

40503641689. $0.64, -5.71$ तथा -14.29

Question Number : 42 Question Id : 40503611497 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

For the reaction



Options :

40503641690. $K_c = K_p (RT)^{-1/2}$

40503641691. $K_c = K_p (RT)^{1/2}$

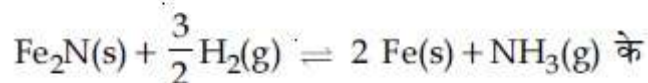
40503641692. $K_c = K_p (RT)$

40503641693. $K_c = K_p (RT)^{3/2}$

Question Number : 42 Question Id : 40503611497 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option
Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

अभिक्रिया,



लिए :

Options :

40503641690. $K_c = K_p (RT)^{-1/2}$

40503641691. $K_c = K_p (RT)^{1/2}$

40503641692. $K_c = K_p (RT)$

40503641693. $K_c = K_p (RT)^{3/2}$

Question Number : 43 Question Id : 40503611498 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option
Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Arrange the following solutions in the
decreasing order of pOH :

(A) 0.01 M HCl

(B) 0.01 M NaOH

(C) 0.01 M CH_3COONa

(D) 0.01 M NaCl

Options :

40503641694. (B) > (D) > (C) > (A)

40503641695. (B) > (C) > (D) > (A)

40503641696. (A) > (C) > (D) > (B)

40503641697. (A) > (D) > (C) > (B)

Question Number : 43 Question Id : 40503611498 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

निम्न विलयनों को pOH के घटते क्रम में व्यवस्थित कीजिए।

(A) 0.01 M HCl

(B) 0.01 M NaOH

(C) 0.01 M CH₃COONa

(D) 0.01 M NaCl

Options :

40503641694. (B) > (D) > (C) > (A)

40503641695. (B) > (C) > (D) > (A)

40503641696. (A) > (C) > (D) > (B)

40503641697. (A) > (D) > (C) > (B)

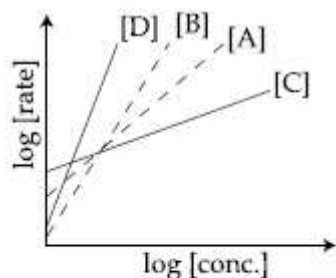
Question Number : 44 Question Id : 40503611499 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Consider the following reactions



The order of the above reactions are a, b, c, and d, respectively. The following graph is obtained when $\log[\text{rate}]$ vs. $\log[\text{conc.}]$ are plotted :



Among the following, the correct sequence for the order of the reactions is :

Options :

40503641698. $c > a > b > d$

40503641699. $d > a > b > c$

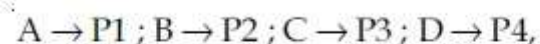
40503641700. $d > b > a > c$

40503641701. $a > b > c > d$

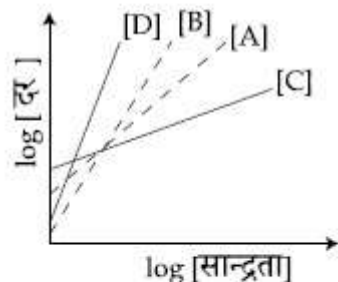
Question Number : 44 Question Id : 40503611499 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option
Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

निम्न अभिक्रिया पर विचार कीजिए :



उपरोक्त अभिक्रियाओं की कोटि क्रमशः a, b, c तथा d हैं। $\log[\text{दर}]$ विरुद्ध $\log[\text{सान्द्रता}]$ के प्लॉट से निम्न ग्राफ प्राप्त होता है :



निम्न में से अभिक्रियाओं की कोटि के लिए सही क्रम होगा :

Options :

40503641698. $c > a > b > d$

40503641699. $d > a > b > c$

40503641700. $d > b > a > c$

40503641701. $a > b > c > d$

Question Number : 45 Question Id : 40503611500 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option
Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Kraft temperature is the temperature :

Options :

40503641702. below which the formation of micelles takes place.

40503641703. above which the formation of micelles takes place.

40503641704. below which the aqueous solution of detergents starts freezing.

above which the aqueous solution of
40503641705. detergents starts boiling.

Question Number : 45 Question Id : 40503611500 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option
Orientation : Vertical
Correct Marks : 4 Wrong Marks : 1

क्राफ्ट ताप वह ताप है :

Options :

40503641702. जिसके नीचे मिसेल का निर्माण होता है।

40503641703. जिसके ऊपर मिसेल का निर्माण होता है।

40503641704. जिसके नीचे डिटरजेंट के जलीय विलयन का
हिमन (जमना) प्रारंभ हो जाता है।

40503641705. जिसके ऊपर डिटरजेंट के जलीय विलयन का
उबलना प्रारंभ हो जाता है।

Sub-Section Number :

2

Sub-Section Id :

405036806

Question Shuffling Allowed :

Yes

Question Number : 46 Question Id : 40503611501 Question Type : SA Display Question Number : Yes
Correct Marks : 4 Wrong Marks : 0

In an estimation of bromine by Carius
method, 1.6 g of an organic compound
gave 1.88 g of AgBr. The mass percentage
of bromine in the compound is

_____.

(Atomic mass, Ag = 108, Br = 80 g mol⁻¹)

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

5 to 5.002

Question Number : 46 Question Id : 40503611501 Question Type : SA Display Question Number : Yes
Correct Marks : 4 Wrong Marks : 0

कैरियस विधि द्वारा ब्रोमीन के एक आकलन में एक कार्बनिक यौगिक का 1.6 g, AgBr का 1.88 g देता है। यौगिक में ब्रोमीन की संहति प्रतिशतता है _____.

(Atomic mass, Ag = 108, Br = 80 g mol⁻¹)

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

5 to 5.002

Question Number : 47 Question Id : 40503611502 Question Type : SA Display Question Number : Yes
Correct Marks : 4 Wrong Marks : 0

The number of Cl=O bonds in perchloric acid is, "_____."

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

5 to 5.002

Question Number : 47 Question Id : 40503611502 Question Type : SA Display Question Number : Yes
Correct Marks : 4 Wrong Marks : 0

परक्लोरिक एसिड में Cl=O आबन्धों की संख्या है _____.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

5 to 5.002

Question Number : 48 Question Id : 40503611503 Question Type : SA Display Question Number : Yes
Correct Marks : 4 Wrong Marks : 0

A spherical balloon of radius 3 cm containing helium gas has a pressure of 48×10^{-3} bar. At the same temperature, the pressure, of a spherical balloon of radius 12 cm containing the same amount of gas will be _____ $\times 10^{-6}$ bar.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

5 to 5.002

Question Number : 48 Question Id : 40503611503 Question Type : SA Display Question Number : Yes
Correct Marks : 4 Wrong Marks : 0

3 cm त्रिज्या के एक गोलीय गुब्बारे में 48×10^{-3} bar दाब पर हीलियम गैस भरी है। उसी ताप पर, 12 cm त्रिज्या के गोलीय गुब्बारे में उसी मात्रा की भरी हुई गैस का दाब (millibar में) होगा _____ $\times 10^{-6}$ bar.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

5 to 5.002

Question Number : 49 Question Id : 40503611504 Question Type : SA Display Question Number : Yes
Correct Marks : 4 Wrong Marks : 0

The elevation of boiling point of 0.10 m aqueous $\text{CrCl}_3 \cdot x\text{NH}_3$ solution is two times that of 0.05 m aqueous CaCl_2 solution. The value of x is _____.

[Assume 100% ionisation of the complex and CaCl_2 , coordination number of Cr as 6, and that all NH_3 molecules are present inside the coordination sphere]

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

5 to 5.002

Question Number : 49 Question Id : 40503611504 Question Type : SA Display Question Number : Yes

Correct Marks : 4 Wrong Marks : 0

0.10 m के जलीय $\text{CrCl}_3 \cdot x\text{NH}_3$ का क्वथनांक उन्नयन, 0.05 m के जलीय CaCl_2 विलयन के क्वथनांक उन्नयन का दोगुना है। x का मान है _____.

(संकर तथा CaCl_2 के आयनन को 100%, Cr की समन्वय संख्या 6 तथा NH_3 के सभी अणु समन्वय गोले के अंदर उपस्थित होने को मानें)

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

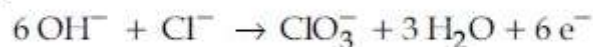
Possible Answers :

5 to 5.002

Question Number : 50 Question Id : 40503611505 Question Type : SA Display Question Number : Yes

Correct Marks : 4 Wrong Marks : 0

Potassium chlorate is prepared by the electrolysis of KCl in basic solution



If only 60% of the current is utilized in the reaction, the time (rounded to the nearest hour) required to produce 10 g of KClO_3 using a current of 2 A is _____.

(Given : $F = 96,500 \text{ C mol}^{-1}$; molar mass of $\text{KClO}_3 = 122 \text{ g mol}^{-1}$)

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

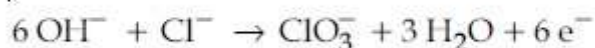
Possible Answers :

5 to 5.002

Question Number : 50 **Question Id :** 40503611505 **Question Type :** SA **Display Question Number :** Yes

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

क्षारीय विलयन में KCl के विद्युत अपघटन द्वारा पोटेशियम क्लोरेट को तैयार किया जाता है।



अभिक्रिया में मात्र 60% विद्युत धारा प्रयुक्त होती है। 2 A के विद्युत धारा का उपयोग करके 10 g KClO_3 को बनाने के लिए कितना समय (घंटों में) आवश्यक होगा _____.

(दिया गया है : $F = 96,500 \text{ C mol}^{-1}$; KClO_3 का मोलर द्रव्यमान = 122 g mol^{-1})

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

5 to 5.002