

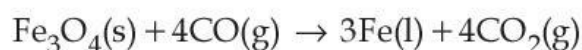
JEE Main 2022 B.E./B.Tech June 29- Shift 1- Chemistry

Question ID:101731

Topic Name:Chemistry-Section A

Question:

Production of iron in blast furnace follows the following equation



when 4.640 kg of Fe_3O_4 and 2.520 kg of CO are allowed to react then the amount of iron (in g) produced is :

[Given : Molar Atomic mass (g mol^{-1}) : Fe = 56

Molar Atomic mass (g mol^{-1}) : O = 16

Molar Atomic mass (g mol^{-1}) : C = 12]

- A 1400
- B 2200
- C 3360
- D 4200

Answer Given By Candidate:C

Question ID:101732

Topic Name:Chemistry-Section A

Question:

Which of the following statements are **correct** ?

- (A) The electronic configuration of Cr is $[\text{Ar}] 3d^5 4s^1$.
- (B) The magnetic quantum number may have a negative value.
- (C) In the ground state of an atom, the orbitals are filled in order of their increasing energies.
- (D) The total number of nodes are given by $n - 2$.

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

- A (A), (C) and (D) only
- B (A) and (B) only
- C (A) and (C) only
- D (A), (B) and (C) only

Answer Given By Candidate:B

Question ID:101733

Topic Name:Chemistry-Section A

Arrange the following in the decreasing order of their covalent character :

- (A) LiCl
- (B) NaCl
- (C) KCl
- (D) CsCl

Question:

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

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

Answer Given By Candidate:C

Question ID:101734

Topic Name:Chemistry-Section A

The solubility of AgCl will be maximum in which of the following ?

Question:

- A 0.01 M KCl
- B 0.01 M HCl
- C 0.01 M AgNO₃
- D Deionised water

Answer Given By Candidate:D

Question ID:101735

Topic Name:Chemistry-Section A

Which of the following is a **correct** statement ?

Question:

- A Brownian motion destabilises sols.
- B Any amount of dispersed phase can be added to emulsion without destabilising it.
- C Mixing two oppositely charged sols in equal amount neutralises charges and stabilises colloids.
- D Presence of equal and similar charges on colloidal particles provides stability to the colloidal solution.

Answer Given By Candidate:C

Question ID:101736

Topic Name:Chemistry-Section A

The electronic configuration of Pt (atomic number 78) is :

Question:

- A [Xe] 4f¹⁴ 5d⁹ 6s¹

- B $[\text{Kr}] 4f^{14} 5d^{10}$
- C $[\text{Xe}] 4f^{14} 5d^{10}$
- D $[\text{Xe}] 4f^{14} 5d^8 6s^2$

Answer Given By Candidate: C

Question ID: 101737

Topic Name: Chemistry-Section A

Question:

In isolation of which one of the following metals from their ores, the use of cyanide salt is not commonly involved ?

- A Zinc
- B Gold
- C Silver
- D Copper

Answer Given By Candidate: A

Question ID: 101738

Topic Name: Chemistry-Section A

Question:

Which one of the following reactions indicates the reducing ability of hydrogen peroxide in basic medium ?

- A $\text{HOCl} + \text{H}_2\text{O}_2 \rightarrow \text{H}_3\text{O}^+ + \text{Cl}^- + \text{O}_2$
- B $\text{PbS} + 4\text{H}_2\text{O}_2 \rightarrow \text{PbSO}_4 + 4\text{H}_2\text{O}$
- C $2\text{MnO}_4^- + 3\text{H}_2\text{O}_2 \rightarrow 2\text{MnO}_2 + 3\text{O}_2 + 2\text{H}_2\text{O} + 2\text{OH}^-$
- D $\text{Mn}^{2+} + \text{H}_2\text{O}_2 \rightarrow \text{Mn}^{4+} + 2\text{OH}^-$

Answer Given By Candidate: C

Question ID: 101739

Topic Name: Chemistry-Section A

Match List - I with List - II.

List - I	List - II
(Metal)	(Emitted light wavelength (nm))
(A) Li	(I) 670.8
(B) Na	(II) 589.2
(C) Rb	(III) 780.0
(D) Cs	(IV) 455.5

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

- A (A)-(I), (B)-(II), (C)-(III), (D)-(IV)

B (A)-(III), (B)-(II), (C)-(I), (D)-(IV)

C (A)-(III), (B)-(I), (C)-(II), (D)-(IV)

D (A)-(IV), (B)-(II), (C)-(I), (D)-(III)

Answer Given By Candidate:A

Question ID:101740

Topic Name:Chemistry-Section A

Match List - I with List - II.

List - I (Metal)	List - II (Application)
(A) Cs	(I) High temperature thermometer
(B) Ga	(II) Water repellent sprays
(C) B	(III) Photoelectric cells
(D) Si	(IV) Bullet proof vest

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

A (A)-(III), (B)-(I), (C)-(IV), (D)-(II)

B (A)-(IV), (B)-(III), (C)-(II), (D)-(I)

C (A)-(II), (B)-(III), (C)-(IV), (D)-(I)

D (A)-(I), (B)-(IV), (C)-(II), (D)-(III)

Answer Given By Candidate:A

Question ID:101741

Topic Name:Chemistry-Section A

Question:

The oxoacid of phosphorus that is easily obtained from a reaction of alkali and white phosphorus and has two P-H bonds, is :

A Phosphonic acid

B Phosphinic acid

C Pyrophosphorus acid

D Hypophosphoric acid

Answer Given By Candidate:D

Question ID:101742

Topic Name:Chemistry-Section A

Question: The acid that is believed to be mainly responsible for the damage of Taj Mahal is

A sulfuric acid.

B hydrofluoric acid.

- C phosphoric acid.
D hydrochloric acid.

Answer Given By Candidate: A

Question ID: 101743

Topic Name: Chemistry-Section A

Question:

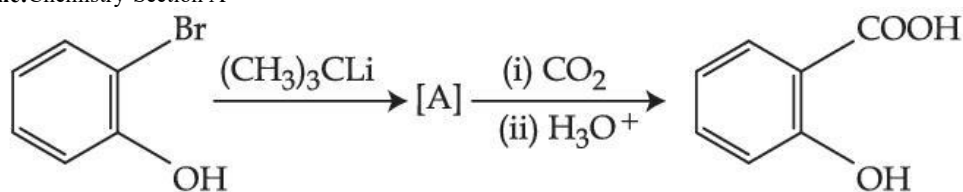
Two isomers 'A' and 'B' with molecular formula C_4H_8 give different products on oxidation with $KMnO_4$ in acidic medium. Isomer 'A' on reaction with $KMnO_4/H^+$ results in effervescence of a gas and gives ketone. The compound 'A' is

- A But-1-ene.
B cis-But-2-ene.
C trans-But-2-ene.
D 2-methyl propene.

Answer Given By Candidate: D

Question ID: 101744

Topic Name: Chemistry-Section A



Question: In the given conversion the compound A is :

- A
- B
- C
- D

Answer Given By Candidate: **D**Question ID: **101745**

Topic Name: Chemistry-Section A

Question:

Given below are two statements :

Statement I : The esterification of carboxylic acid with an alcohol is a nucleophilic acyl substitution.

Statement II : Electron withdrawing groups in the carboxylic acid will increase the rate of esterification reaction.

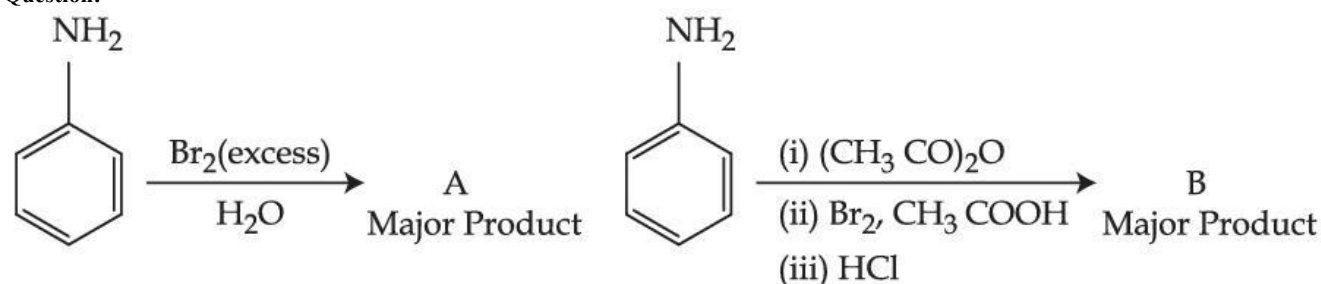
Choose the **most appropriate** option :

- A Both **Statement I** and **Statement II** are correct.
- B Both **Statement I** and **Statement II** are incorrect.
- C **Statement I** is correct but **Statement II** is incorrect.
- D **Statement I** is incorrect but **Statement II** is correct.

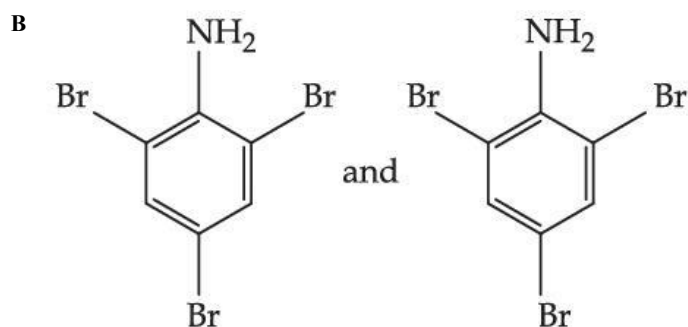
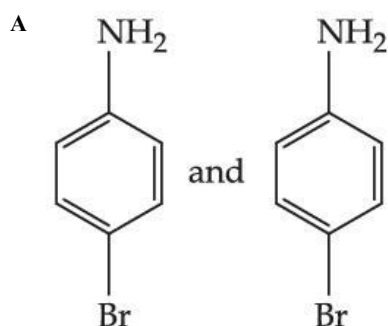
Answer Given By Candidate: **A**Question ID: **101746**

Topic Name: Chemistry-Section A

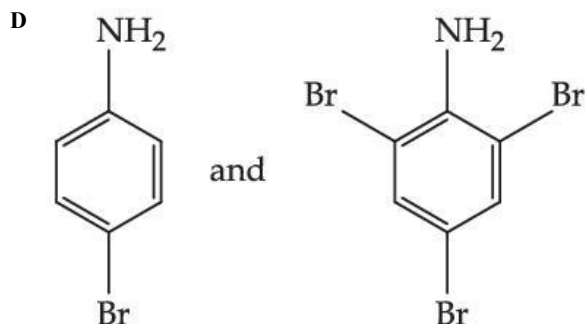
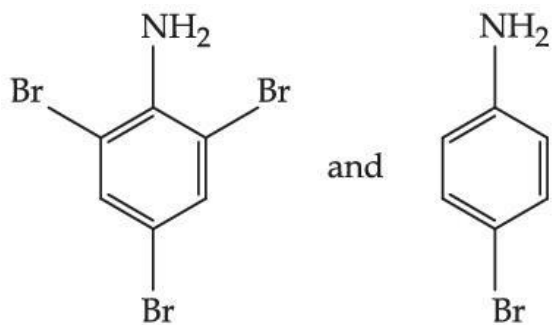
Question:



Consider the above reactions, the product A and product B respectively are



C



Answer Given By Candidate: C

Question ID: 101747

Topic Name: Chemistry-Section A

Question:

The polymer, which can be stretched and retains its original status on releasing the force is

- A Bakelite.
- B Nylon 6,6.
- C Buna-N.
- D Terylene.

Answer Given By Candidate: Not Attempted

Question ID: 101748

Topic Name: Chemistry-Section A

Question: Sugar moiety in DNA and RNA molecules respectively are

- A β -D-2-deoxyribose, β -D-deoxyribose.
- B β -D-2-deoxyribose, β -D-ribose
- C β -D-ribose, β -D-2-deoxyribose.
- D β -D-deoxyribose, β -D-2-deoxyribose.

Answer Given By Candidate: B

Question ID: 101749

Topic Name: Chemistry-Section A

Question: Which of the following compound **does not** contain sulfur atom ?

- A Cimetidine
- B Ranitidine
- C

Histamine

D Saccharin

Answer Given By Candidate: **Not Attempted**

Question ID: **101750**

Topic Name: Chemistry-Section A

Question:

Given below are two statements.

Statement I : Phenols are weakly acidic.

Statement II : Therefore they are freely soluble in NaOH solution and are weaker acids than alcohols and water.

Choose the **most appropriate** option :

- A Both **Statement I** and **Statement II** are correct.
- B Both **Statement I** and **Statement II** are incorrect.
- C **Statement I** is correct but **Statement II** is incorrect.
- D **Statement I** is incorrect but **Statement II** is correct.

Answer Given By Candidate: **B**

Question ID: **101751**

Topic Name: Chemistry-Section B

Question:

Geraniol, a volatile organic compound, is a component of rose oil. The density of the vapour is 0.46 g L^{-1} at 257°C and 100 mm Hg. The molar mass of geraniol is _____ g mol^{-1} . (Nearest Integer)

[Given : $R = 0.082 \text{ L atm K}^{-1} \text{ mol}^{-1}$]

Answer Given By Candidate: **160**

Question ID: **101752**

Topic Name: Chemistry-Section B

Question:

17.0 g of NH_3 completely vapourises at -33.42°C and 1 bar pressure and the enthalpy change in the process is 23.4 kJ mol^{-1} . The enthalpy change for the vapourisation of 85 g of NH_3 under the same conditions is _____ kJ.

Answer Given By Candidate: **117**

Question ID: **101753**

Topic Name: Chemistry-Section B

Question:

1.2 mL of acetic acid is dissolved in water to make 2.0 L of solution. The depression in freezing point observed for this strength of acid is 0.0198°C . The percentage of dissociation of the acid is _____. (Nearest integer)

[Given : Density of acetic acid is 1.02 g mL^{-1}

Molar mass of acetic acid is 60 g mol^{-1}

$K_f(\text{H}_2\text{O}) = 1.85 \text{ K kg mol}^{-1}$]

Answer Given By Candidate: **Not Attempted**

Question ID:101754

Topic Name:Chemistry-Section B

Question:

A dilute solution of sulphuric acid is electrolysed using a current of 0.10 A for 2 hours to produce hydrogen and oxygen gas. The total volume of gases produced at STP is _____ cm^3 . (Nearest integer)

[Given : Faraday constant $F = 96500 \text{ C mol}^{-1}$ at STP, molar volume of an ideal gas is 22.7 L mol^{-1}]

Answer Given By Candidate: **Not Attempted**

Question ID:101755

Topic Name:Chemistry-Section B

Question:

The activation energy of one of the reactions in a biochemical process is $532611 \text{ J mol}^{-1}$. When the temperature falls from 310 K to 300 K, the change in rate constant observed is $k_{300} = x \times 10^{-3} k_{310}$. The value of x is _____.

[Given : $\ln 10 = 2.3$

$R = 8.3 \text{ J K}^{-1} \text{ mol}^{-1}$]

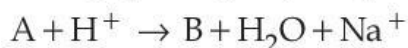
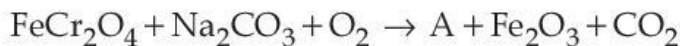
Answer Given By Candidate: **Not Attempted**

Question ID:101756

Topic Name:Chemistry-Section B

Question:

The number of terminal oxygen atoms present in the product B obtained from the following reaction is _____.



Answer Given By Candidate: **Not Attempted**

Question ID:101757

Topic Name:Chemistry-Section B

Question:

An acidified manganate solution undergoes disproportionation reaction. The spin-only magnetic moment value of the product having manganese in higher oxidation state is _____ B.M. (Nearest integer)

Answer Given By Candidate: **0**

Question ID:101758

Topic Name:Chemistry-Section B

Question:

Kjeldahl's method was used for the estimation of nitrogen in an organic compound. The ammonia evolved from 0.55 g of the compound neutralised 12.5 mL of 1 M H_2SO_4 solution. The percentage of nitrogen in the compound is _____. (Nearest integer)

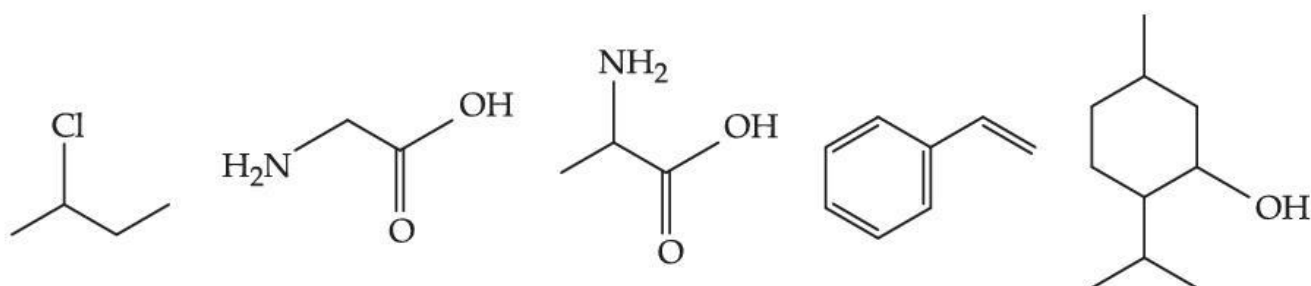
Answer Given By Candidate: **Not Attempted**

Question ID:101759

Topic Name: Chemistry-Section B

Question:

Observe structures of the following compounds



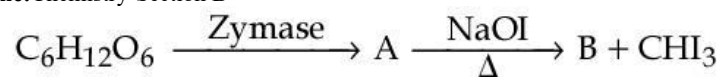
The total number of structures/compounds which possess asymmetric carbon atoms is

_____.

Answer Given By Candidate: 3

Question ID: 101760

Topic Name: Chemistry-Section B



Question: The number of carbon atoms present in the product B is _____.

Answer Given By Candidate: **Not Attempted**