CBSE · CLASS 12 · CHEMISTRY

CBSE Class 12 Chemistry Important Questions 2027

55 question patterns that repeated across past papers · the years show every time each was asked

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Solutions

1. Predict van't Hoff factor / abnormal molar mass for association or dissociation (MCQ)

Asked 3× · Board 2024, Board 2025, Board 2026 · 1 marks

For an electrolyte consisting of a monovalent cation and a monovalent anion undergoing dissociation in water, the van't Hoff factor (i) is :
(A) less than 1
(B) equal to 1
(C) greater than 1
(D) greater than 2

2. Calculate/relate molarity and molality from density

Asked 2× · Board 2026, Sample 2026 · 1/3 marks

Calculate the molarity and molality of a KI solution if the density of 20% (mass/mass) aqueous solution of KI is 1.2 g mL^{-1}.
[Given : Molar mass of KI = 166 g mol^{-1}]

Electrochemistry

3. Relate standard cell EMF, Gibbs energy and equilibrium constant

Asked 4× · Board 2022, Board 2023, Board 2026, Sample 2025 · 3/5 marks

(i) The cell in which the following reaction occurs :
$2Fe^{3+}$ (aq) + 2I^- (aq) -> $2Fe^{2+}$ (aq) + I_2 (s)
has $E^{o}_{(cell)}$ = 0.24 V at 298 K. Calculate $delta_r G^{o}$ and log K_C of the cell reaction.
[Given : 1 F = 96500 C mol^{-1}]
(ii) State the following laws :
(I) Faraday's first law of electrolysis
(II) Kohlrausch's law of independent migration of ions

4. Calculate cell EMF via Nernst equation

Asked 3× · Board 2023, Board 2025, Board 2026 · 5 marks

(i) Write the Nernst equation and calculate the emf of the following cell at 298 K :
Mg (s) | Mg^{2+} (0.001 M) || Cu^{2+} (0.0001 M) | Cu (s)
Given : $E^{o}_{Mg^{2+}/Mg}$ = - 2.36 V, $E^{o}_{Cu^{2+}/Cu}$ = + 0.34 V
[log 10 = 1]
(ii) Define fuel cell and write its two advantages.

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5. Molar conductivity vs concentration behaviour for strong/weak electrolytes (graphical)

Asked 2× · Board 2023, Sample 2026 · 2 marks

[case context: Conductivity of Aqueous Solutions - conductivity meter readings for two solutions A (Red LED bright, Green LED dim) and B (Red LED dim, Green LED off).] Refer to the table given below and draw the molar conductivity vs. concentration curve for solution A and B.

6. Write the Nernst equation for a given cell reaction

Asked 2× · Board 2022, Sample 2026 · 2/3 marks

Write the Nernst equation for the following:
I. Ni (s) + Cu^{2+} (aq) -> Ni^{2+} (aq) + Cu (s)
II. Al (s) + $FeSO_4$ (aq) -> $Al_2(SO_4)_3$ (aq) + Fe (s)
III. Mg (s)/Mg^{2+} (aq)//Ag^+ (aq)/Ag(s)

7. Calculate single-electrode / half-cell potential via Nernst equation

Asked 2× · Board 2024, Board 2025 · 2/5 marks

(a) Write the anode and cathode reactions and the overall cell reaction occurring in a lead storage battery during its use.
(b) Calculate the potential for half-cell containing 0.01 M $K_2Cr_2O_7$(aq), 0.01 M Cr^{3+} (aq) and 1.0 × 10^{-4} M H^+(aq). The half cell reaction is
$Cr_2O_7^{2-}$(aq) + 14H^+(aq) + 6e^- -> $2Cr^{3+}$(aq) + $7H_2O$(l)
and the standard electrode potential is given as E° = 1.33 V.
[Given: log 10 = 1]

8. Calculate conductivity/molar conductivity from resistance measurements

Asked 2× · Board 2023, Board 2024 · 2/3 marks

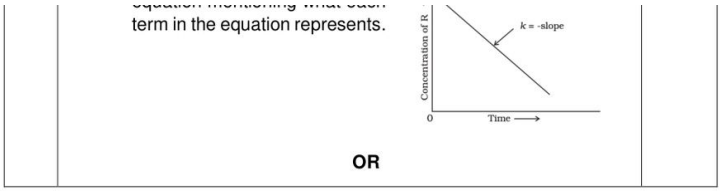
When a certain conductivity cell was filled with 0.05 M KCl solution, it has a resistance of 100 ohm at 25 degC. When the same cell was filled with 0.02 M $AgNO_3$ solution, the resistance was 90 ohm. Calculate the conductivity and molar conductivity of $AgNO_3$ solution. (Given: Conductivity of 0.05 M KCl solution = 1.35 x 10^{-2} ohm^{-1} cm^{-1})

Chemical Kinetics

9. Calculate activation energy from rate change with temperature

Asked 2× · Board 2025, Sample 2026 · 3/5 marks

Attempt either A or B.
A.
I. The rate of a reaction triples when the temperature changes from 298 K to 318 K. Calculate the energy of activation of the reaction assuming that it does not change with temperature. (Given R = 8.314 $JK^{-1}mol^{-1}$, log 3 = 0.4771)
II. Identify the order of reaction and write its integrated rate equation mentioning what each term in the equation represents. (graph of concentration of R vs time, a straight line with k = -slope)



*Please note that the assessment scheme of the Academic Session 2024-25 will continue in the current

10. Define rate of reaction and factors affecting it

Asked 2× · Board 2022, Board 2023 · 1/2 marks

[Case: passage on rate of reaction, rate law, rate constant and order.]
Write two factors that affect the rate of reaction.

d- and f-Block Elements

11. Account for / assign reasons: properties of transition elements

Asked 6× · Board 2022, Board 2023, Board 2024, Board 2025, Sample 2025 · 3/5 marks

The elements of 3d transition series are given as: Sc, Ti, V, Cr, Mn, Fe, Co, Ni, Cu, Zn. Answer the following:
(a) Copper has exceptionally positive $E^\circ_{M^{2+}/M}$ value, why?
(b) Which element is a strong reducing agent in +2 oxidation state and why?
(c) Zn^{2+} salts are colourless. Why?

12. Spin-only magnetic moment / paramagnetic property (unpaired electrons)

Asked 3× · Board 2025, Sample 2025, Sample 2026 · 1/3 marks

Which of the following elements will:
I. exhibit similar magnetic behaviour and why? Magnesium (Atomic No. 12), Chromium (Atomic No. 24), Iron (Atomic No. 26) and Molybdenum (Atomic No. 42).
II. form white salts and why? Zinc (Atomic No. 30), Scandium (Atomic No. 21), Nickel (Atomic No. 28) and Vanadium (Atomic No. 23)

13. Identify lanthanoid/actinoid facts (config, oxidation state, inner transition)

Asked 2× · Sample 2025, Sample 2026 · 1 marks

The name inner transition metals is often used to refer to the
A. lanthanoids
B. actinoids
C. both lanthanoids and actinoids
D. d block elements

14. Properties of KMnO4/K2Cr2O7 (oxidation product, titration medium, enthalpy)

Asked 2× · Board 2025, Sample 2026 · 1/3 marks

Answer the following questions:
I. Are the enthalpies of atomisation of Zinc and Copper matched correctly? Justify your answer. (Enthalpy of atomisation / $kJmol^{-1}$: Zinc 339, Copper 130)
II. Out of sulphuric acid and hydrochloric acid, which acid will you prefer for permanganate titrations and why?
III. $5NO_2^- + 2MnO_4^- + 6H^+$ -> (complete the equation)

15. Lanthanoid contraction & its consequences

Asked 2× · Board 2024, Board 2026 · 1/5 marks

(i) What is lanthanoid contraction ? What are the consequences (any two) of lanthanoid contraction ?
(ii) (I) Why does $E^o_{Cu^{2+}/Cu}$ have positive value (+ 0.34 V) ?
(II) Why do actinoids show a wide range of oxidation states ?

16. Complete/balance MnO4- / $Cr_2O_7^{2-}$ redox equations

Asked 2× · Board 2023, Board 2025 · 2 marks

Complete and balance the following chemical equations:
(a) $2MnO_4^-(aq) + 10I^-(aq) + 16H^+(aq)$ ->
(b) $Cr_2O_7^{2-}(aq) + 6Fe^{2+}(aq) + 14H^+(aq)$ ->

Coordination Compounds

17. Write IUPAC name and/or formula of coordination compounds

Asked 5× · Board 2023, Board 2024, Board 2025, Sample 2025, Sample 2026 · 1/2/3 marks

Write the formula of the following coordination complex:
I. diaquasilver(I) dichloridoargentate(I)
II. dihydroxidobis(triphenylphosphine)nickel(II)

18. State hybridisation & magnetic behaviour of given complex(es) (VBT)

Asked 4× · Board 2022, Board 2025, Board 2026, Sample 2025 · 3/5 marks

(i) Write the hybridisation and magnetic behaviour of the following complexes :
(I) $[Ni(CN)_4]^{2-}$
(II) $[FeF_6]^{3-}$
(ii) What type of isomerism is shown by $[Co(NH_3)_5(NO_2)]^{2+}$ and $[Co(NH_3)_5(ONO)]^{2+}$?
[Given : Atomic number : Ni = 28, Fe = 26]

19. Explain inner vs outer orbital / paramagnetic vs diamagnetic nature

Asked 3× · Board 2024, Sample 2025 · 1/2 marks

Assertion (A): $[Mn(CN)_6]^{3-}$ has a magnetic moment of two unpaired electrons while $[MnCl_6]^{3-}$ has a paramagnetic moment of four unpaired electrons.
Reason (R): $[Mn(CN)_6]^{3-}$ is inner orbital complexes involving d^2sp^3 hybridisation, on the other hand, $[MnCl_6]^{3-}$ is outer orbital complexes involving sp^3d^2 hybridisation.
Select the most appropriate answer from the options given below:
a. Both A and R are true and R is the correct explanation of A
b. Both A and R are true but R is not the correct explanation of A.
c. A is true but R is false.
d. A is false but R is true.

20. Define ligand/complex terminology (ambidentate, denticity, CFSE)

Asked 2× · Board 2026, Sample 2026 · 2 marks

Define the following terms :
(a) Ambidentate ligand
(b) Crystal field splitting energy

21. Deduce formula/structure from ionisation, precipitation or conductivity behaviour

Asked 3× · Board 2022, Board 2023, Sample 2025 · 1/3 marks

Formulation of Cobalt(III) Chloride-Ammonia Complexes:
Colour / Formula / Solution conductivity corresponds to
Yellow / $[Co(NH_3)_6]^{3+}$ 3Cl^- / Y
Purple / $[CoCl(NH_3)_5]^{2+}$ 2Cl^- / 1:2 electrolyte
Green / X / 1:1 electrolyte
'X' and 'Y' in the above table are:
a. X=$[Co(NH_3)_6]^{2+}$ 3Cl^-, Y= 1:3
b. X= $[Co(NH_3)_4Cl_2]$^+ Cl^-, Y= 1:3
c. X=$[Co(NH_3)_4Cl_2]$^+ Cl^-, Y= 1:1
d. X=$[Co(NH_3)_4Cl_2]^{3+}$ 3Cl^-, Y= 1:1

Colour	Formula	Solution conductivity corresponds to
Yellow	$[Co(NH_3)_6]^{3+}3Cl^-$	Y
Purple	$[CoCl(NH_3)_5]^{2+}2Cl^-$	1:2 electrolyte
Green	X	1:1 electrolyte

'X' and 'Y' in the above table are:

22. Identify a structural feature: counter ion / homoleptic complex

Asked 2× · Board 2025, Sample 2026 · 1 marks

The counter ion in the coordination compound $[Co(NH_3)_5(NO_2)]Cl_2$ is
A. Ammine
B. Cobalt
C. Chloride
D. Nitro

23. Multi-part reasoning: low-spin tetrahedral, stability, isomerism, colour

Asked 2× · Board 2025, Board 2026 · 3/5 marks

Give reasons :
(i) Why are low spin tetrahedral complexes not formed ?
(ii) Why is $[Co(en)_3]^{3+}$ complex more stable than $[Co(NH_3)_6]^{3+}$?
(iii) Why are geometrical isomers not possible for tetrahedral complexes having two different types of unidentate ligands coordinated to the central metal ion ?

24. Secondary valency (coordination number) of a complex

Asked 2× · Board 2023, Board 2026 · 1 marks

The secondary valency of Co in $[Co(en)_3]_2(SO_4)_3$ is :
(A) 12
(B) 2
(C) 3
(D) 6

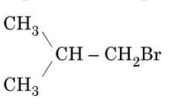
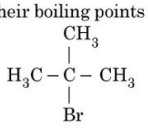
Haloalkanes and Haloarenes

25. Boiling point trends of haloalkanes

Asked 3× · Board 2025, Sample 2025 · 1 marks

Arrange the following compounds in increasing order of their boiling points:
(i) $(CH_3)_2CH\text{-}CH_2Br$ (ii) $CH_3CH_2CH_2CH_2Br$ (iii) $(CH_3)_3C\text{-}Br$
The correct order is
(A) (ii) < (i) < (iii)
(B) (i) < (ii) < (iii)
(C) (iii) < (i) < (ii)
(D) (iii) < (ii) < (i)

6. Arrange the following compounds in increasing order of their boiling points :

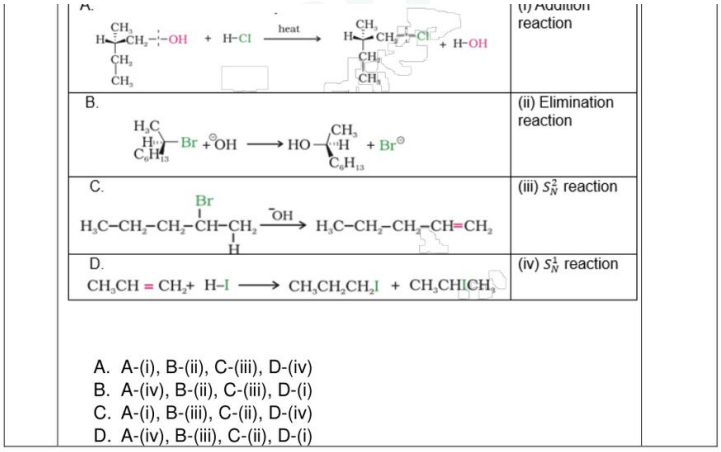
(i)  (ii) $CH_3CH_2CH_2CH_2Br$ (iii) 

The correct order is

26. Compare/classify SN1 vs SN2

Asked 2× · Board 2026, Sample 2026 · 1/3 marks

Match the column I and column II:
Column I (reactions of organic halides/alcohols shown as structures) with Column II: (i) Addition reaction, (ii) Elimination reaction, (iii) S_N2 reaction, (iv) S_N1 reaction.
A. A-(i), B-(ii), C-(iii), D-(iv)
B. A-(iv), B-(ii), C-(iii), D-(i)
C. A-(i), B-(iii), C-(ii), D-(iv)
D. A-(iv), B-(iii), C-(ii), D-(i)

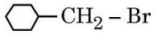


*Please note that the assessment scheme of the Academic Session 2024-25 will continue in the current

27. SN1 reactivity (tertiary fastest) + mechanism

Asked 2× · Board 2024, Sample 2025 · 1/3 marks

The compound which undergoes S_N1 reaction most rapidly is: (A) (cyclohexyl)-Br (B) (cyclohexyl)-CH_2-Br (C) (cyclohex-2-enyl)-Br (D) (phenyl)-Br

6. वह यौगिक जो S_N1 अभिक्रिया अत्यधिक शीघ्रता से करता है, वह है :
(A) 
(B) 
(C) 
(D) 

7. ऐसीटिक अम्ल PCl_5 के साथ अभिक्रिया करके देता है :

28. Write products of halide substitution/elimination reactions

Asked 2× · Board 2023, Sample 2025 · 2/3 marks

Complete the following reactions by writing the major and minor product in each case (any 2)
a. $CH_3CH_2Br + KCN \rightarrow$
b. $CH_3CH_2CH = CH_2 + HBr \rightarrow$
c. $(CH_3)_2CHCHClCH_3$ + alc KOH ->

29. Reactions/conversions of chlorobenzene & haloalkanes

Asked 2× · Board 2025, Board 2026 · 2/3 marks

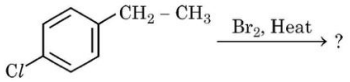
What happens when :
(a) n-butyl chloride is treated with alcoholic KOH ?
(b) Chlorobenzene is treated with CH_3Cl in the presence of anhydrous $AlCl_3$?

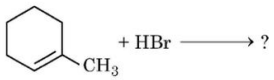
30. Draw major monohalo product

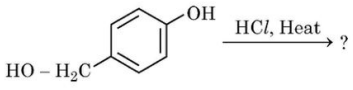
Asked 2× · Board 2024, Board 2025 · 2/3 marks

Draw the structure of the major monohalo product for each of the following reaction:
(a) 4-chloro (ethyl)benzene + Br_2, Heat -> ?
(b) 1-methylcyclohex-1-ene + HBr -> ?
(c) 4-(hydroxymethyl)phenol + HCl, Heat -> ?

26. (A) Draw the structure of the major monohalo product for each of the following reaction : **(1 + 1 + 1 = 3)**

(a) 

(b) 

(c) 

Alcohols, Phenols and Ethers

31. Compare acidity of alcohols vs phenols

Asked 4× · Board 2023, Board 2025, Board 2026 · 1/2 marks

Assertion (A) : p-nitrophenol is less acidic than phenol.
Reason (R) : Nitro group is an electron-withdrawing group, which stabilises the phenoxide ion.

32. Boiling point trends & hydrogen bonding

Asked 2× · Board 2025, Board 2026 · 1 marks

[Case context: passage on boiling points of alcohols and phenols increasing with number of carbon atoms and intermolecular hydrogen bonding.]
Arrange the following compounds in order of their increasing boiling points :
Propan-1-ol, Ethanol, Butan-2-ol, Butan-1-ol

33. Case study: phenol EAS + Reimer-Tiemann/Kolbe products

Asked 2× · Board 2025, Board 2026 · 2/4 marks

[Case context: The boiling points of alcohols and phenols increase with increase in the number of carbon atoms due to increase in van der Waals forces. The -OH group in alcohols and phenols is involved in intermolecular hydrogen bonding, due to which their boiling points are higher than those of ethers, haloalkanes and haloarenes of comparable molecular masses. Alcohols and phenols are acidic in nature. Electron-withdrawing groups in phenol increase its acidic strength, while electron-releasing groups decrease it. The presence of -OH group in phenols activates the aromatic ring towards electrophilic substitution and directs the incoming group to the ortho and para positions due to resonance effect. The Reimer-Tiemann reaction of phenol yields salicylaldehyde, whereas Kolbe's reaction of phenol yields salicylic acid. Aspirin is formed by the acetylation of salicylic acid.]
(i) Write the name of the major product(s) formed in :
(I) Reimer-Tiemann reaction
(II) Kolbe's reaction
(ii) Name the method by which aspirin is formed from salicylic acid.

34. Oxidation of alcohols with CrO3 to carbonyl

Asked 2× · Board 2024, Board 2026 · 1 marks

Propan-2-ol on oxidation with CrO_3 gives :
(A) Propanal
(B) Propanoic acid
(C) Propene
(D) Propanone

35. Mechanism of acid dehydration of ethanol to ethene

Asked 2× · Board 2023, Board 2024 · 2/3 marks

(a) Write the mechanism of the following reaction: CH_3CH_2OH --H^+, 443 K--> $CH_2=CH_2$. (b) Write the main product in each of the following reactions: (i) CH_3-CH_2-$CH=CH_2$ --a) B_2H_6 b) $3H_2O_2/OH^-$ --> (ii) phenol (C_6H_5OH) --a) aq. NaOH b) CO_2, H^+ -->

Aldehydes, Ketones and Carboxylic Acids

36. Compare acidic strength/pKa of carboxylic acids

Asked 2× · Board 2024, Sample 2026 · 1/3 marks

Arrange the products obtained in the following cases in the increasing order of their pKa values:
A. Oxidation of ethanol in presence of acidified potassium dichromate
B. Reaction of propanoic acid with Br_2 in the presence of red Phosphorus
C. Reaction of isopropyl magnesium bromide with carbon dioxide, followed by hydrolysis.
D. Reaction of propanoic acid with Cl_2 in the presence of red Phosphorous.

37. Carbonyl qualitative-test recognition

Asked 2× · Board 2022, Sample 2026 · 1 marks

Which of the following will give a yellow or orange ppt. with 2,4 DNP?
(i) Porpanal (ii) Propanone (iii) Propanoic acid
A. (i) and (ii)
B. (ii) and (iii)
C. (i) and (iii)
D. (i), (ii) and (iii)

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38. Nucleophilic addition product identification (MCQ)

Asked 2× · Board 2024, Sample 2025 · 1 marks

Which of the following compound gives an oxime with hydroxylamine:
a. CH_3COCH_3
b. CH_3COOH
c. $(CH_3CO)_2O$
d. CH_3COCl

39. Aldol/Claisen-Schmidt based structure elucidation

Asked 2× · Board 2024, Sample 2025 · 3 marks

OR
An organic compound 'X', does not undergo aldol condensation. However 'X' with compound 'Y' in the presence of a strong base react to give the compound 1,3-diphenylprop-2-en-1-one.
a. Identify 'X' and 'Y'
b. Write the chemical reaction involved.
c. Give one chemical test to distinguish between X and Y.

40. Carry out conversions (aldol/HVZ/reduction/decarboxylation)

Asked 2× · Board 2023, Board 2026 · 3/5 marks

How do you convert the following ?
(a) Propanone to Propan-2-ol
(b) Ethanal to Ethane
(c) Sodium benzoate to Benzene

41. Mixed 5-mark LA: distinguishing tests + named-reaction products

Asked 2× · Board 2023, Board 2026 · 5 marks

(i) Write the names of the product(s) formed when :
(I) Benzoyl chloride undergoes Rosenmund reduction.
(II) Ethanal is treated with CH_3MgBr, followed by hydrolysis.
(III) Benzaldehyde undergoes Cannizzaro's reaction.
(ii) Write a simple chemical test to distinguish between :
(I) Propanal and Propanone
(II) Phenol and Benzoic acid

42. Relative reactivity toward nucleophilic addition

Asked 2× · Board 2022, Board 2025 · 1/2 marks

Would you expect benzaldehyde to be more reactive or less reactive in nucleophilic addition reactions than propanal? Justify your answer.

43. Cannizzaro reaction of benzaldehyde

Asked 2× · Board 2022, Board 2024 · 2 marks

Write the chemical equation when: (a) Butan-2-one is treated with Zn(Hg) and conc. HCl. (b) Two molecules of benzaldehyde are treated with conc. NaOH.

44. Identify unknown carbonyl from qualitative tests

Asked 2× · Board 2022, Board 2023 · 3 marks

An organic compound 'A', having the molecular formula C_3H_8O on treatment with Cu at 573 K, gives 'B'. 'B' does not reduce Fehling's solution but gives a yellow precipitate of the compound 'C' with I_2/NaOH. Deduce the structures of A, B and C.

Amines

45. Hinsberg test / benzenesulphonyl chloride distinction

Asked 3× · Board 2024, Sample 2025, Sample 2026 · 1 marks

The organic compounds A, B and C are amines having equivalent molecular weight. A and B on reaction with benzene sulphonyl chloride give white precipitate, however white precipitate obtained from compound B remains insoluble in NaOH.
The variation in the boiling point of A, B and C can be seen as :
A. A> B>C
B. B>A>C
C. A=B > C
D. C>B>A

46. Amide to amine (Hoffmann bromamide / reduction)

Asked 4× · Board 2023, Board 2024, Board 2025, Board 2026 · 1 marks

Acetamide reacts with Br_2 and aqueous KOH to form :
(A) Ethanamine
(B) Ammonia
(C) Methanamine
(D) Ethanenitrile

47. Arrange/compare basic strength of amines

Asked 3× · Board 2022, Board 2023, Board 2024 · 1/2 marks

Assertion (A): Aniline is a stronger base than ammonia. Reason (R): The unshared electron pair on nitrogen atom in aniline becomes less available for protonation due to resonance. Select the correct answer: (A) Both A and R are true and R is the correct explanation of A. (B) Both A and R are true, but R is not the correct explanation of A. (C) A is true, but R is false. (D) A is false, but R is true.

48. Illustrate Gabriel/carbylamine/Hoffmann reactions

Asked 3× · Board 2022, Board 2023, Board 2024 · 1/2/3 marks

Answer any five of the following (32a-32g), 1 mark each. Write the chemical reaction involved in Gabriel phthalimide synthesis.

49. Diazonium salt reactions/sequences

Asked 2× · Board 2024, Board 2025 · 1/2 marks

Identify A and B in each of the following reaction sequence:
(a) CH_3CH_2Cl -NaCN-> A -H_2/Ni-> B
(b) $C_6H_5NH_2$ -$NaNO_2$/HCl, 0-5 °C-> A -$C_6H_5NH_2$/H^+-> B

50. Why aniline does not undergo Friedel-Crafts

Asked 2× · Board 2023, Board 2024 · 1 marks

Answer any five of the following (32a-32g), 1 mark each. Aniline does not undergo Friedel-Crafts reaction. Why?

Biomolecules

51. Structure & properties of glucose/fructose

Asked 5× · Board 2024, Board 2025, Board 2026, Sample 2025, Sample 2026 · 1 marks

In the ring structure of fructose, the anomeric carbon is :
(A) C2
(B) C3
(C) C4
(D) C1

52. Starch/cellulose structure & disaccharide hydrolysis

Asked 5× · Board 2023, Board 2026, Sample 2025, Sample 2026 · 1/2/3 marks

[Case context: Carbohydrates are optically active polyhydroxy aldehydes or ketones or molecules that provide such units on hydrolysis. They are broadly classified into three groups : monosaccharides, oligosaccharides and polysaccharides. Monosaccharide units are held together by glycosidic linkages to form disaccharides or polysaccharides. Starch and cellulose are polysaccharides. Starch is a polymer of alpha-glucose and consists of two components : Amylose and Amylopectin. Amylose is water soluble, having 15-20% of starch, whereas Amylopectin is insoluble in water, having 80-85% starch. Chemically, amylose is a long unbranched chain of alpha-glucose units held together by C1-C4 glycosidic linkage. Amylopectin is a branched chain of alpha-glucose units held together by C1-C4 and C1-C6 glycosidic linkages.]
Write two differences between Amylose and Amylopectin.

53. Mixed biomolecule recall (proteins/carbs/vitamins)

Asked 4× · Board 2024, Board 2025, Sample 2026 · 3/5 marks

Attempt either A or B.
A. Answer the following questions:
I. Identify and give any one point of difference between the protein present in the hair and protein present in egg albumin.
II. Both glucose and sucrose have aldehydic group, then why does only glucose reduces Fehling's Reagent and not sucrose?
III. Why do amino acids behave as salts?
IV. What chemical change takes place during curdling of milk?
V. Doctor advised a 50 year old woman enough exposure to sunlight and addition of fish and egg yolk to her diet. What is the possible disease diagnosed by the doctor?

54. Reactions of glucose with reagents

Asked 4× · Board 2023, Board 2024, Board 2025, Sample 2025 · 2 marks

Write the reactions involved when D-glucose is treated with the following reagents:
(a) HCN
(b) Br_2 water

55. Amino acid properties (optical activity, amphoteric, essential)

Asked 2× · Board 2025, Board 2026 · 1/2 marks

What are essential amino acids ? How do you explain the amphoteric behaviour of amino acids ?