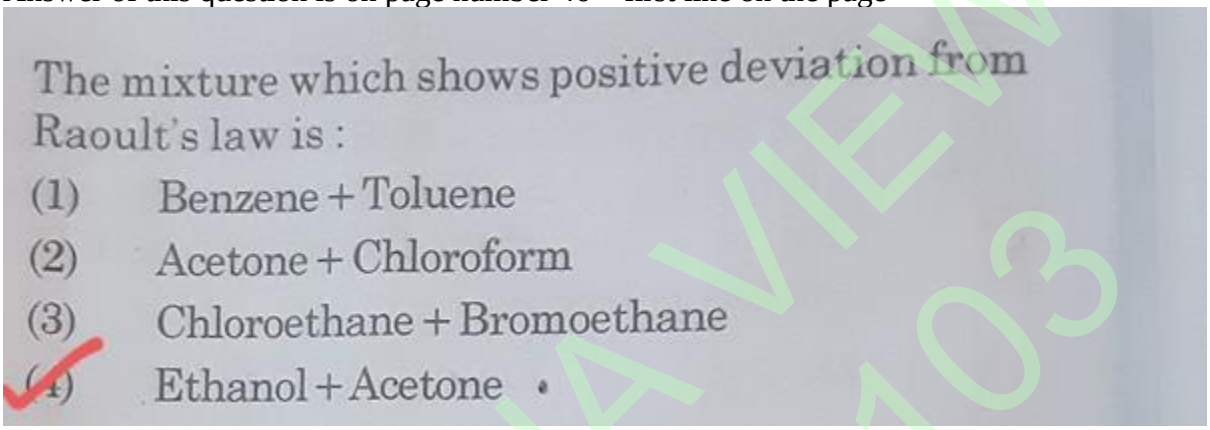
NEET CHEMISTRY BY THE NCERT

QUESTIONS WITH SOLUTIONS

How many questions are asked in the NEET chemistry by the NCERT?

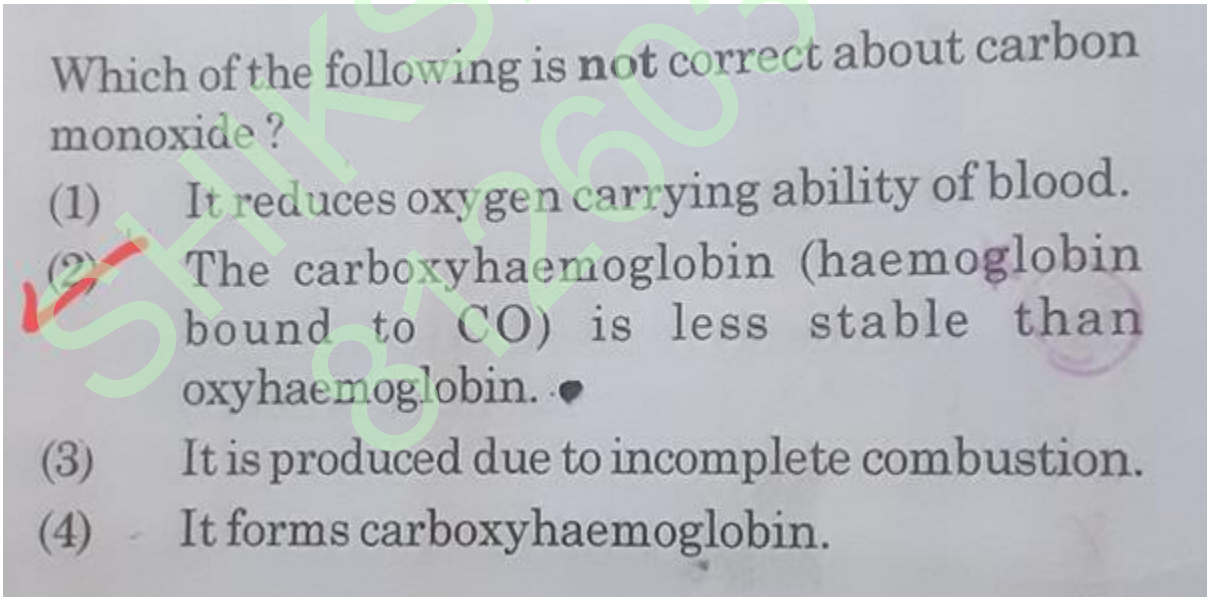
1
Answer of this question is on page number 46 ~ first line on the page



The mixture which shows positive deviation from Raoult's law is :

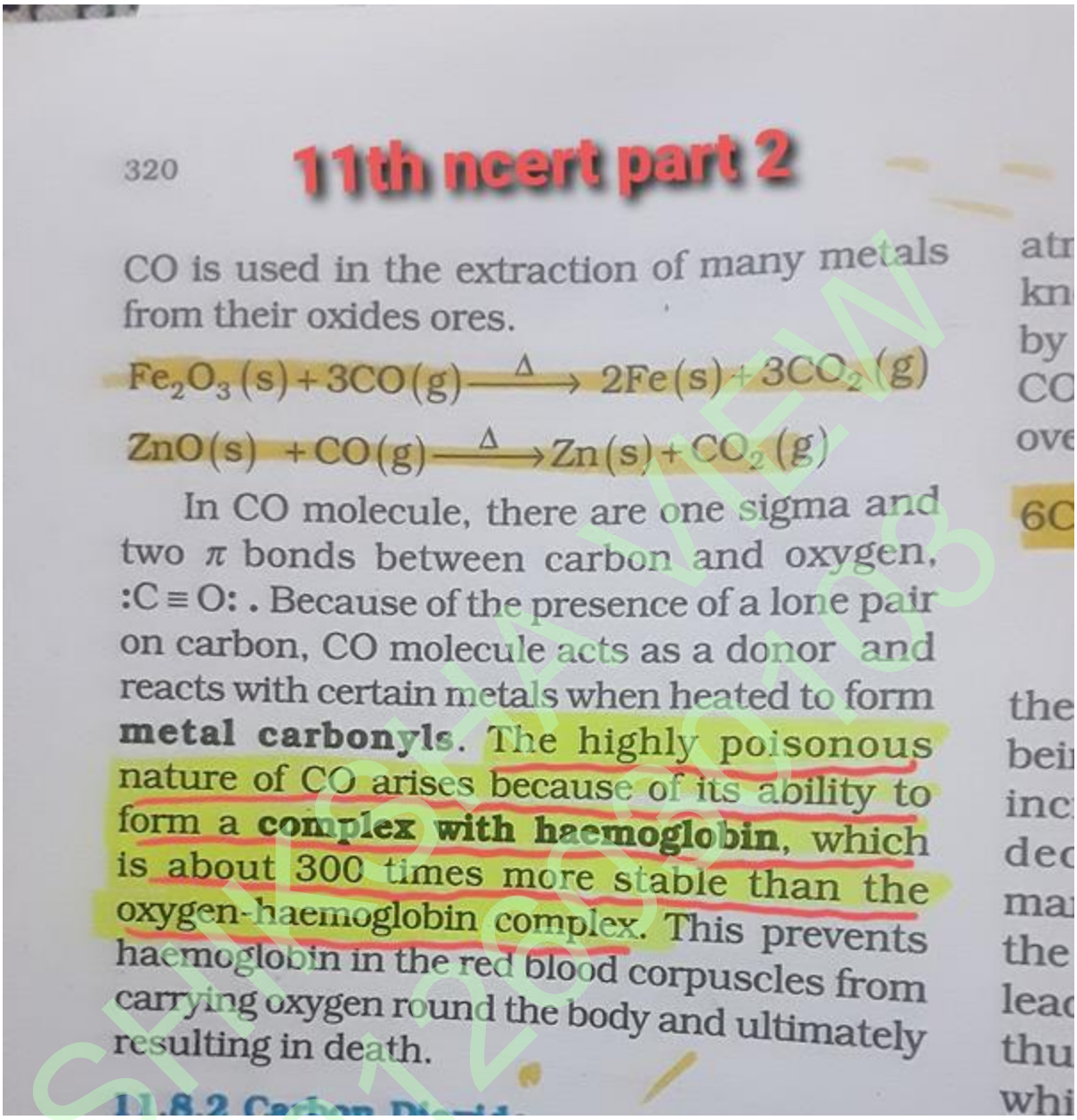
(1) Benzene + Toluene
(2) Acetone + Chloroform
(3) Chloroethane + Bromoethane
(4) Ethanol + Acetone

2



Which of the following is **not** correct about carbon monoxide ?

(1) It reduces oxygen carrying ability of blood.
(2) The carboxyhaemoglobin (haemoglobin bound to CO) is less stable than oxyhaemoglobin.
(3) It is produced due to incomplete combustion.
(4) It forms carboxyhaemoglobin.



11th ncert part 2

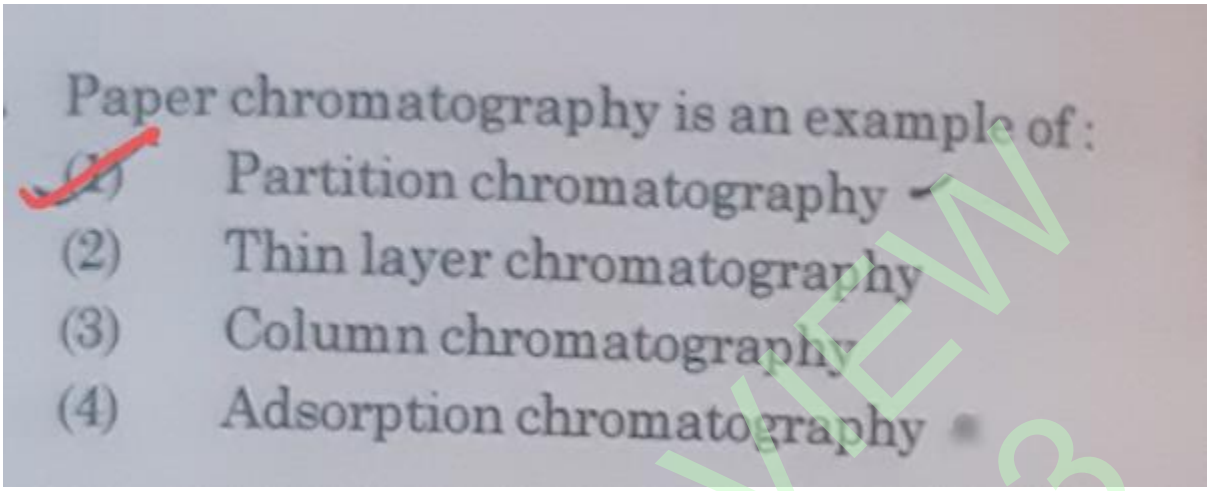
CO is used in the extraction of many metals from their oxides ores.

$$Fe_2O_3(s) + 3CO(g) \xrightarrow{\Delta} 2Fe(s) + 3CO_2(g)$$

$$ZnO(s) + CO(g) \xrightarrow{\Delta} Zn(s) + CO_2(g)$$

In CO molecule, there are one sigma and two π bonds between carbon and oxygen, $:C \equiv O:$. Because of the presence of a lone pair on carbon, CO molecule acts as a donor and reacts with certain metals when heated to form **metal carbonyls**. The highly poisonous nature of CO arises because of its ability to form a **complex with haemoglobin**, which is about 300 times more stable than the oxygen-haemoglobin complex. This prevents haemoglobin in the red blood corpuscles from carrying oxygen round the body and ultimately resulting in death.

3



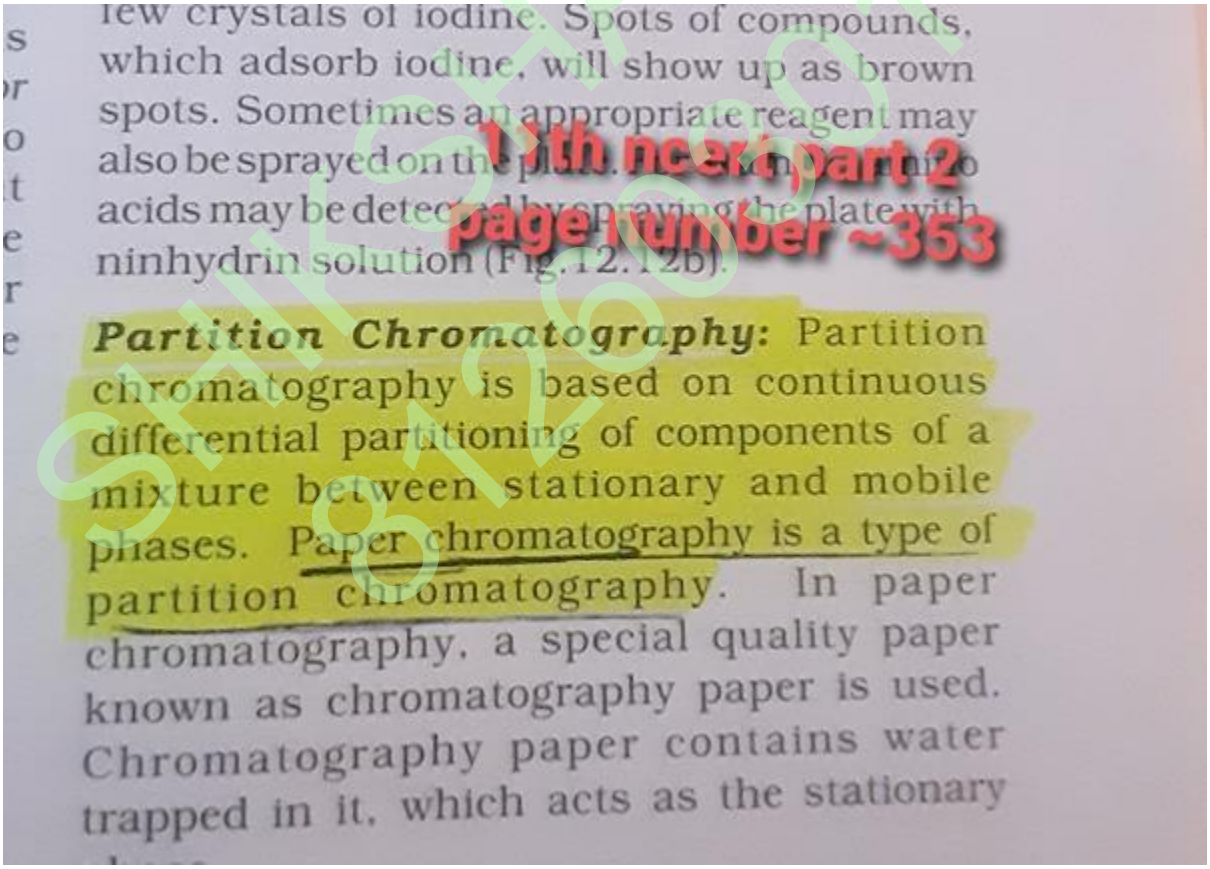
Paper chromatography is an example of :

(1) Partition chromatography

(2) Thin layer chromatography

(3) Column chromatography

(4) Adsorption chromatography



few crystals of iodine. Spots of compounds, which adsorb iodine, will show up as brown spots. Sometimes an appropriate reagent may also be sprayed on the plate. For example, amino acids may be detected by spraying the plate with ninhydrin solution (Fig. 12.12b).

Partition Chromatography: Partition chromatography is based on continuous differential partitioning of components of a mixture between stationary and mobile phases. Paper chromatography is a type of partition chromatography. In paper chromatography, a special quality paper known as chromatography paper is used. Chromatography paper contains water trapped in it, which acts as the stationary

4

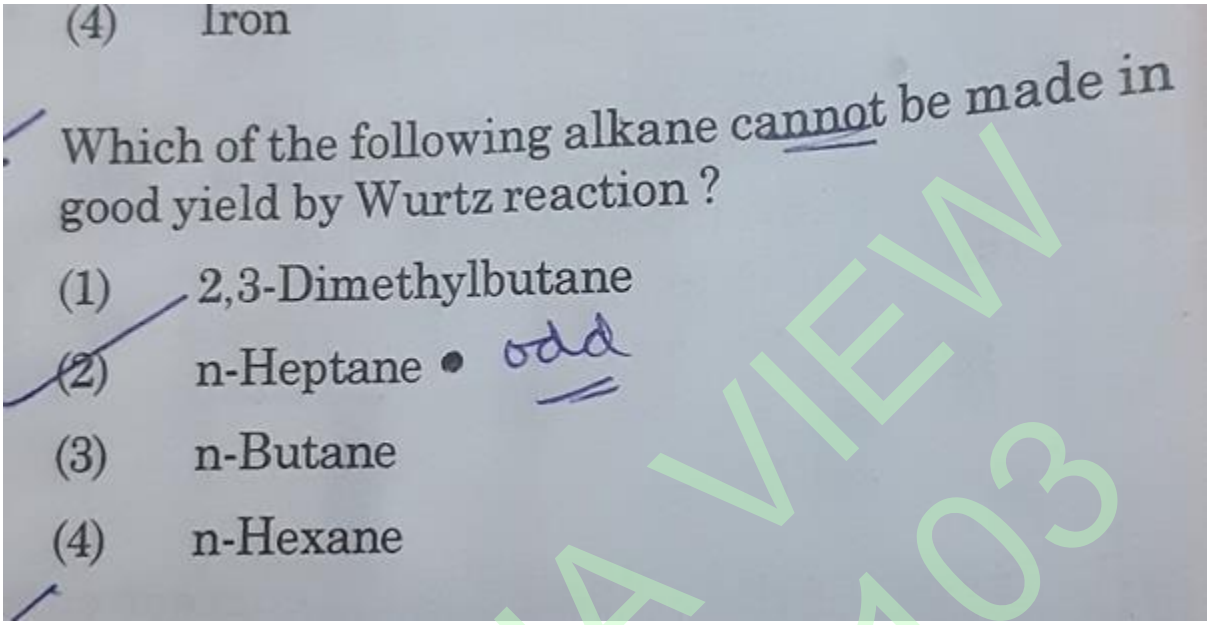
HCl was passed through a solution of $CaCl_2$, $MgCl_2$ and NaCl. Which of the following compound(s) crystallise(s) ?

(1) Only NaCl
(2) Only $MgCl_2$
(3) NaCl, $MgCl_2$ and $CaCl_2$
(4) Both $MgCl_2$ and $CaCl_2$

of brine solution, contains sodium sulphate, calcium sulphate, calcium chloride and magnesium chloride as impurities. Calcium chloride, $CaCl_2$, and magnesium chloride, $MgCl_2$ are impurities because they are deliquescent (absorb moisture easily from the atmosphere). To obtain pure sodium chloride, the crude salt is dissolved in minimum amount of water and filtered to remove insoluble impurities. The solution is then saturated with hydrogen chloride gas. Crystals of pure sodium chloride separate out. Calcium and magnesium chloride, being more soluble than sodium chloride, remain in solution.

Sodium chloride melts at 1081K. It has a solubility of 36.0 g in 100 g of water at 273 K.

5



(4) Iron

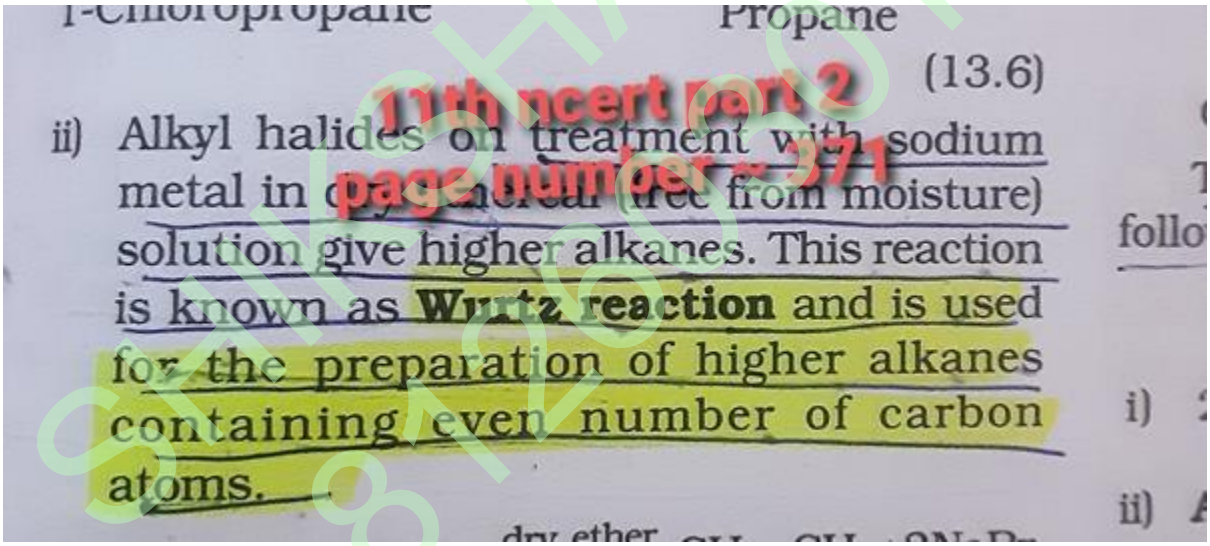
Which of the following alkane cannot be made in good yield by Wurtz reaction ?

(1) 2,3-Dimethylbutane

(2) n-Heptane • odd

(3) n-Butane

(4) n-Hexane



1-Chloropropane Propane

(13.6)

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ii) Alkyl halides on treatment with sodium metal in dry ethereal (free from moisture) solution give higher alkanes. This reaction is known as **Wurtz reaction** and is used for the preparation of higher alkanes containing even number of carbon atoms.

dry ether

follo

i)

ii)

6

The number of Faradays(F) required to produce 20 g of calcium from molten $CaCl_2$ (Atomic mass of Ca = 40 g mol^{-1}) is :

(1) 2

(2) 3

(3) 4

(4) 1

How much charge is required for the following reductions:

(i) 1 mol of Al^{3+} to Al?

(ii) 1 mol of Cu^{2+} to Cu?

(iii) 1 mol of MnO_4^- to Mn^{2+}?

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page number- 92

3.13 How much electricity in terms of Faraday is required to produce

(i) 20.0 g of Ca from molten $CaCl_2$?

(ii) 40.0 g of Al from molten Al_2O_3?

3.14 How much electricity is required in coulomb for the oxidation of

(i) 1 mol of H_2O to O_2?

(ii) 1 mol of FeO to

7

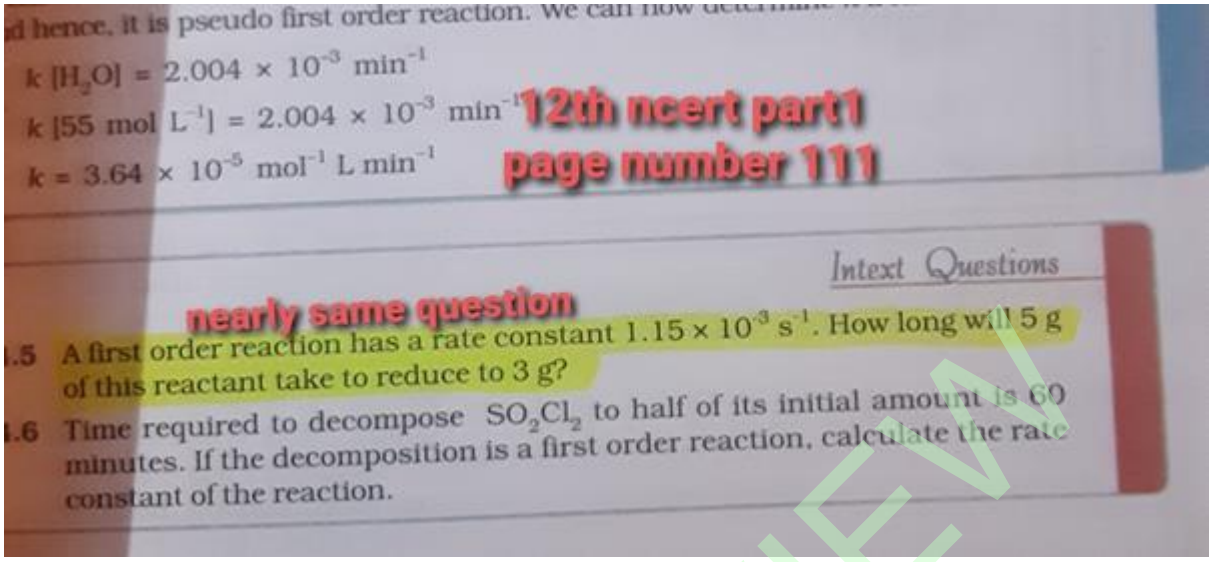
The rate constant for a first order reaction is $4.606 \times 10^{-3}\ s^{-1}$. The time required to reduce 2.0 g of the reactant to 0.2 g is :

(1) 200 s

(2) 500 s

(3) 1000 s

(4) 100 s



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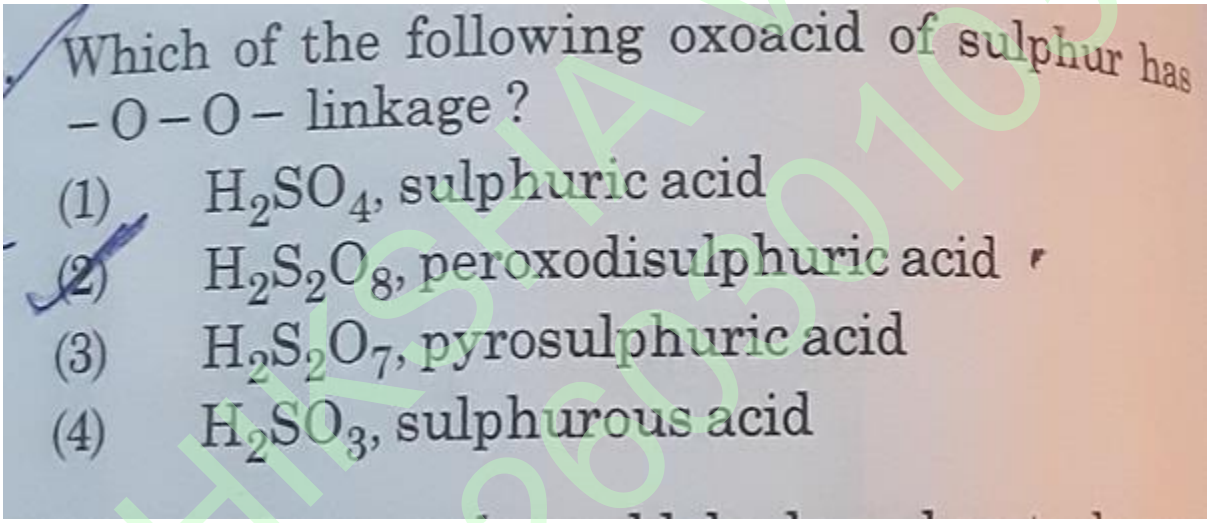

Answer of this question is on page number 189 . 12th ncert part 1 ,,,, figure 7.6
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An element has a body centered cubic (bcc) structure with a cell edge of 288 pm. The atomic radius is :

(1) $\frac{\sqrt{2}}{4} \times 288$ pm

(2) $\frac{4}{\sqrt{3}} \times 288$ pm

(3) $\frac{4}{\sqrt{2}} \times 288$ pm

(4) $\frac{\sqrt{3}}{4} \times 288$ pm

1.2 Efficiency of Packing in Body-Centred Cubic Structures

From Fig. 1.21, it is clear that the atom at the centre will be in touch with the other two atoms diagonally arranged.

In Δ EFD,

$b^2 = a^2 + a^2 = 2a^2$

$b = \sqrt{2}a$

Now in Δ AFD

$c^2 = a^2 + b^2 = a^2 + 2a^2 = 3a^2$

$c = \sqrt{3}a$

The length of the body diagonal c is equal to 4r, where r is the radius of the sphere (atom), as all the three spheres along the diagonal touch each other.

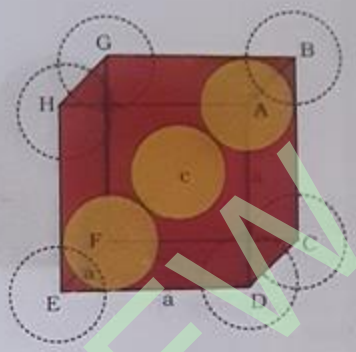


Fig. 1.21: Body-centred cubic unit cell (sphere along the body diagonal are shown with solid boundaries).

Therefore, $\sqrt{3}a = 4r$

$$a = \frac{4r}{\sqrt{3}}$$

Also we can write, $r = \frac{\sqrt{3}}{4}a$

In this type of structure, total number of atoms is 2 and their volume is $2 \times \left(\frac{4}{3}\right)\pi r^3$.

Volume of the cube, a^3 will be equal to $\left(\frac{4}{\sqrt{3}}r\right)^3$ or $a^3 = \left(\frac{4}{\sqrt{3}}r\right)^3$.

Therefore,

$$\text{Packing efficiency} = \frac{\text{Volume occupied by two spheres in the unit cell} \times 100}{\text{Total volume of the unit cell}}\%$$

$$= \frac{2 \times (4/3)\pi r^3 \times 100}{\left[(4/\sqrt{3})r\right]^3}\%$$

$$= \frac{(8/3)\pi r^3 \times 100}{64/(3\sqrt{3})r^3}\% = 68\%$$

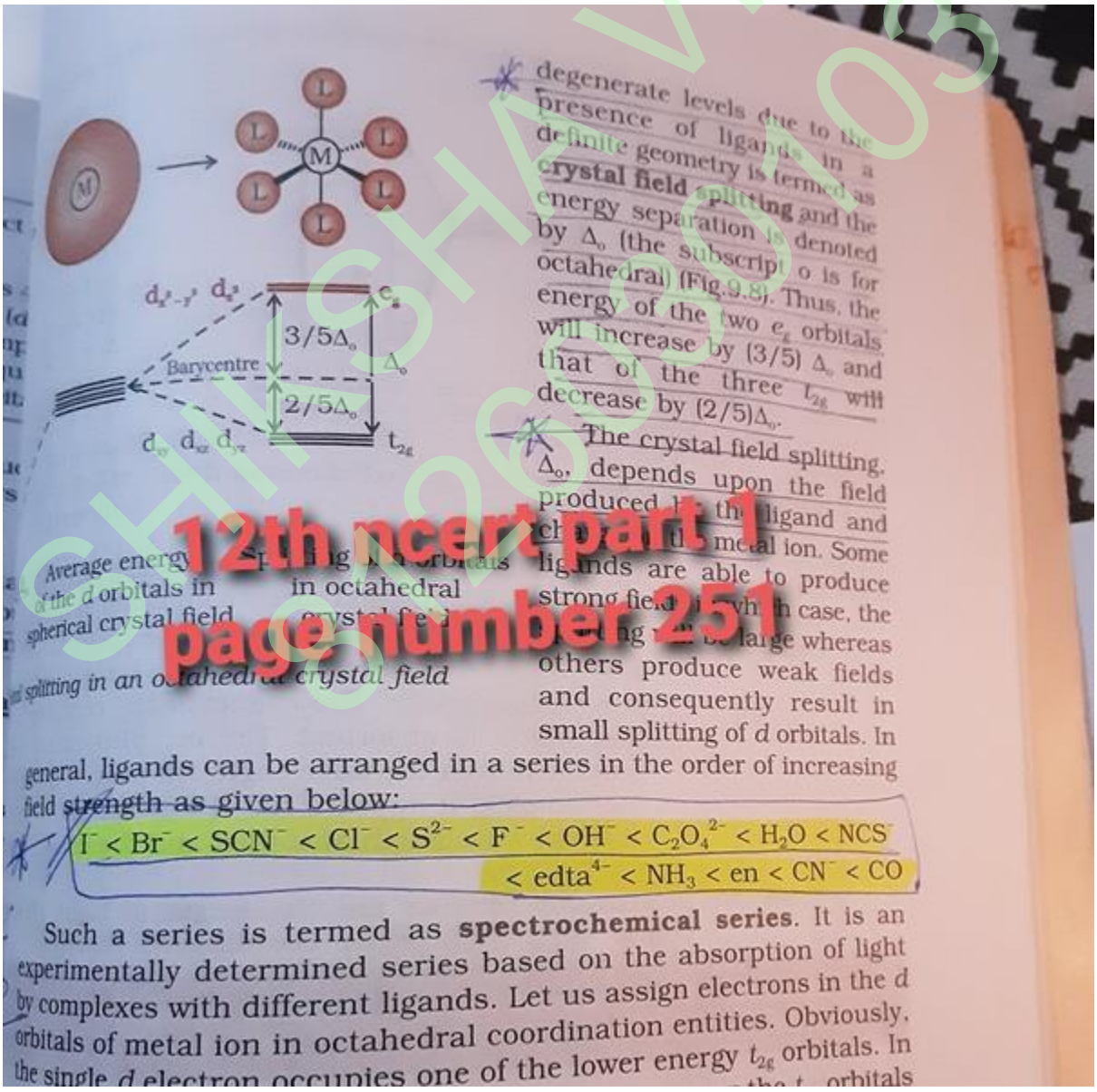
Which of the following is the **correct** order of increasing field strength of ligands to form coordination compounds ?

(1) $SCN^- < F^- < CN^- < C_2O_4^{2-}$

(2) $F^- < SCN^- < C_2O_4^{2-} < CN^-$

(3) $CN^- < C_2O_4^{2-} < SCN^- < F^-$

(4) $SCN^- < F^- < C_2O_4^{2-} < CN^-$



Average energy of the *d* orbitals in spherical crystal field

in octahedral

splitting in an octahedral crystal field

degenerate levels due to the presence of ligands in a definite geometry is termed as **crystal field** splitting and the energy separation is denoted by Δ_o (the subscript o is for octahedral) (Fig.9.8). Thus, the energy of the two e_g orbitals will increase by (3/5) Δ_o and that of the three t_{2g} will decrease by (2/5)Δ_o.

The crystal field splitting, Δ_o, depends upon the field produced by the ligand and ... metal ion. Some ligands are able to produce strong field ... in which case, the ... large whereas others produce weak fields and consequently result in small splitting of *d* orbitals. In general, ligands can be arranged in a series in the order of increasing field strength as given below:

$I^- < Br^- < SCN^- < Cl^- < S^{2-} < F^- < OH^- < C_2O_4^{2-} < H_2O < NCS^- < edta^{4-} < NH_3 < en < CN^- < CO$

Such a series is termed as **spectrochemical series**. It is an experimentally determined series based on the absorption of light by complexes with different ligands. Let us assign electrons in the *d* orbitals of metal ion in octahedral coordination entities. Obviously, the single *d* electron occupies one of the lower energy t_{2g} orbitals. In ... orbitals

11

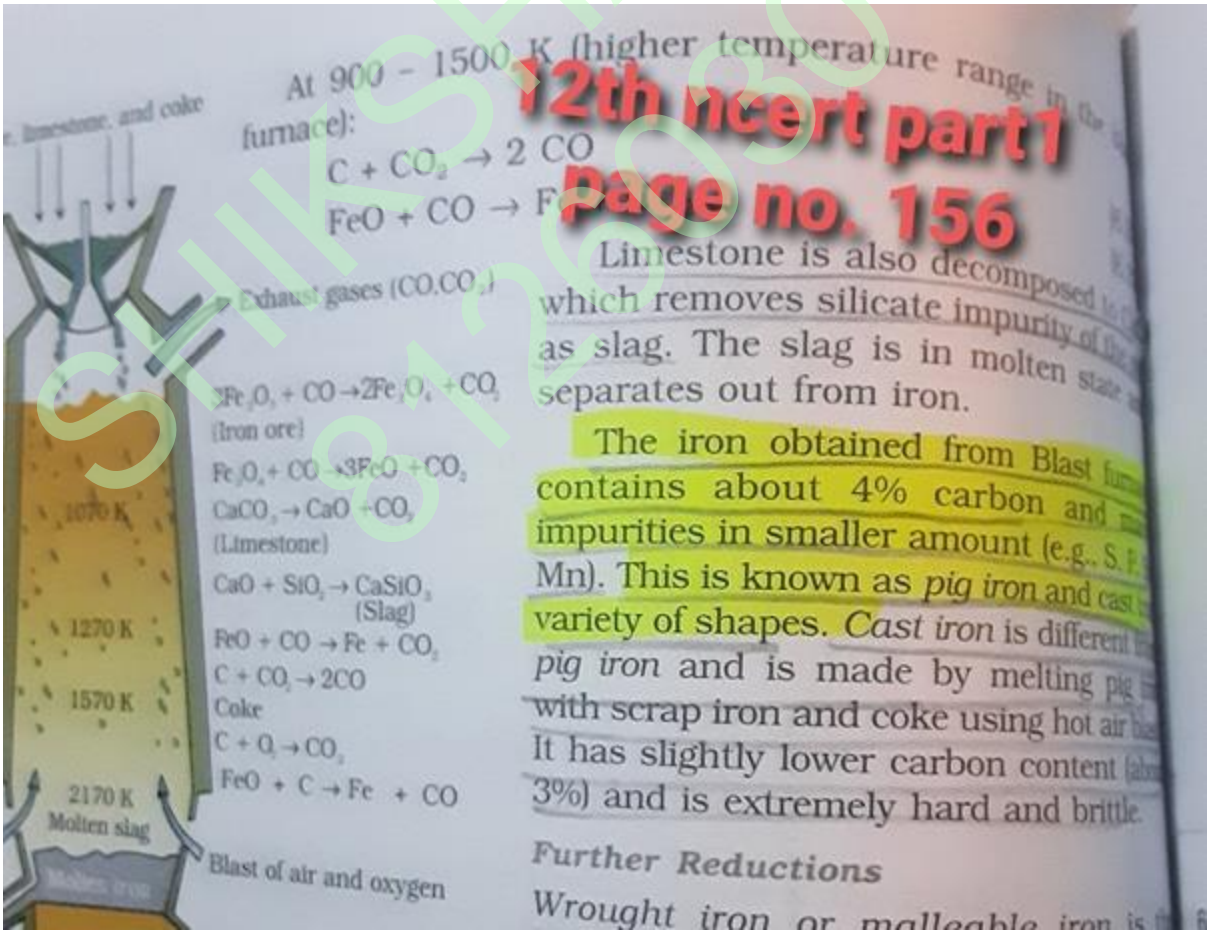
Identify the **correct** statement from the following :

(1) Blister copper has blistered appearance due to evolution of CO_2.

(2) Vapour phase refining is carried out for Nickel by Van Arkel method.

(3) Pig iron can be moulded into a variety of shapes.

(4) Wrought iron is impure iron with 4% carbon.



12

The freezing point depression constant (K_f) of benzene is 5.12 K kg mol^{-1}. The freezing point depression for the solution of molality 0.078 m containing a non-electrolyte solute in benzene is (rounded off upto two decimal places) :

(1) 0.80 K

(2) 0.40 K

(3) 0.60 K

(4) 0.20 K

Moles of ethylene glycol = $\frac{}{62 \text{ g mol}^{-1}}$ = 0.73 mol

Mass of water in kg = $\frac{600\text{g}}{1000\text{g kg}^{-1}}$ = 0.6 kg

Hence molality of [illegible] = $\frac{0.73 \text{ mol}}{0.6}$ = 1.2 mol kg^{-1}

Therefore [illegible] depression,

ΔT_f = 1.86 K [illegible] mol^{-1} × 1.2 [illegible] = 2.2 K

Freezing point of the aqueous solution = 273.15 K – 2.2 K = 270.95

Example 2.10 1.00 g of a non-electrolyte solute dissolved in 50 g of benzene lowered freezing point of benzene by 0.40 K. The freezing point depression constant of benzene is 5.12 K kg mol^{-1}. Find the molar mass of the solute.

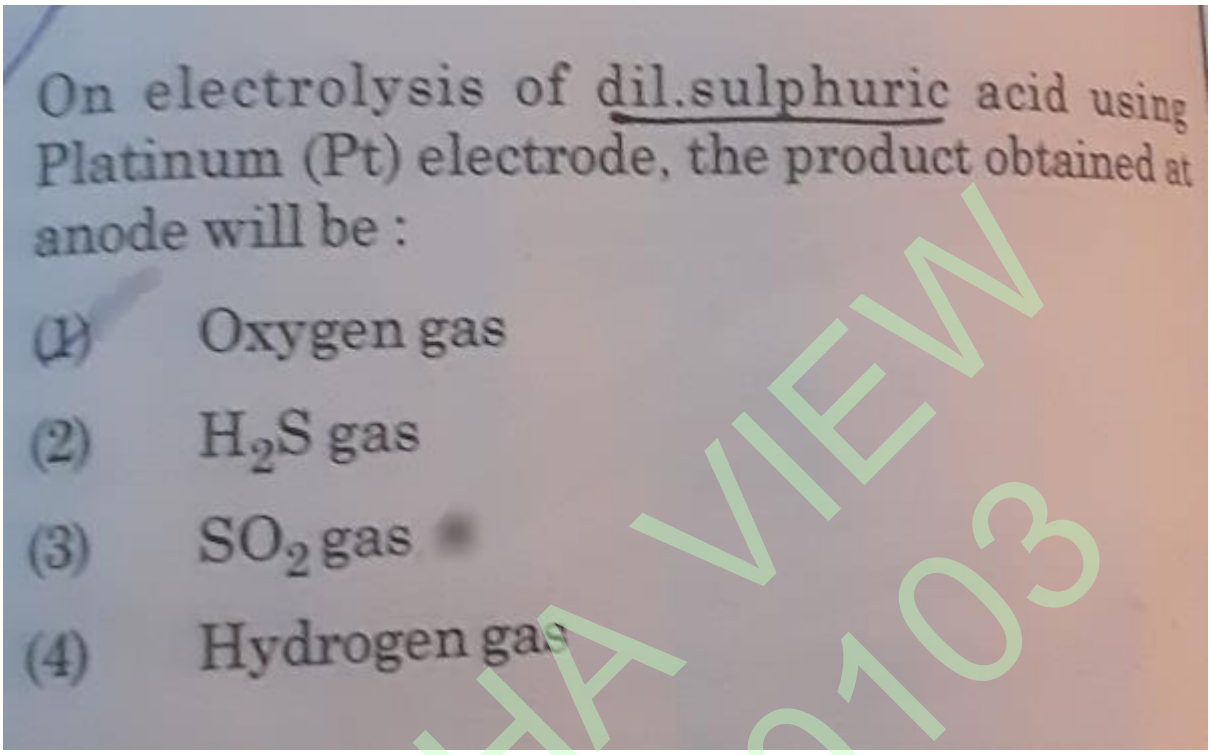
Solution Substituting the values of various terms involved in equation (2.36) we

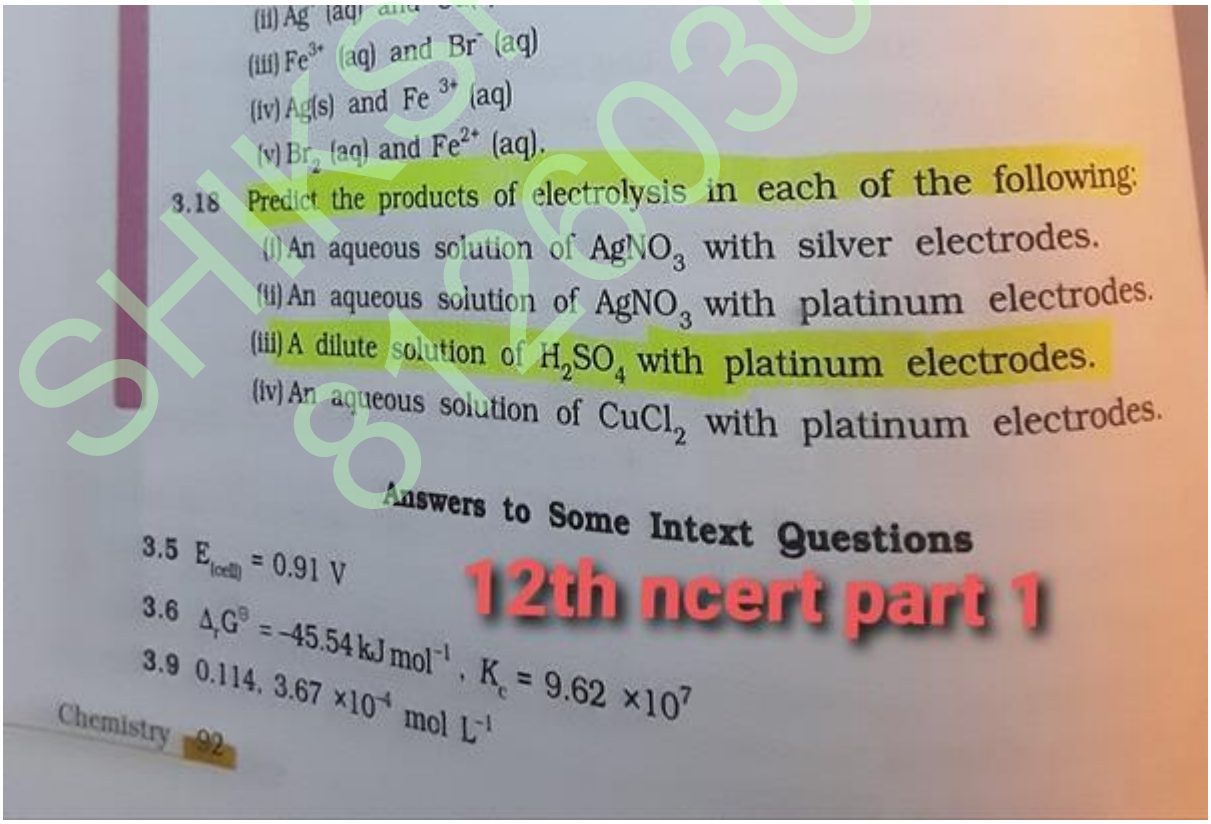
$$M_2 = \frac{5.12 \text{ K kg mol}^{-1} \times 1.00 \text{ g} \times 1000 \text{ g kg}^{-1}}{0.40 \times 50 \text{ g}} = 256 \text{ g mol}^{-1}$$

Thus, molar mass of the solute = 256 g mol^{-1}

2.6.4 Osmosis and [illegible]

13





14

180. Urea reacts with water to form **A** which will decompose to form **B**. **B** when passed through Cu^{2+} (aq), deep blue colour solution **C** is formed. What is the formula of **C** from the following ?

(1) $[Cu(NH_3)_4]^{2+}$ N family*

(2) $Cu(OH)_2$

(3) $CuCO_3 \cdot Cu(OH)_2$

(4) $CuSO_4$

(A)

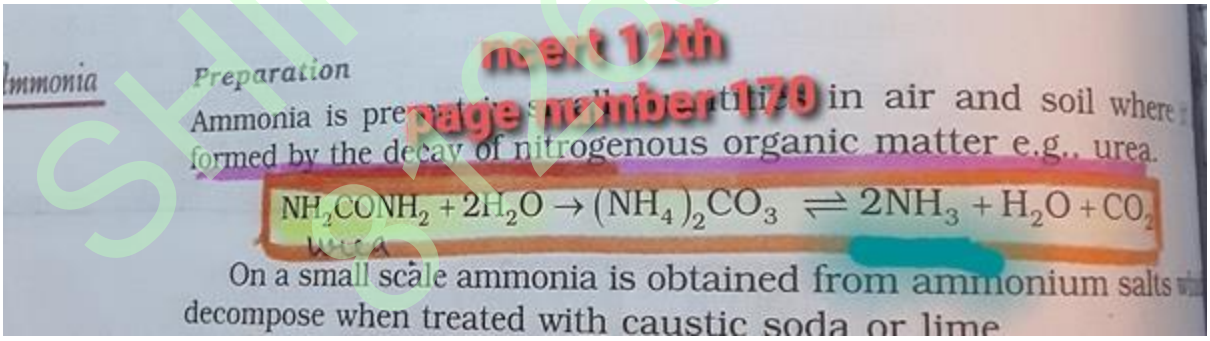
$NH_2CONH_2 + H_2O \rightarrow (NH_4)_2CO_3 \downarrow$

NH_3 (B)

-ooo-

$NH_3 + Cu^{2+}(aq) \longrightarrow [Cu(NH_3)_4]^{2+}$

(B) (C) deep blue



Ammonia

Preparation

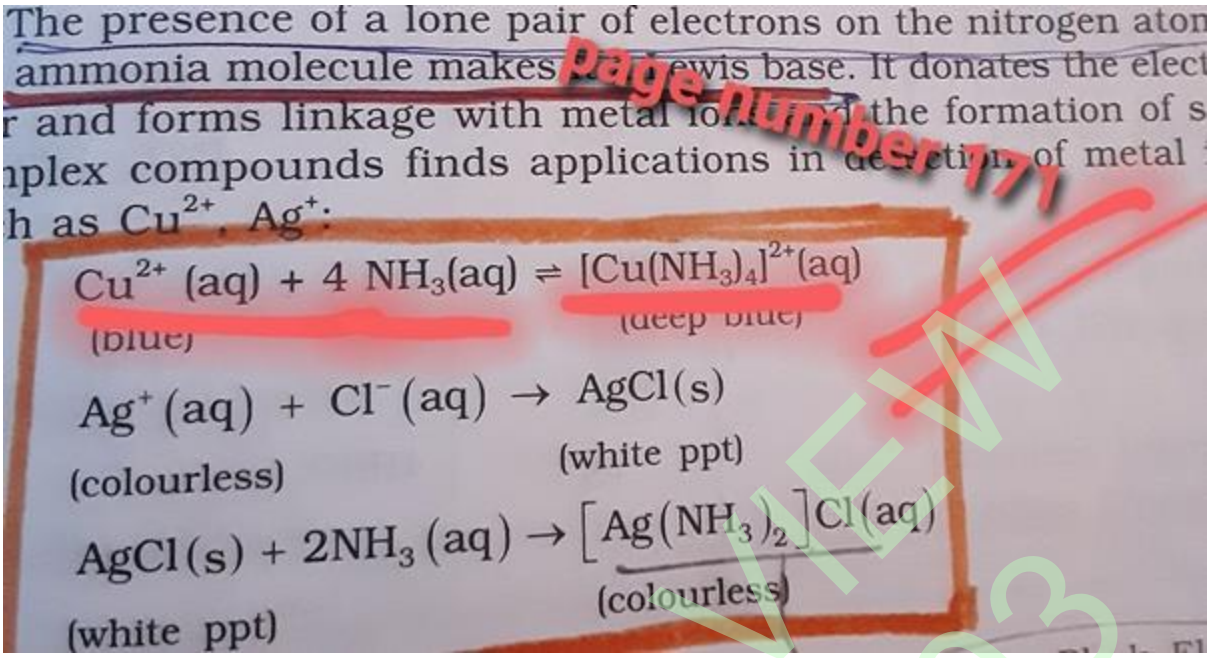
Ammonia is pre[illegible] in air and soil where it is formed by the decay of nitrogenous organic matter e.g., urea.

ncert 12th page number 170

$NH_2CONH_2 + 2H_2O \rightarrow (NH_4)_2CO_3 \rightleftharpoons 2NH_3 + H_2O + CO_2$

Urea

On a small scale ammonia is obtained from ammonium salts which decompose when treated with caustic soda or lime.



There are almost all questions directly from ncert in chemistry i shared some of them and these are enough to show that intext questions , theory part , back exercises everything is important of ncert even the numerical comes exactly same or of similar type from ncert so keep practicing from ncert ,
Ncert is enough!!!!!!!!
Hope it will help u