



केवल मूल्यांकनकर्ता के उपयोग हेतु!

माध्यमिक शिक्षा मण्डल, मध्यप्रदेश, भोपाल

32 पृष्ठीय

केवल परीक्षक द्वारा भरा जावे। प्रश्न क्रमांक के सम्मुख प्राप्तांकों की प्रविष्टि करे।

प्रश्न क्रमांक	पृष्ठ क्रमांक	प्राप्तांक (अंकों में)	प्रश्न क्रमांक	पृष्ठ क्रमांक	प्राप्तांक (अंकों में)
1			17		
2			18		
3			19		
4			20		
5			21		
6			22		
7			23		
8			24		
9			25		
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12			28		
13					
14					
15					
16					

परीक्षक एवं उपमुख्य परीक्षक द्वारा भरा जावे ↓

प्रमाणित किया जाता है कि अन्दर के पृष्ठों के अनुरूप मुख्य पृष्ठ पर अंकों की प्रविष्टि एवं अंकों का योग सही है।

निर्धारित मुद्रा : नाम, पदनाम, मोबाईल नम्बर, परीक्षक क्रमांक एवं पदांकित संस्था के नाम की मुद्रा लगाएं।

उप मुख्य परीक्षक के हस्ताक्षर एवं निर्धारित मुद्रा

Dr. Karuna Tiwari
3222090

परीक्षक के हस्ताक्षर एवं निर्धारित मुद्रा

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परीक्षक एवं उपमुख्य परीक्षक द्वारा भरा जावे

2

योग पूर्व पृष्ठ

पृष्ठ 2 के अंक

कुल अंक



प्रश्न क्र.

{ Answer of Ques. [1] }

[1] (a) 8 minutes

[2] (c) Maltase

[3] (a) Acidic

[4] (a) 0.5 M

[5] (b) cm^{-1}

[6] (d) Ionisation isomerism

B
S
E



प्रश्न क्र.

{ Answer of Ques (2) }

[1] Hexadentate

[2] Picric acid.

[3] NH_3

[4] More.

[5] Henry law.

[6] 96500 or 96487 Coulomb

B
S
E



प्रश्न क्र.

{Answer of Ques. [3]}

[1] True

[2] False

[3] False

[4] True

[5] False

[6] True

B
S
E



प्रश्न क्र.

{Answer of Ques. [4]}

B
S
E

- [1] Vitamin 'D' - (a) Rickets
- [2] Diazonium salts - (e) $C_6H_5N_2Cl$
- [3] Hinsberg's reagent - (a) $C_6H_5SO_2Cl$
- [4] Vitamin 'B₁₂' - (f) Cobalt
- [5] Protein - (b) Keratin



प्रश्न क्र.

{Answer of Ques. [5]}

[1] Unit of equivalent conductivity is $\text{ohm}^{-1}\text{cm}^2\text{eq.}^{-1}$
or $\text{ohm}^{-1}\text{cm}^2\text{gmeq.}^{-1}$

[2] General electronic configuration of f-block elements is $(n-2)f^{1-14}(n-1)d^{0-1}ns^2$

[3] Theory of Coordination compounds is propounded by Alfred Werner.

[4] Formality is define as the total number of gram formula mass of solute dissolved in one litre of Solution.

$$\text{Formality} = \frac{\text{gram formula mass of solute}}{\text{volume of Solution (L)}}$$



प्रश्न 7

[iv] 40% aqueous solution of formaldehyde is called formalin.

[v] Molality is define as total mole number of solute present in per kg of solvent. It is denoted by 'm'

$$m = \frac{\text{moles of solute}}{\text{mass of solvent in (kg)}}$$

B
S
E

{Answer of Ques. [6]} 'or'

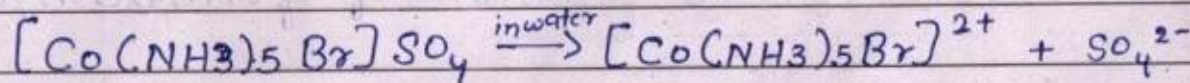
Ionisation Isomerism :- When complex having equal molecular weight and identical molecular formula can exchange ions attach through primary valency from anion present in secondary valency, then they show ionisation isomerism

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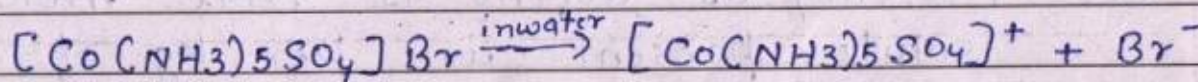


प्रश्न क्र.

for example :-



and



B
S
E

{Answer of Ques. [7]} 'OR'

Uses of Carbontetrachloride are as follows :-

(I) As a fire extinguisher by the name of pyrene.

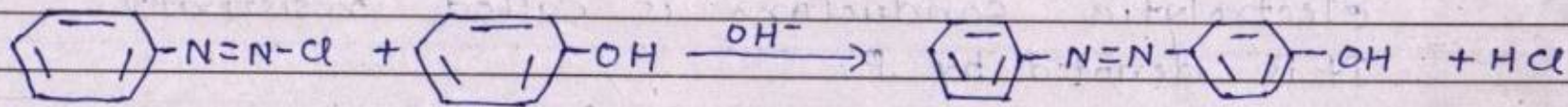
(II) In dry clipping, also used as an insecticide. It is used as solvent for fat and oil in industry.



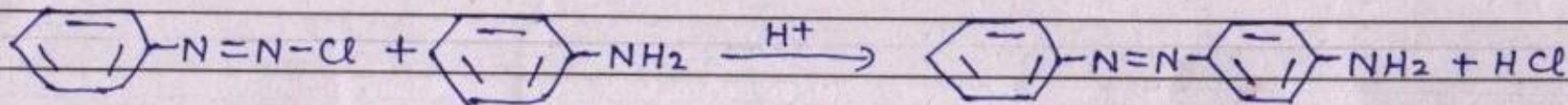
प्रश्न क्र.

{Answer of Ques-[8]} 'OR'

Coupling reaction :- Azo dyes are obtained when benzene diazonium chloride combine with phenol or aniline then coupling reaction takes place at para position and azo products are obtained.

B
S
Ebenzene diazonium
chloride

Phenol

p-hydroxy azo benzene
(orange dye)benzene diazonium
chloride

Aniline

p-amino azo benzene
(yellow dye)



प्रश्न क्र.

{Answer of Ques. [9]}

Resistivity :- The resistance of 1cm long conductor having 1cm² area of cross section is called resistivity.

In other words the resistance of 1cm³ of an electrolytic conductor ^{solution} is called resistivity.

It is denoted by ρ

$\therefore \rho = \frac{RA}{l}$, where $R =$ resistance
 $l =$ length and $A =$ area.

Unit of resistivity is ohmcm or ohmmetre.

B
S
E



प्रश्न क्र.

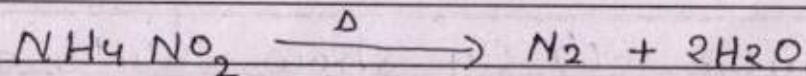
{Answer of Ques. [10]} 'OR'

Molecularity :- The number of reactant molecules present in a balanced equation of a chemical reaction is called molecularity of reaction.

In other words the number of molecules which collide simultaneously in order to bring a chemical reaction is called molecularity of the reaction.

It is always positive, whole number cannot be negative or fraction.

For example :-



molecularity = one.

B
S
E



प्रश्न क्र.

{ Answer of Ques. [11] }

B
S
E

Transition metal and ions show variable valency and oxidation state because of the energy of ns orbital and (n-1)d orbital is nearly equal. Therefore (n-1)d orbitals also act as a valence shell and number of electrons in valence of shell of transition metal increases as a result they show variable oxidation state.

More is the number of unpaired electron in valence shell higher is the oxidation state.

For example :- (i) Cu show Cu^+ and Cu^{2+} oxidation state

(ii) Mn show maximum oxidation state in 3d-transition series i.e., +2, +3, +4, +5, +6 and +7.

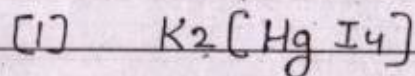


प्रश्न क्र.

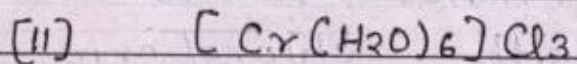
Causes :- Due to maximum and variable oxidation state transition metal exhibit stronger interionic attraction and bond present in them is strong. They have high melting and boiling point and are very reactive.

B
S
E

Answer of Ques. [12]



Potassium tetraiodomercurate(II)



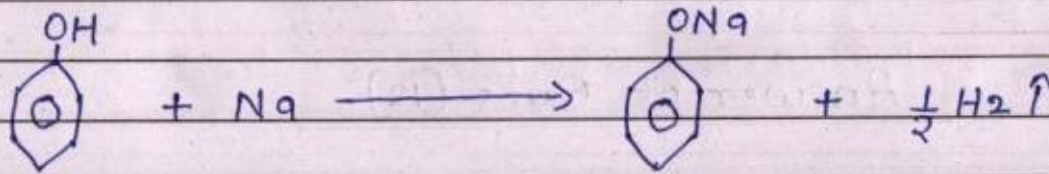
Hexaqua chromium(III) chloride



प्रश्न क्र.

{Answer of Ques. [13]}

(i) Reaction of Phenol with Sodium :- Phenol reacts with sodium to form sodium phenoxide and liberate H_2 gas.



Phenol

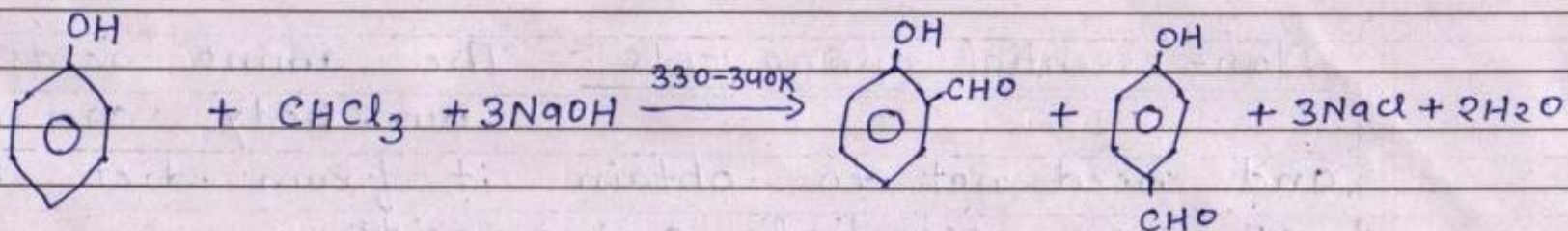
Sodium
Phenoxide

(ii) Reimer-Tiemann reaction :- Phenol reacts with chloroform and an alkali at 330 to 340K to form ortho and parahydroxy benzaldehyde.

B
S
E



प्रश्न क्र.



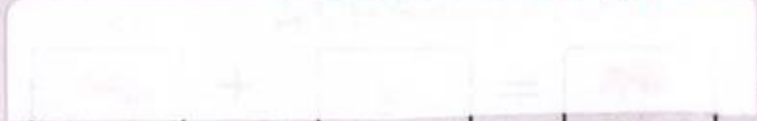
Phenol

o-hydroxy
benzaldehyde
(major)p-hydroxy
benzaldehyde
(minor)B
S
E

{Answer of Ques. [14]} 'OR'

Essential amino acids :- The amino acids which are not prepared by our body and must be obtained through our diet is known as essential amino acids.

For example :- Phenyl alanine, Valine, leucine, Isoleucine, lysine, Threonine, methionine, histidine etc.



प्रश्न क्र.

Non-essential amino acids :- The amino acids which our body can synthesized and need not to obtain it from diet is known as non-essential amino acids.

For example :- Aspartic acid, Glutamic acid, glycine, alanine, Serine, Glutamine etc.

B
S
E

{Answer of Ques. [5]} 'OR'

The reaction whose rate of reaction is directly proportional to the zero power of concentration of reactant is called zero order reaction.



प्रश्न क्र.

The rate constant for zero order reaction is given as

$$k = \frac{[A]_0 - [A]}{t} \quad \text{--- (1)}$$

where $[A]_0$ is initial concentration of reactant
 $[A]$ is final concentration of reactant
 t is time.

For half life. $[A]_0 = \frac{[A]_0}{2}$

and $t = t_{1/2}$

Putting these values in equation (1) we get

$$k = \frac{[A]_0 - [A]_0/2}{t_{1/2}}$$

$$k = \frac{[A]_0/2}{t_{1/2}}$$



योग पूर्व पृष्ठ

पृष्ठ 18 के अंक

कुल अंक

प्रश्न क्र.

$$t_{1/2} = \frac{[A]_0}{2k}$$

Hence, half life of zero order reaction is directly proportional to the initial concentration of reactant.

B
S
E

{Answer of Ques. [16]}

The elements whose last electron enters in d-orbital in their electronic configuration is called d-block elements.

The elements which have unpaired electron in their ground state or any of its excited state are called transition elements.



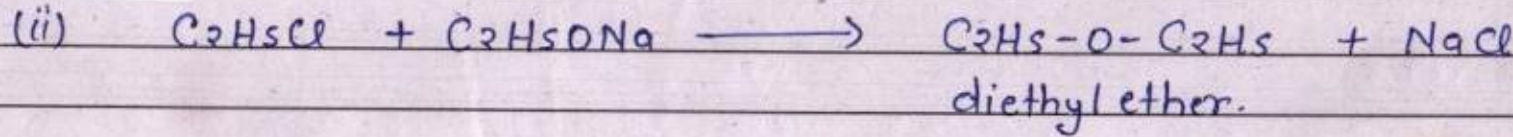
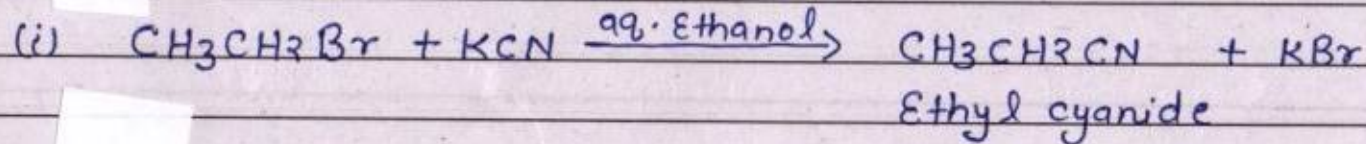
प्रश्न क्र.

Characters of d-block elements :-

(1) They are very hard, ductile, malleable, having high melting and boiling point. They have high electrical conductivity.

(2) They show variable valency and oxidation state.

{Answer of Ques. [17]} 'OR'

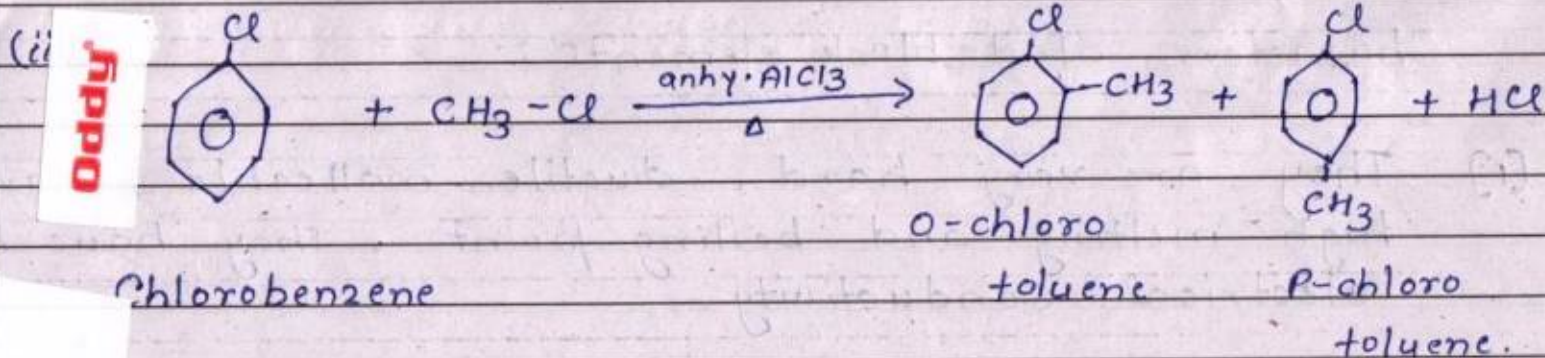
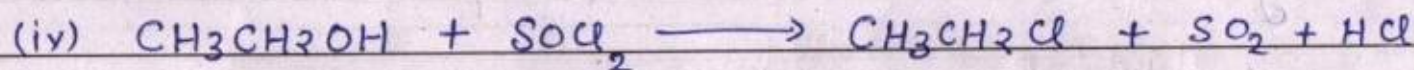


B
S
E

99.1mm x 3



प्रश्न क्र.

B
S
E

Ethylchloride

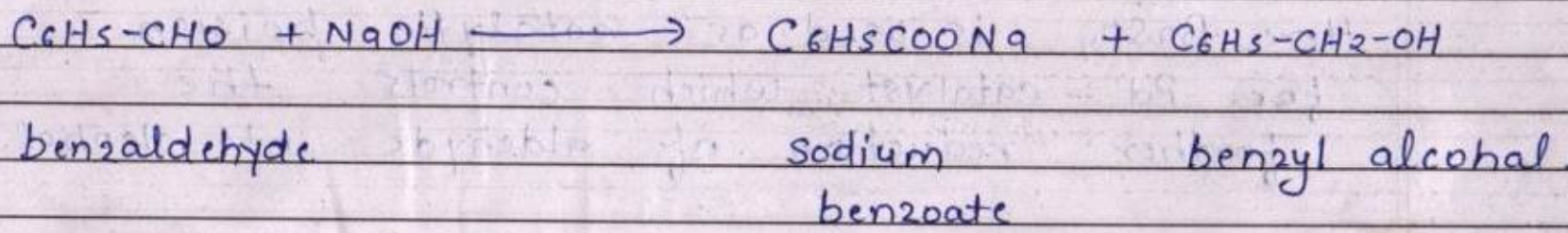
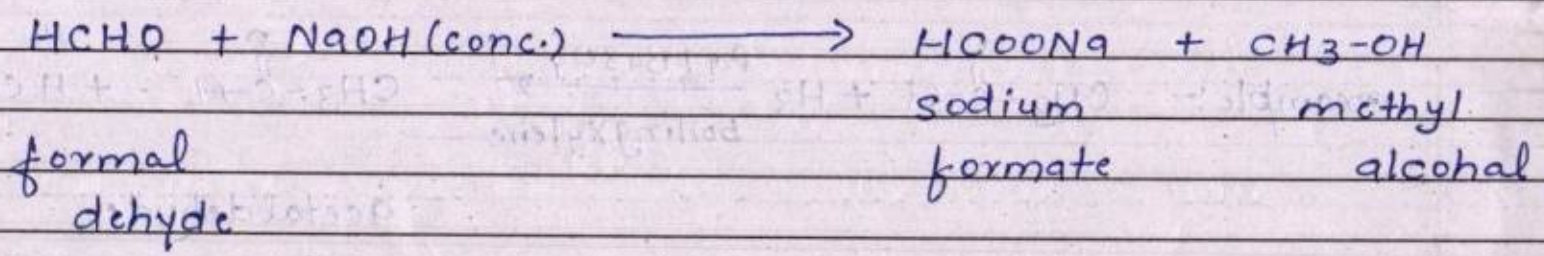


प्रश्न क्र.

{Answer of Ques. [18]}

(i) Cannizzaro's reaction :- When aldehyde having no alpha hydrogen react in presence of concentrated alkali like NaOH. Then one molecule get reduced by other, which gets oxidised. This is called Cannizzaro's reaction.

B
S
E

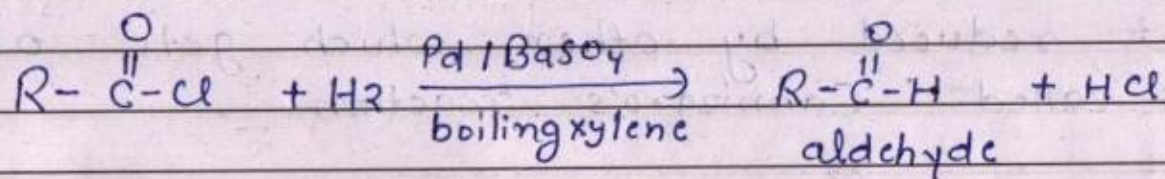




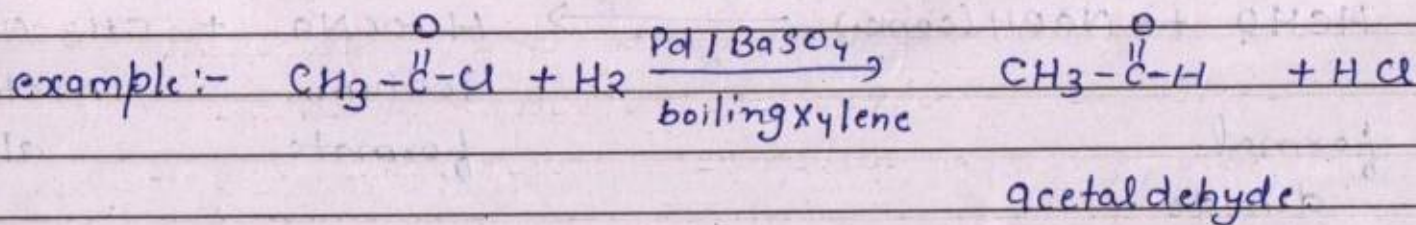
प्रश्न क्र.

(ii) Rosenmund reaction :- When reduction of acid chloride takes place in presence Pd and BaSO₄ in boiling xylene then aldehydes are obtained.

B



E



Here BaSO₄ is used as catalytic poison for Pd catalyst which controls the further reduction of aldehyde into alcohol.



प्रश्न क्र.

{ Answer of Ques. [19] } 'OR'

The temperature at which any liquid freezes or solidifies is called freezing point of that liquid.

When a non-volatile solute is added to a pure solvent then solute particle obstruct the freezing of solvent and vapour pressure of pure solvent decreases which reduces the freezing point of solvent. This process is called depression in freezing point

It is denoted by ΔT_f

Consider the initial freezing point of solvent is T_f° and freezing point of solution be T_f then depression in freezing point will be

$$\Delta T_f = T_f^\circ - T_f$$

प्रश्न क्र.

Depression in freezing point is directly proportional to the molality of solution.

$$\text{i.e., } \Delta T_f \propto m$$

where m is molality of solution.

$$\Delta T_f = K_f m \quad \text{--- (i)}$$

Here K_f is proportionality constant called freezing point depression constant or cryoscopic constant.

as we know, molality = $\frac{\text{moles of solute}}{\text{mass of solvent (kg)}}$

$$m = \frac{W_B \times 1000}{M_B \times W_A (g)}$$

B
S
E



प्रश्न क्र.

Putting this value in equation (1) we get

$$\Delta T_f = K_f \times \frac{W_B \times 1000}{M_B \times W_A(g)}$$

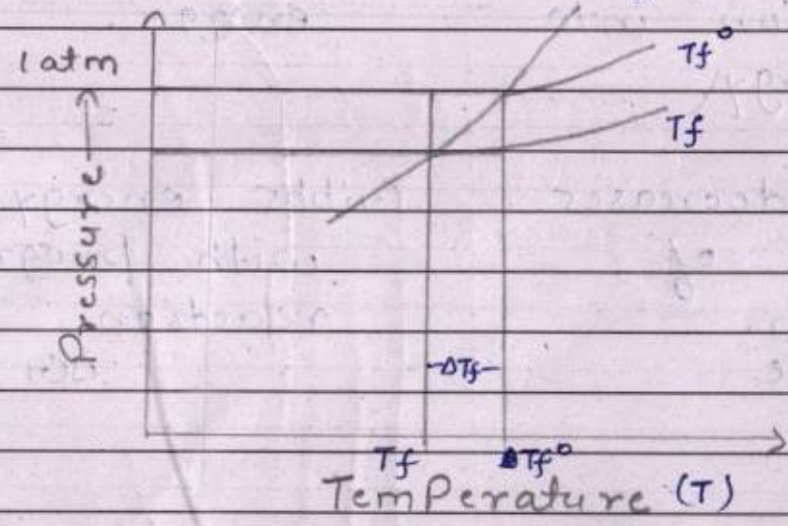
$$M_B = \frac{K_f \times W_B \times 1000}{\Delta T_f \times W(A)(g)}$$

B
S
E

Where, M_B = molecular mass of solute

W_B = mass of solute

$W(A)$ = mass of solvent



T_f° = freezing point of solvent

T_f = freezing point of solution.

ΔT_f = depression in freezing point.



प्रश्न क्र.

{Answer of Ques. [20]} 'OR'

Galvanic cell

Electrolytic cell

B
S
E

Laser

Laser

(i) Redox reaction occurring in the cell is spontaneous.

Redox reaction occurring in cell is non-spontaneous.

(ii) It converts chemical energy of spontaneous redox reaction into electrical energy.

It converts electrical energy into chemical energy.

(iii) Gibbs energy decreases with progress of energy reaction.
 $\Delta G = -ve$

Gibbs energy increases with progress of reaction.
 $\Delta G = +ve$



प्रश्न क्र.

(i) Useful work is obtained from the cell.

Work is done on the cell.

(v) Here anode act as a negative electrode and cathode act as a positive electrode.

Here anode act as positive electrode and cathode act as a negative electrode.

(vi) To set up this cell a salt bridge / Porous pot is required.

Salt bridge is not required to set up this cell.

B
S
E