

21/1/23

1st semester theory
exam.

21
30

I. 10 MARK:-

Q. Ammonium CHLORIDE:-

Properties:-

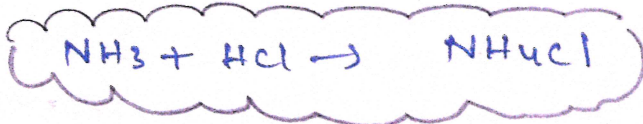
- ⊛ Molecular Formula = 53.50
- ⊛ odourless
- ⊛ Crystalline powder
- ⊛ White in colour.
- ⊛ Cool in saline taste.
- ⊛ Systemic Acidosis.

Preparation:-

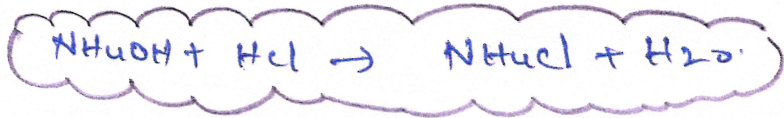
- ⊛ Ammonia is react with Hydrochloric acid and it gives the Ammonial chloride. It is the commercial preparation.



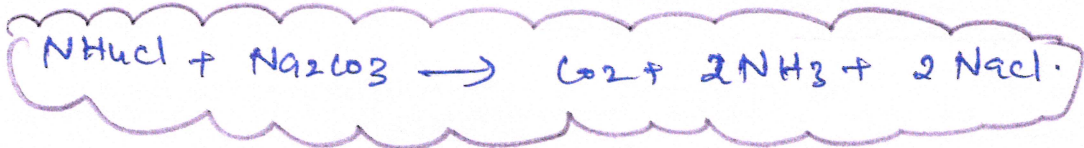

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⊗ Ammonium Hydroxide reacts with HCl and it gives Ammonium Chloride.



CHEMICAL PROPERTIES:-



⇒ Ammonium chloride reacts with alkali metal carbonates to give Carbon dioxide, Ammonium and salt of sodium chloride.

ASSAY:-

Assay For Ammonium chloride has 2 methods.

- ① precipitation titration method
- ② Acid base titration method.

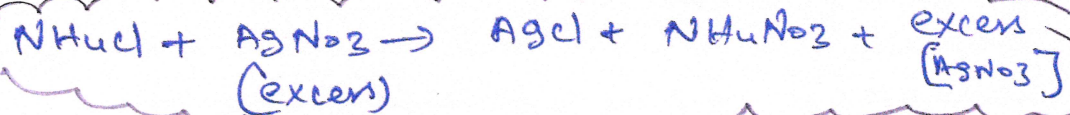


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① Precipitation titration Method:-

⊛ In these method the Ammonium chloride reacts with silver nitrate (excess) and gives silver chloride and excess (AgNO_3).



⊛ It is based on the Volhard's method.

⊛ Then the excess AgNO_3 reacts with Ferric iron as a indicator.

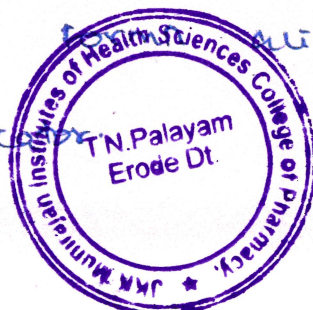


② ACID BASE TITRATION METHOD:-

⇒ Test solution:-

⇒ Take 5 ml of 0.1 M NH_4Cl in the control flask and dilute with 50 ml of water.

⇒ Then it is mixed with formaldehyde it contains formaldehyde. And also add phenolphthalein as a indicator.



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STANDARD SOLUTION:-

=> 5ml OF 0.1N NaOH is

prepared:

=> then the NaOH is titrated with the NH₄Cl ~~is~~ with the phenolphthalein indicator.

=> now the HCl is removed from NH₄Cl and it is react with NaOH OF standard solution.

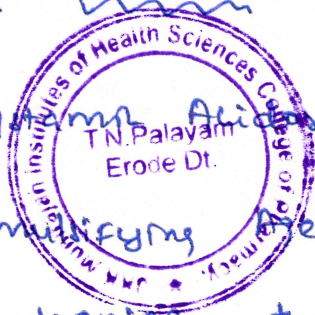
Rxn:-

① $NH_3 + HCl \rightarrow NH_4Cl$.

② formic acid reacts with Ammonium hydroxide to form Hexamiz acid.

Uses OF Ammonium CHLORIDE.-

- ⊗ Used as Synergetic Acidic.
- ⊗ Used as Emulsifying Agent.
- ⊗ Used in thickening the shampoo



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SHORT ANSWER:-

Antacid :-

* The drug ~~which~~ is the agent which are used to neutralize the excess of acid in the stomach is called Antacid.

* Two types.

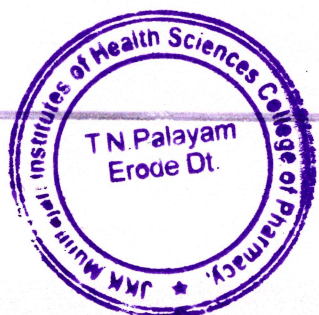
↳ ① Systemic antacid

Ex:- NaHCO_3

↳ ② Non-systemic antacid

Ex:- Magnesium containing compounds.

Heavy Kaolin	Light Kaolin.
⊛ It is used in Antinflammatory and counter irritant.	⊛ It is used in Adsorbent.
⊛ It is prepared by the process of elutriation.	⊛ It is the prepared by the freezing & its impurity the process of elutriation & drying.



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③ CATHARTICS:-

↳ The drug which are used to easily defecation.

↳ It cures the Constipation.

Classification OF Cathartics:-

① Stimulant Cathartics.

Eg: Senna.

② Bulk purgatives.

Eg: Gum, castor oil.

③ Lubricant

Eg: Oil, magnesium Cellulose.

④ Osmotic Cathartics.

Eg: MgSO₄.

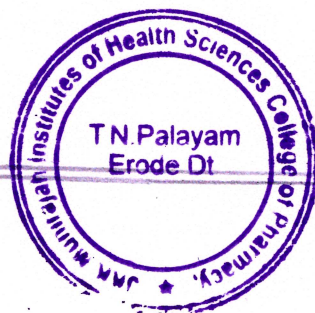
⑤

a) Bentonite → $Al_2O_3 \cdot 4SiO_2 \cdot H_2O$.

b) Epsom salt → MgSO₄.

c) Baking soda → Na₂HCO₃

d) Milk of Magnesia → Mg(OH)₂



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ACHLOHYDRIA:-

↳ It is also called Hypochlorhydria.

↳ It is defined as the more base [alkali] solution in the stomach of the human body. It is neutralized by the antacid.

2 mark:-

① Limit test for iron:-

⇒ Limit test for iron is based on the reaction between the ferric iron and thioglycolic acid in the presence of citric acid by the ammonical solution. Due to thioglycolic acid the ferric iron is converted into the ferrous iron. Now the compound produced is ferrous thioglycolate. Citric acid used to for the precipitation and the ammonical solution is used to form the complex formation. Now the test solution is compared with the standard solution. If the solution is neutral it is colourless.

If the

solution

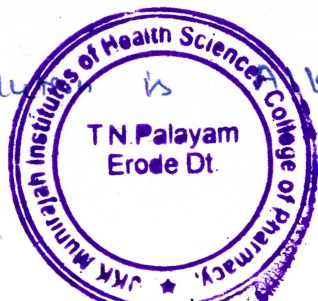
is

neutral

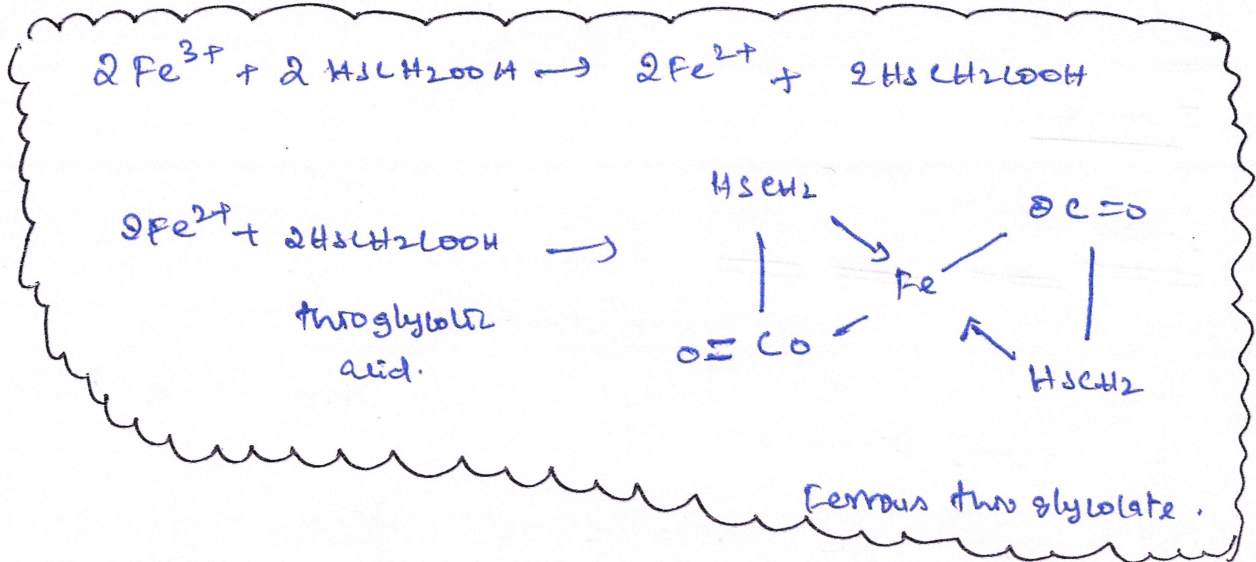
✓

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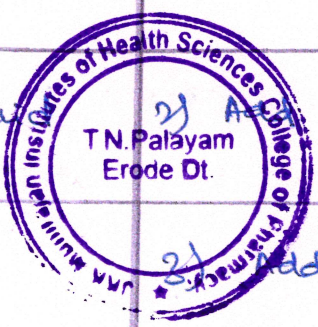
If the test solution is less intense than the standard solution it passes the limit test colors it fails. The colour is faded when it is exposed to the air. So immediately compare with the standard solution.



Procedure:-

Take two 50 ml Nessler's cylinder one for test solution and another for standard solution.

Test solution.	Standard solution.
1) Iron containing sample is dissolved in distilled water.	1) Standard solution is prepared.
2) Add thioglycolic acid.	2) Add thioglycolic acid.
3) Add and mix the citric acid solution.	3) Add and mix the citric acid solution.



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4). Add the ammolical solution.

5). Add the Ammonical solution.

Q1

CLASSIFICATION OF ANTIMICROBIAL AGENTS:-

Antimicrobial agents

↳ These are the agents which are used to destroy the growing of microorganisms and Bacterias in our surrounding places.

Germitides:-

↳ These are used to destroy the germs in our surrounding places.

↳ Like Bactericides, vermicides and infecticides are examples.

Sanitizers:-

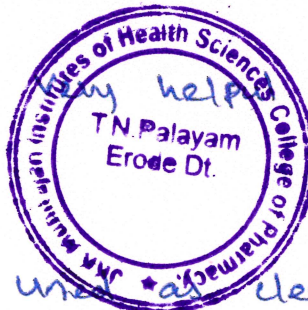
↳ These are disinfectants used for non-living things like floor, glass, toilet etc.

↳ It is also used for humans ^{Principal} JKK Munirajah Institute of Health Sciences College of Pharmacy, T.N. Palayam, Soshi (Tk), Erode (Dt) - 638 508

Care.

↳ It is very helpful in public health

↳ It is used as a cleaning process.



⇒ Antimicrobial agents used to create good health for the world.

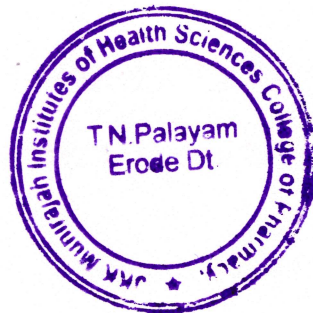
⇒ Antimicrobial agents prevent the diseases like Corona.


⇒ Antimicrobial plays the very important role in the public health.

Disadvantage of Antimicrobial agents:

↳ Intake of Antimicrobial agents cause severe death.

↳ ^{Children} ~~Infants~~ are well attracted by this so very carefully to use them.




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NAME: S. LINGELIWARAN

CLASS: 1st SEM 1st B.Pharm

SUB: PHARMACEUTICAL INO CHEMISTRY

DATE: 27/4/23

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2nd semester theory
Examination.

III.

2M:-

①.

Anti Caries:-

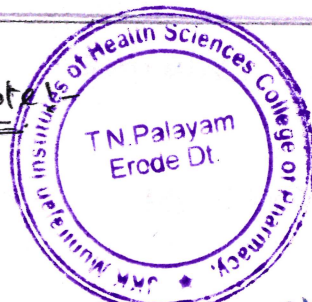
* It is defined as the anti caries (or) tooth decay occur due to acid produced due to micro organism and carbohydrate is due to the decalcification of the teeth is both accompanied as the foul odour.

⊛ The agents or the drugs used to remove the caries is called Anticaries.

car

④.

Poison and antidote



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Poison:-

⊛ Any toxic substance or chemical substance that are harmful to our body i.e is intake through oral, inhalation is called poisoning.

Antidote!-

⊛ The substance which given to the poison is called Antidot (or) The substance which inactive the poison is called Antidote.

- ⊛ Example!
- * Activate charcoal.
 - * NaNO₂
 - * Sodium thiosulphate.

⊛ Intracellular Anion!- (Cl⁻).

- chlorine.
- The most abundant intercellular anion in our body is chlorine.
- It has negative charge of 10n.
- chlorine is essential to our body.
- It takes through ~~air~~ water.

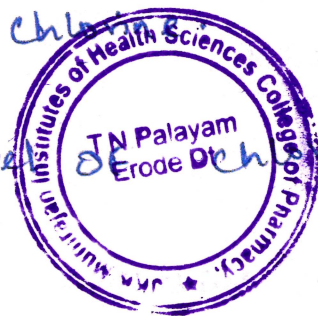
→ water contains chlorine

→ Below the level of chlorine cause

Hypo chlorimia.

→ Above the level of chlorine cause

Hypo chlorimia.



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Sm:-

Role of Fluoride:-

⊗ Fluoride is used to treat the dental caries in the teeth.

⊗ The trace of fluoride is in the our human body.

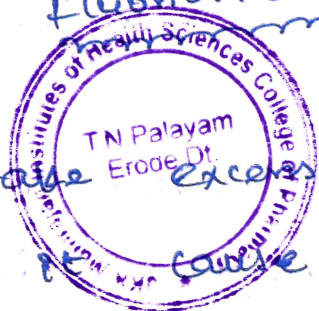
⊗ The fluoride is intake through the food and water.

⊗ Especially ground water has more fluoride content. so we preferred the mostly ground water is good for health.

⊗ Fluoride is add in the municipal water for the people.

⊗ The fluoride add in the municipal water is called fluoridation.

⊗ Suppose we take excess of fluoride in our body the Heart failure, muscle disturbance, tooth mottling occur in the enamel.



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⊛ Compared to the inner layer of the enamel outer layer has more fluoride content in the teeth.

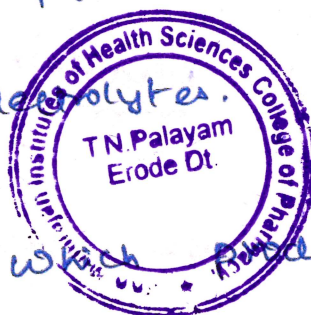
⊛ Per day we have to take 1ppm of fluoride or less it cause disturbance to the teeth.

⊛ Normal value of fluoride is 1ppm as per day [2-3ppm] cause problem to the enamel is called fluoritis.

⊛ In case of NaF [sodium fluoride] we have to take 0.2 mg of fluoride.

⊛ 2% solution fluoride is also taken through electrolytes.

⊛ The bacteria which produce the acid which is destroy by the fluoride.



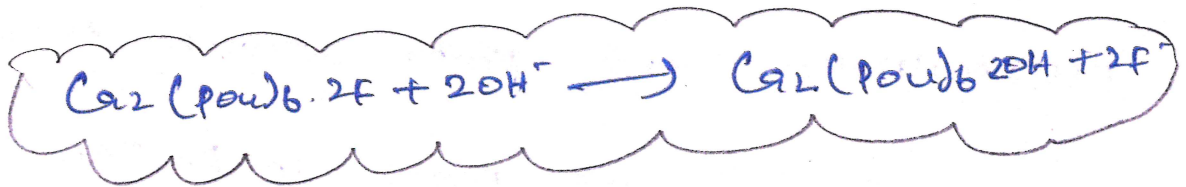
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MECHANISM:-



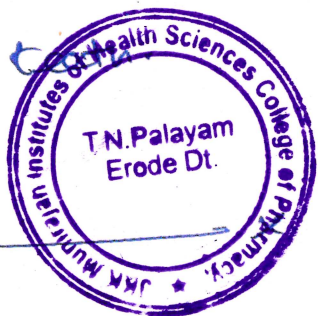
* The fluorine is replaced by the hydroxyl ion (OH⁻) in the place hydroxy apatite then it is called fluoro apatite.

Reaction:



⊗ The bacteria which produce the plaque which is inhibited by the addition of fluoride externally.

⊗ Fluorine is helpful to cure dental caries in the



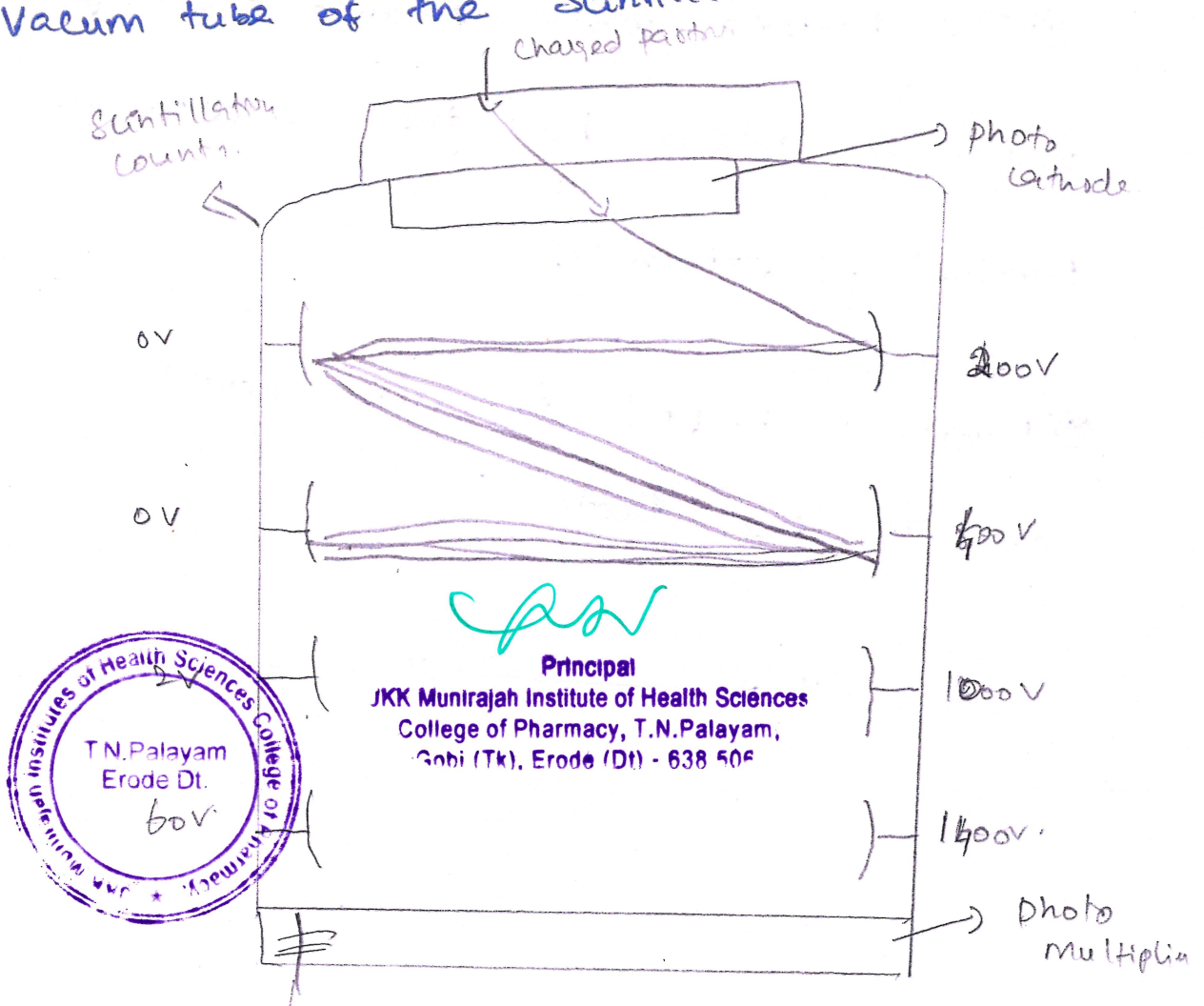
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2.

SCINTILLATION COUNTER:-

⊗ The name itself indicates that the scintillation of light which produced by when the charged particles or γ -rays strike on the scintillation counter.

⊗ The counter is made up of the photomultiplier and photo cathode through which electrons are move in to the vacuum tube of the scintillation counter.



⊗ The scintillation counter has crystal that is used for the excitation of charged particles or γ -radiation into the electrons.



⊗ The crystal are NaI, anthracene, etc used on the scintillation counter.

⊗ When the charged particles strike the scintillation counter, the electrons are excited and pass through the photocathode.

⊗ The photocathode used to convert the excited particles into the photoelectrons which further strike on the vacuum tube.

⊗ The vacuum diodes by the increasing voltage manner

⊗ The diodes helps to rise the electrons for to detect the radiation energy.



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- ① The potential difference is $10^6 - 10^8$ time we have detect the radiation.
- ② The finally the electrons reach the final dyanode and the outflow is detected through the outflow detector.
- ③ The crystal consists of some impurities for the not absorption of radiation in the scintillation chamber.

④ Thallium is that impurity for the NaI.

I.

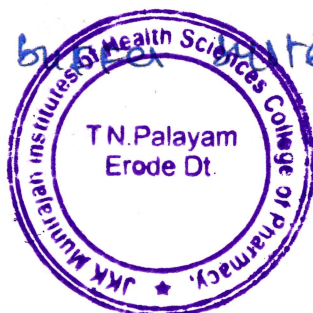
LOM:-

②

Mechanism of physiological acid Base

Balance:-

① Our human body is made up three control system for the maintenance of the body system.



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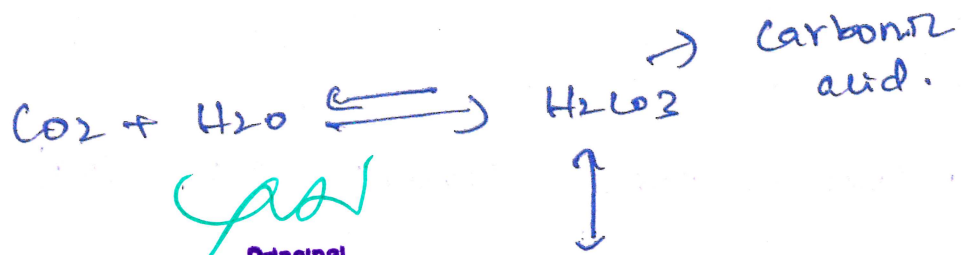
- * Carbonic acid buffer.
- * phosphate buffer.
- * protein buffer / Hb buffer.

⊗ The weak acid and its salt [^{conjugate salt} ~~weak salt~~ as weak base] both together act to maintain the buffer system.

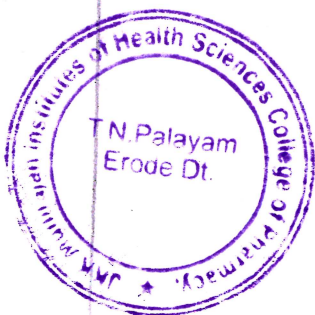
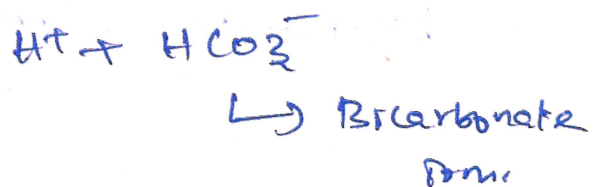
⊗ To resist the pH changes by the strong base and acid in the weak acid and base.

⊗ Hence the hydrogen ions is not introduced removed from the body and pH is only remove from the body fluids.

① CARBONIC ACID BUFFER / BICARBONATE BUFFER



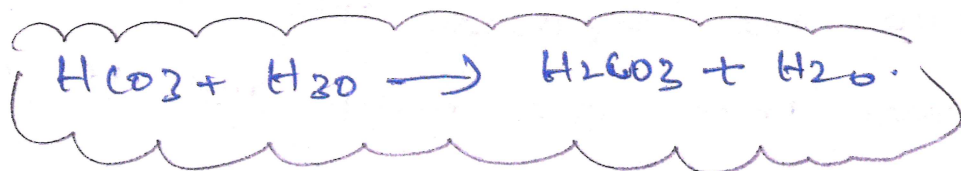
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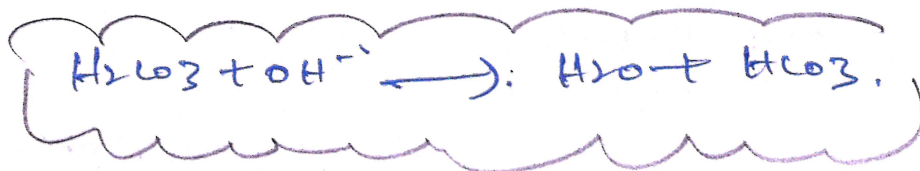
⊛ The pH is regulate in the blood and plasma. The bicarbonate ion act as a weak base and accept the acid to convert into the carbonic acid.

⊛ The carbonic acid is decomposed into the carbon dioxide and water. $[CO_2 \text{ and } H_2O]$.

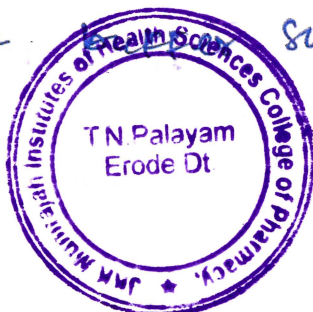
⊛ The Bicarbonate ions accepts the acid $[H_2O^+]$.



⊛ The carbonic acid reacts with base (OH^-) .



⊛ This is the carbonic acid (or) bicarbonate system.



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②

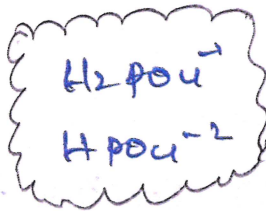
PHOSPHATE BUFFER SYSTEM



⊗ The phosphate ion is more in the intercellular body.

⊗ To regulate the pH in the blood and plasma.

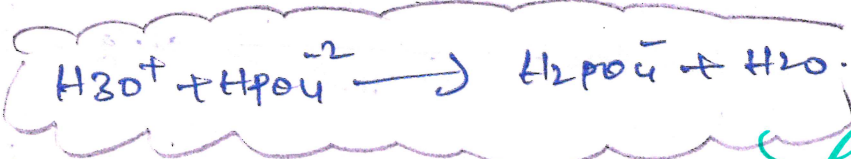
⊗ It has two forms.



In acid the monoform is converted into di form.



In alkaline medium the di form is converted into monoform.



⊗ It is the



Buffer system

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3).

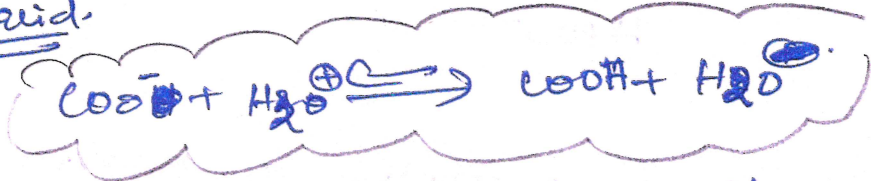
Proton Buffer System - | Hb Buffer

⊗ It has ~~base~~ both COOH^- group and NH_2^- group in this.

⊗ In acid medium the COO^- can act as acceptor.

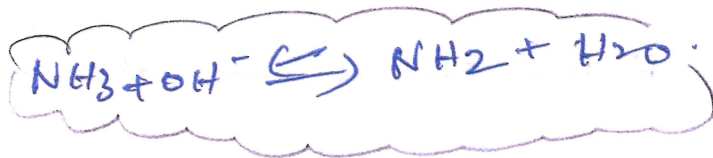
⊗ In alkaline medium, the NH_2 can act as donor.

In acid:



↳ It act as ~~do~~ acceptor.

In base:



↳ It act as a donor.

In alkaline medium it release the H^+ ion.

$\text{NH}_2 - \text{C}(\text{H})(\text{R}) - \text{COOH} \xrightarrow{\text{H}^+} \text{NH}_2 - \text{C}(\text{H})(\text{R}) - \text{COO}^-$

In acid medium it ~~act~~ absorb the proton.

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* It is called proton buffer system.

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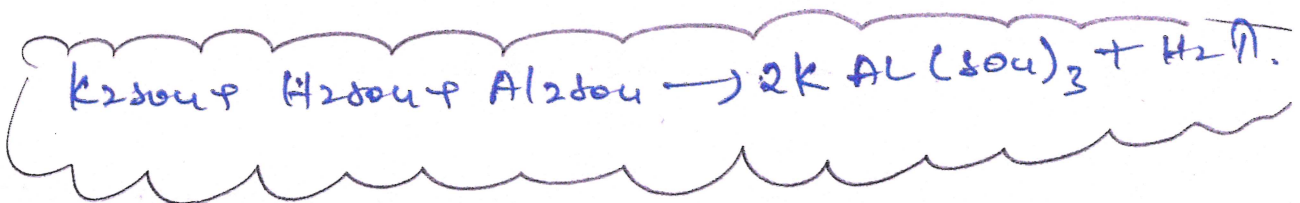
2M1-

3.

Preparation of potash Alum:-

⊕ potash alum is prepared by treating potassium sulphate and Aluminium sulphate with concentrated H_2SO_4 .

⊕ Aluminium sulphate and potassium sulphate is diluted with water and mixed together and heated and cooled together to get potash Alum crystal.



2.

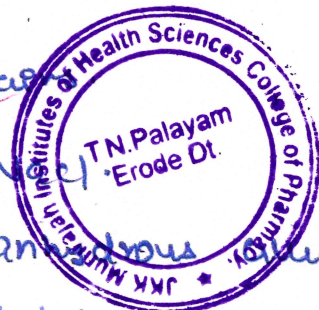
ORS:-

↳ oral rehydration salt

psd

↳ It contains

- ⊕ NaCl
- ⊕ anhydrous glucose
- * Ethyl sodium



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Polysaccharide:-

* Saccharin.

Formulated:

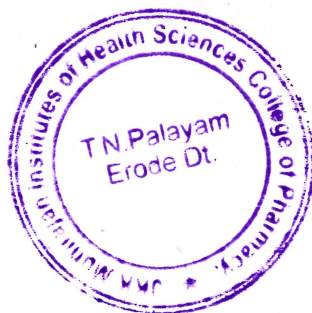
* WHO.


* UNICEF.

Component.	Formulation I	Formulation II	Formulation III
NaCl	2.0	2.3	3.0 gm.
KCl.	1.5	1.5	1.5
anhydrous glucose	-	-	2.2
Cetyl sodium.			

⊗ It is the powder form is mixed with water to treat for the diarrhoea.

⊗ In market large no. of products are available.




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