
	JAYAWANT SHIKSHAN PRASARAK MANDAL'S JAYAWANTRAO SAWANT COLLEGE OF PHARMACY & RESEARCH	
Prof. T. J.SAWANT D.E.E.B.E.(Elec.), MISTE Founder-Secretary	S. No. 58, Handewadi Road, Hadapsar, Pune- 411028. Phone : +91-020- 64005920 Tel Fax: +91-020-26970565 E-mail : jspm.jscopr@gmail.com Website : www.jspm.edu.in (Approved by PCI & AICTE, New Delhi, DTE, Govt. of Maharashtra, Mumbai, and Affiliated to Savitribai Phule Pune University, Pune) DTE Code: PH6387	Dr V. V. POTNIS M.Pharm., Ph.D. Principal

To,
The Coordinator,
NAAC, Bengaluru.

Subject: Proof of The institution assesses the learning levels of the students and organizes special Programmes for advanced learners and slow learners

Reference: 2.2.1 The institution assesses the learning levels of the students and organizes special Programmes for advanced learners and slow learners

Dear Sir/Madam,

2.2.1

- Relevant documents of the institution assesses the learning levels of the students and organizes special Programmes for advanced learners and slow learners

Advanced learner

Power point presentation

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HADAPSAR

Dental products

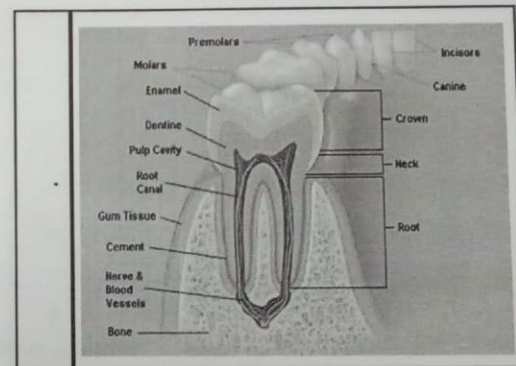
Academic Year : 2022-23
Class: First Year Semester: I
Subject : BP104.T Pharmaceutical Inorganic
Chemistry.
Pattern:2019

Course outcome/s

Co		

Contents

- > Introduction of tooth
- > Dental Diseases
- > Signs and Symptoms
- > Dental Products & Classification
- > Dental Cements and Fillers
- > Temporary Cement/Fillers



- Mammals-
- Diphyodont-teeth originates twice in life
- Adontia-Absence of teeth,
- Hypodontia-Less than 32,
- Hyperdontia-More than 32 Anatomy of Tooth
- A. Crown- 1. Enamel 2. Dentin 3. Pulp Cavity-Pulp
- B. Neck- 1, 2, 3, + 4. Part of Gum Tissue (Area where crown joins root)
- C. Root-2,3,4, + 5. Cementum

- Enamel

96 % mineral+
4 % (water + protein),
Hardest,
Strongestbut Brittle,
exposed to food and saliva.

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- Dentin-

75 % mineral,
below enamel in crown and under Cementum
in root,
determines size and shape of tooth,
substructure below enamel.
gives flexibility and absorb forces without
fracturing.

- Cementum-

less than 75 % mineral.
helps to attach teeth to jaw bones
Minerals- Apatitecrystais (CaPO_4 and CaCO_3)
General formula- $\text{Ca}_5(\text{PO}_4)_3\text{OH}$

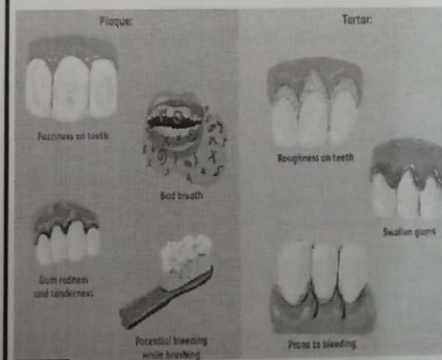
Dental Diseases:

- A. Dental Plaques-(Bacteria + food particles)
- 1. Soft Yellow sticky bio-film on enamel,
junction of enamel and gums margins.
- 2. consist of microorganism; extracellular
matrix (proteins, long chain polysaccharides
and lipids) and food particles.
- 3. Bacteria-converts carbohydrates to acids
(mostly lactic acid)
- 4. which causes demineralization of tooth,
micro-cavities and cavities.
- 5. Bacteria -Streptococcus Mutants,
Anaerobes- Actinobacteria, Fusobacterium



- B. Dental Calculus/Tartar-Hardened

- Dental Plaque, due to deposition of
minerals further on plaque. (mostly
consist of Octacalcium Phosphate)
(Bacteria + food particles+ Minerals in
food)

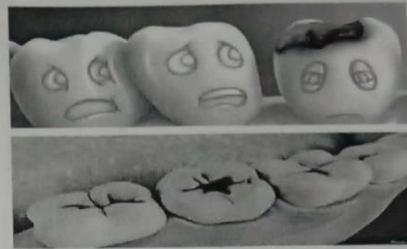


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- C. Dental Carries- tooth decay or cavity, irreversible infection causing demineralization of enamel, dentin and cementum, by production of acid via hydrolysis of food on teeth surface
Caused by- Streptococci, Lactobacilli, Actinomyces and Nocardia Species



Dental Carries-



Signs and Symptoms

- 1. Chalky white spot on enamel, indicating demineralization (microcavity)
- 2. Demineralization turns brown and forms cavities (Irreversible)
- 3. Reaches to dentin, pulp and to nerves- tooth ache, hypersensitivity to cold and hot food, bad breath, foul taste

- 4. May lead to
 - a) Ludwig's Angina- connective tissue infection to floor of mouth
 - b) Cavernous Sinus Thrombosis-(CST)- blood clot in cavernous sinus, cavity at base of brain (deoxygenated blood is collected before going to heart)

Dental Products-



Dental Products-

- Preparations used to diagnose and or treat dental or periodontal diseases
- and in general to maintain oral hygiene; to reduce tooth ache,
- hypersensitivity, foul odour due to dental and periodontal diseases
- eg. Cleansing and Polishing Agents- CaCO_3
Anti-caries Agents- NaF , SnF_2

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Lecture delivered by Smart Board



Arunkumar N, Deecaraman M₁, Rani C₂, Mohanraj K P₃, Venkateskumar K

Department of Pharmaceutics, KMCH College of Pharmacy, Coimbatore, ¹Department of Industrial Biotechnology, Dr. MGR University, Chennai, ²Department of Pharmaceutics, S.B. College of Pharmacy, Sivakasi, ³Department of Pharmaceutical Technology, Jadavpur University, Kolkatta, India

Key words: Atorvastatin, crystalline state, dissolution, high pressure homogenization, nanosuspensions

INTRODUCTION

Address for correspondence:
Dr. N. Arunkumar, Department of Pharmaceutics,
KMCH College of Pharmacy, Coimbatore – 641 048,
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DOI: 10.4103/0973-8398.63982

the dissolution of poorly soluble compounds. One such novel technology is Nanosuspension technology.

Atorvastatin is currently used as calcium salt for the treatment of hypercholesterolemia. It is insoluble in aqueous solution of pH 4 and below; it is very slightly soluble in water and pH 7.4 phosphate buffer.^[9] The intestinal permeability of atorvastatin is high at the physiologically relevant intestinal pH. The drug is absorbed more in the upper duodenum and in the upper small intestine regions. However, it is reported that the absolute bioavailability (*F*) of atorvastatin is 12% after a 40 mg oral dose.^[10] In the present study, an attempt was made to enhance the solubility and dissolution characteristics of a poorly soluble model drug, atorvastatin calcium (AC) using nanosuspension technology.

MATERIALS AND METHODS

AC was obtained as a gift sample from M/s. Caplin point, Pondicherry, India. Polyvinyl pyrrolidone was a gift sample from M/s. Colorcon, Goa, India. All other chemicals and solvents used are of analytical grade.

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Formulation development and in vitro evaluation of suspensions loaded with Atorvastatin calcium

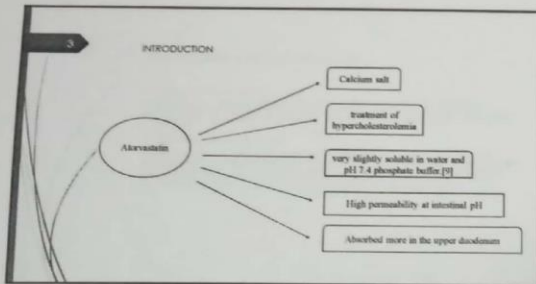
Presented By:
Miss. Ashwini E. Bhatt
Mpharm (Pharmaceutics)

Guided By:
Dr. S. Dhawan

JSPM College of pharmacy and Research, Hadapsar, Pune

Contents

- > Introduction
- > Aim
- > Objective
- > Need
- > Materials & Methods
- > Solid state characterization
- > Results
- > Conclusion
- > References



4

Aim:

The aim of this study was to prepare and characterize nanosuspensions of a poorly soluble drug (Atorvastatin calcium) in order to enhance its solubility and dissolution characteristics.

Objective:

The method being simple and easily scaled up, this approach should have a general applicability to many poorly water-soluble drug entities.

Need:

This study demonstrated the usefulness of the high pressure homogenization technique as a method of enhancing the dissolution of poorly soluble drug-like AC.

5

Materials & Methods

Preparation of nanosuspensions

- > Atorvastatin powder (5mg) was dispersed in an aqueous surfactant solution (0.2% w/v, suspensions) under magnetic stirring (1500 rpm). After dispersion, a first size-reduction step using an Ultra-Turrax T25 Basic homogenizer (IKA-Werke, Staufen, Germany) at 24,000 rpm was conducted on the suspension and the obtained mixture was homogenized using a Micro-Lizer 40 (APV Systems, Ulm, Germany). In first, 2 cycles at 100 bar and 2 cycles at 600 bar as pre-milling steps were applied, then 20 cycles at 1500 bar were run to obtain the nanosuspension. Samples were withdrawn at each size reduction steps for size distribution analysis.

Production of dry nanoparticles

- > Spray-drying using a Biotec B191a Mini Spray-Dryer (Biotec, Flawil, Switzerland) was applied in order to retrieve nanoparticles in dried-powder state from the nanosuspensions described above. Suspensions were passed at a spray rate of 3.5 ml/min for 30 min. The drying temperature was set at 115°C. Spray airflow was set at 800 l/h and drying airflow was set at 35 m³/h.

6

continue

Particle size analysis

- > The particle size analysis was performed laser diffraction (LD) using the Mastersizer E (Malvern Instruments). The LD yields a volume distribution. The particle size, d_v(0.5) (size of the particles for which 50% of the sample volume contains particles smaller than d_v(0.5) and d_v(0.9) (size of the particles for which 90% of the sample volume contains particles smaller than d_v(0.9)) were used as characterization parameters. Before measurement, the samples had to be diluted with deionized water to obtain a suitable concentration for measurement.

Zeta potential analysis

- > Zeta potential analysis was performed to estimate the stability of the nanosuspensions using Malvern Zetasizer 4 (Malvern Instruments). The samples were diluted with deionized water with conductivity adjusted to 50 µS/cm² by addition of sodium chloride before measurement. All measurements were performed in triplicate.

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COURSE LEVEL VI SEMESTER V
ATTENDANCE SHEET
Level: UG/PG

Discipline: Medicine and Pharmacy

Sr.No.	Poster No.	Name of student	Signature
1.	M1	Prasad Vavhal	Prasad Vavhal
2.		Anushree kelke	Anushree kelke
3.	M2	Sutaj Bharkar	Sutaj Bharkar
4.		Vaishnavi Kachre	Vaishnavi Kachre
5.	M3	Somnath Dongare	Somnath Dongare
6.		Richa Ray	Richa Ray
7.	M4	Shripali Gauradipre	Shripali Gauradipre
8.		Shreaddha Shankarpelli	Shreaddha Shankarpelli
9.	M5	Ashwini Bhatf	Ashwini Bhatf
10.		Puja Kadam	Puja Kadam
11.	M6	Vyankatesh Katule	Vyankatesh Katule
12.		Pratik Jagtap	Pratik Jagtap
13.	M7	Mayur Mahajan	Mayur Mahajan
14.		Prashant Suryavanshi	Prashant Suryavanshi
15.			
16.			

Poster Presentation Competition

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AVISHKAR-2022



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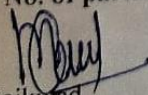
General Club Activity

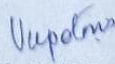
GPAT & Nipper

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ACTIVITY REPORT

Title of Activity: Orientation cum training webinar on "How to Prepare for GPAT/NIPER competitive examinations"

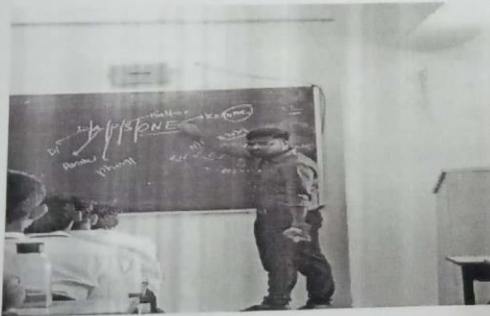
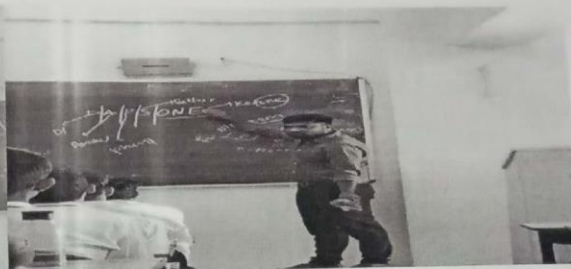
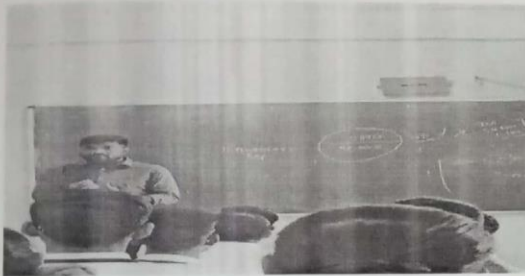
1. **Date, venue & time:** Wednesday, 08/02/2023 from 10.00 a.m. to 12:00 p.m. offline mode
2. **Outcome of activity:** It was an orientation cum training session for the aspirants of TY and Final Year BPH 2022-23 who are taking national level competitive exams GPAT and NIPER, 2023.
3. **Description of activity:** As an initiative to enhance placement of students for higher education through national level competitive exams, the Training Placement Cell and Competitive Examinations Cell of the College, organized one day orientation cum training programme entitled "Competitive Exams as Career options: special focus on GPAT/NIPER" on 8th February 2023. Prof.Dr.Mohanrao Addi, Director of APEX Academy of Aspirants of GPAT/NIPER, Bhajirao Road, Swarjet, Pune delivered a highly informative and impactful session citing key aspects of both the entrance examinations. Prof.Dr.Mohanrao Addi gave a complete know how of the procedures, for taking these exams, tips for greater success and methods for preparation for these examinations. Mr.S.N.Gaikwad introduced Prof.Dr.Mohanrao Addi on behalf of the management.
4. **Activity Experience:** More than 70 participants from college attended the webinar. All participants noted the key points about the techniques of exams, practices tests and study planning. Moreover, got their doubts cleared. Prof.Dr.Mohanrao Addi engaged students in the interactive sessions, elaborated many success stories under his tutelage. Students appreciated "short method tricks" for clearing exam.
5. **Assessment of activity outcomes:** The students got better insight into the challenges and opportunities of career in higher education through the national level competitive exams.
6. **Feedback:** Formal feedback has been collected.
7. **Total No. of participants:** about 75


Mr. S.N. Gaikwad
Co-ordinator


Dr Ms V. V. Potnis
Principal
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ACTIVITY REPORT

Screenshots of webinar



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Online Batches
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MOCK EXAMS
LAUNCHING ON : 12/02/2023
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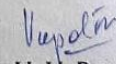
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ACTIVITY REPORT

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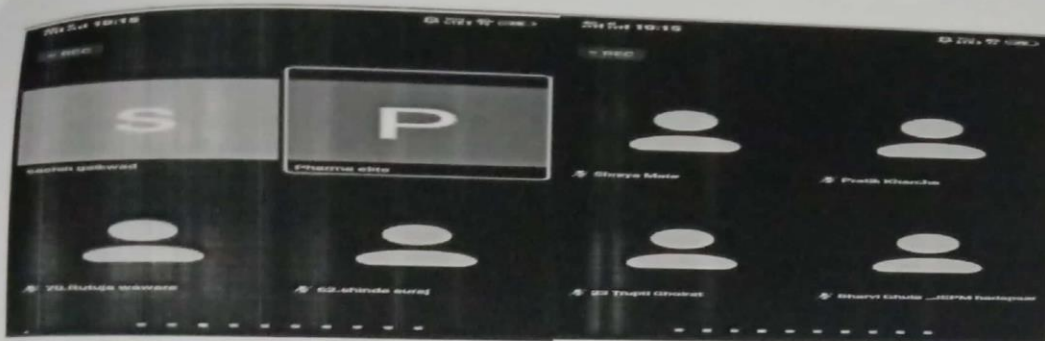
1. **Date, venue & time:** Thursday, 01/09/2022 from 10.00 a.m. to 12:00 p.m. online mode (ZOOM link)
2. **Outcome of activity:** It was an orientation cum training session for the aspirants of Final Year BPH 2022-223 who are taking national level competitive exams GPAT and NIPER, 2022.
3. **Description of activity:** As an initiative to enhance placement of students for higher education through national level competitive exams, the Training Placement Cell and Competitive Examinations Cell of the College, organized one day orientation cum training programme along with Quiz competition activity entitled "Competitive Exams as Career options: special focus on GPAT/NIPER" on 1st September 2022. Mr. Dharmesh Mehta, Director of Pharmelite Academy of Aspirants of NIPER/GPAT, Thane delivered a highly informative and impactful session citing key aspects of both the entrance examinations. It was collaborative activity between JSPM's JSCOPR, Hadapsar, Pune. Mr. Dharmesh Mehta gave a complete know how of the procedures, for taking these exams, tips for greater success and methods for preparation for these examinations. Mr. S.N. Gaikwad introduced Mr. Dharmesh Mehta on behalf of the management.
4. **Activity Experience:** More than 40 participants of colleges attended the webinar. All participants noted the key points about the techniques of exams, practices tests and study planning. Moreover, got their doubts cleared. Mr. Dharmesh Mehta Director of Pharmelite engaged students in the interactive sessions, elaborated many success stories under his guidance. Students appreciated "short method tricks" for clearing exam.
5. **Assessment of activity outcomes:** The students got better options into the challenges and opportunities of career in higher education through the national level competitive exams.
6. **Feedback:** Formal feedback has been collected..
7. **Total No. of participants:** about 43


Mr. S.N. Gaikwad


Dr. Ms. V. V. Potnis

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ACTIVITY REPORT



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Slow learner

Oral Rehydration Salt

> WHO approved <

→ oral rehydration therapy.

composition :

- NaCl : 2.6g
- KCl : 1.5g
- trisodium citrate : 2.9g
- glucose : 13.5g
- water : 1 litre.

* concentration :

- sodium : 75
- potassium : 20
- chloride : 65
- citrate : 10
- glucose : 75

Total osmolality : 245

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and Research.

CIPLA

* ORS:

- ① Oral Rehydration salt also known as oral Rehydration therapy.
- ② It is a type of fluid replacement used mainly for the treatment of dehydration which occur due to diarrhea.
- ③ ORS is cheap, simple and effective way for treating diarrhea. [dehydration].
- ④ The main composition of ORS are:

composition.	Amount	ions
- NaCl.	2.6g	Na^+
- KCl	1.5g	K^+
- trisodium citrate	2.9g	Cl^-
- glucose	13.5g	
- water	1 litre.	

Concentration of ORS mol/litre:

Sodium	75
Potassium	20
Chloride	65
citrate	10
glucose	75

total osmolality: 245

* principle: Glucose when given orally enhances the intestinal absorption of salt and water and maintains electrolyte and water imbalance.

Assignment - 1.

1). Define acids and bases with examples.

→ Acid - Any hydrogen-containing substance that is capable of donating a proton (hydrogen ion) to another substance.

Sour in taste and pH is less than 7.

Example - HCl, H₂SO₄.

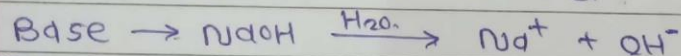
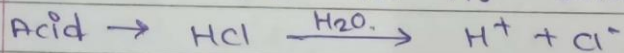
Base - molecule or ion able to accept a hydrogen ion from an acid.

Bitter in taste and pH value is more than 7.

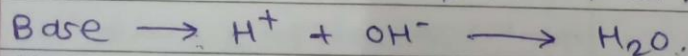
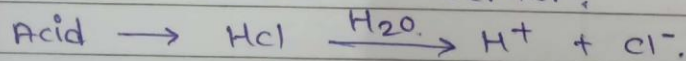
Example - KOH, NaOH.

2). Give the acid bases theories with examples.

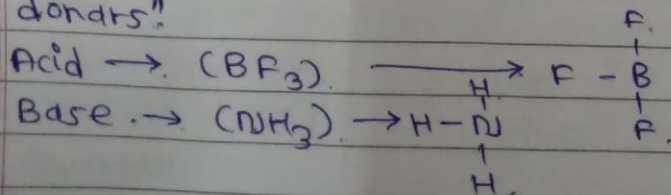
→ i). Arrhenius theory - This theory is of acids and bases states that "an acid generates H⁺ ions in a solution where as a base produces an OH⁻ ion in its solution.



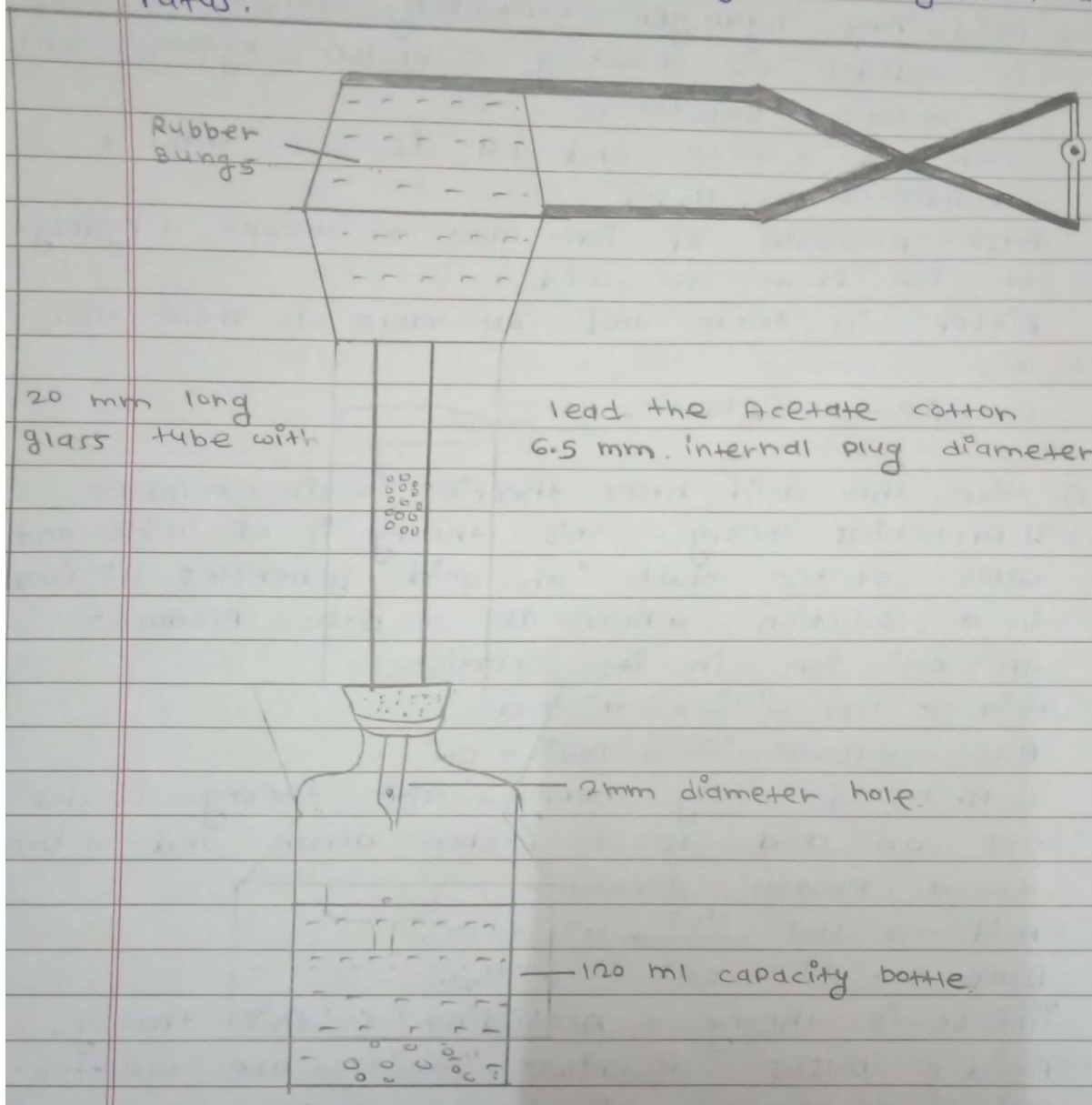
ii). Bronsted - Lowry theory - This theory defines an acid as a proton donor and a base as a proton acceptor.



iii). Lewis theory - According to this theory, acids & bases describes "acids are electron-pair acceptors and bases as electron-pair donors."



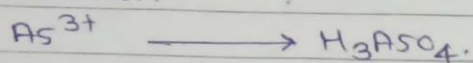
3) Draw a well labelled diagram of gutzeit apparatus.



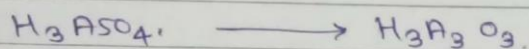
4) Give the principle & reaction of arsenic.

→ All arsenic present into arsenic gas (AsH_3) by reaction with zinc & hydrochloric acid. Base on reaction of arsenic gas with hydrogen ion to form yellow stain on mercuric chloride, paper in of reducing agent. like potassium iodide.

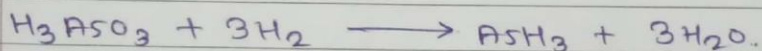
Reaction: —



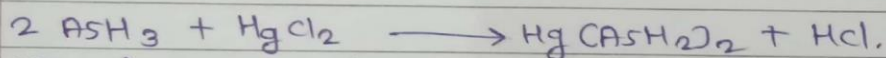
Impurity. Arsenic acid.



(Arsenic acid) (Arsenic acid)



(Arsenic acid), (Arsenic gas)



(Arsenic gas), (mercuric chloride), (yellow stain)

5) Give the principle of chloride.

→ The chloride ions to is most common impurity arsenic due to use of tap water during manufacturing process. It is based upon the chemical reaction between silver nitrate and soluble in presence of dilute nitrate acid to give opalescence of silver chloride.