

PHARMACIST BOOSTER 32

PHARMACEUTICAL CHEMISTRY

ANTIMICROBIALS



Important for **RRB, AIIMS, ESIC, SEPOY, CISF, GSSSB, DSSSB, SSC, CGHS** etc.



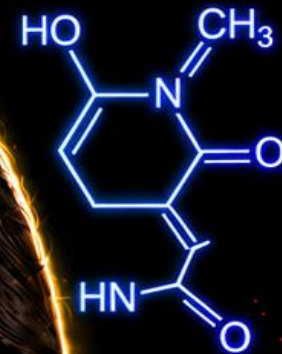
Concept + Revision

कॉन्सेप्ट + रिविजन

हिंदी + English में

Priyanka Ma'am

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ANTIMICROBIALS

Important Compounds & Uses / महत्वपूर्ण यौगिक एवं उपयोग



- Key topical and chemical antimicrobials



- Important in cleansing, antiseptic, disinfectant action



- Includes peroxide, iodine, borax, silver nitrate, sulphur compounds



- Also important for poisoning antidotes and exam facts



- मुख्य topical एवं chemical antimicrobials



- cleansing, antiseptic तथा disinfectant action में महत्वपूर्ण



- peroxide, iodine, borax, silver nitrate, sulphur compounds शामिल



- poisoning antidotes तथा exam facts के लिए भी महत्वपूर्ण



Focus: Compound • Formula • Uses

/



फोकस: यौगिक • सूत्र • उपयोग

ANTIMICROBIALS

Hydrogen Peroxide & Potassium Permanganate

1 Hydrogen Peroxide



Strength: not less than 6% w/w H_2O_2



Formula: H_2O_2



Uses: cleaning and antimicrobial effect, ear drops as dewaxing agent, bleaching agent, antidote in phosphorus and cyanide poisoning



KMnO_4



WOUND
CLEANSING



EAR DROPS
(DEWAXING AGENT)



ANTIDOTE
(POISONING)

2 Potassium Permanganate



Synonym: Condy's crystals



Purity: not less than 99.0% KMnO_4



Formula: KMnO_4



Uses: powerful cleansing agent for wounds/ulcers, antidote in barbiturate poisoning, gastric lavage

1 Hydrogen Peroxide



मात्रा: H_2O_2 कम से कम 6% w/w



सूत्र: H_2O_2



उपयोग: cleaning व antimicrobial effect, ear drops में dewaxing agent, bleaching agent, phosphorus व cyanide poisoning में antidote

2 Potassium Permanganate



अन्य नाम: Condy's crystals



शुद्धता: KMnO_4 कम से कम 99.0%



सूत्र: KMnO_4



उपयोग: wounds/ulcers के लिए powerful cleansing agent, barbiturate poisoning में antidote, gastric lavage

ANTIMICROBIALS

Chlorinated Lime & Aqueous Iodine Solution

1 Chlorinated Lime

- **Synonyms:** bleaching powder, chloride of lime
- **Contains chlorine:** 30% w/w
- **Formula:** $\text{Ca}(\text{OCl})\text{Cl}$
- **Use:** disinfectant and bleaching agent

2 Aq. Iodine Solution

- Also called **Lugol's solution**
- **Composition:** 5% w/v iodine + 10% w/v potassium iodide in water
- **Formula:** I_3K
- **Uses:** good source of iodine, germicidal and fungicidal properties



DISINFECTS • CLEANS • PROTECTS

1 Chlorinated Lime

- **अन्य नाम:** bleaching powder, chloride of lime
- **क्लोरीन:** 30% w/w
- **सूत्र:** $\text{Ca}(\text{OCl})\text{Cl}$
- **उपयोग:** disinfectant तथा bleaching agent

2 Aq. Iodine Solution

- इसे **Lugol's solution** भी कहते हैं
- **संघटन:** 5% w/v iodine + 10% w/v potassium iodide in water
- **सूत्र:** I_3K
- **उपयोग:** iodine का अच्छा स्रोत, germicidal तथा fungicidal गुण

BEST PHARMACIST COURSE

RECOMMENDED FOR YOUR PREPARATION





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HSSC PHARMACIST

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FEATURES

- LIVE CLASSES
- RECORDED CLASSES
- PREVIOUS YEAR PAPERS
- NON - PHARMA TEST SERIES
- PHARMA TEST SERIES
- SUBJECT-WISE E-NOTES



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ANTIMICROBIALS

Borax, Silver Nitrate & Mercury Yellow

1 Borax

- **Synonym:** sodium borate
- **Formula:** $\text{Na}_2\text{B}_4\text{O}_7 \cdot 10\text{H}_2\text{O}$
- **Uses:** wet dressings for wounds, astringent action



BORAX
(Sodium Borate)

SILVER NITRATE

2 Silver Nitrate

- **Formula:** AgNO_3
- **Important note:** prolonged use may cause argyria
- **Use:** precipitating germicide

1 Borax

- **अन्य नाम:** sodium borate
- **सूत्र:** $\text{Na}_2\text{B}_4\text{O}_7 \cdot 10\text{H}_2\text{O}$
- **उपयोग:** wounds के लिए wet dressings, astringent action

2 Silver Nitrate

- **सूत्र:** AgNO_3
- **महत्वपूर्ण:** prolonged use से argyria हो सकती है
- **उपयोग:** precipitating germicide

3 Mercury Yellow

- **Synonym:** yellow mercuric oxide
- **Formula:** HgO
- **Uses:** mild antiseptic, local anti-infective and antibacterial, mild inflammation of eyes / conjunctivitis



WOUND DRESSING

EYE CARE

3 Mercury Yellow

- **अन्य नाम:** yellow mercuric oxide
- **सूत्र:** HgO
- **उपयोग:** mild antiseptic, local anti-infective, antibacterial, eyes / conjunctivitis की mild inflammation में

ANTIMICROBIALS

Ammoniated Mercury, Sublimed Sulphur & Selenium Sulphide

1. Ammoniated Mercury

- **Synonym:** amino chloride of mercury
- **Formula:** NH_2HgCl
- **Uses:** treats impetigo, psoriasis, minor skin infections, other skin disorders

2. Sublimed Sulphur

- **Synonym:** flower of sulphur
- **Formula:** S
- **Use:** scabies

3. Selenium Sulphide

- **Formula:** SeS_2
- **Key point:** reduces disulphide linkage in cysteine
- **Use:** anti-dandruff shampoo



1. Ammoniated Mercury

- **अन्य नाम:** amino chloride of mercury
- **सूत्र:** NH_2HgCl
- **उपयोग:** impetigo, psoriasis, minor skin infections तथा अन्य skin disorders में

2. Sublimed Sulphur

- **अन्य नाम:** flower of sulphur
- **सूत्र:** S
- **उपयोग:** scabies

3. Selenium Sulphide

- **सूत्र:** SeS_2
- **मुख्य बिंदु:** cysteine में disulphide linkage को कम करता है
- **उपयोग:** anti-dandruff shampoo

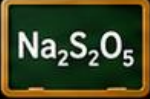


ANTIMICROBIALS



PART 1

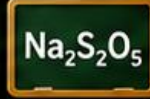
QUICK FACTS (ENGLISH)

-  Sodium hypochlorite = **oxidative** antimicrobial agent
-  Yellow phosphorus is **soluble** in carbon disulphide
-  Sodium metabisulphite formula = **Na₂S₂O₅**
-  Benzoyl peroxide = **keratolytic**
-  6% hydrogen peroxide = **20 volumes** of available oxygen
-  Benzoic acid is used in **skin conditions**

Quick Facts / त्वरित तथ्य



त्वरित तथ्य (हिंदी)

-  Sodium hypochlorite = **ऑक्सीडेटिव** एंटीमाइक्रोबियल एजेंट
-  Yellow phosphorus, carbon disulphide में **घुलनशील** है
-  Sodium metabisulphite का सूत्र = **Na₂S₂O₅**
-  Benzoyl peroxide = **केराटोलाइटिक**
-  6% हाइड्रोजन पेरोक्साइड = उपलब्ध ऑक्सीजन का **20 गुना** आयतन
-  Benzoic acid, **त्वचा** संबंधी स्थितियों में उपयोगी है



FIGHT INFECTIONS



CLEANSE & DISINFECT



HEAL & PROTECT



ANTIMICROBIALS

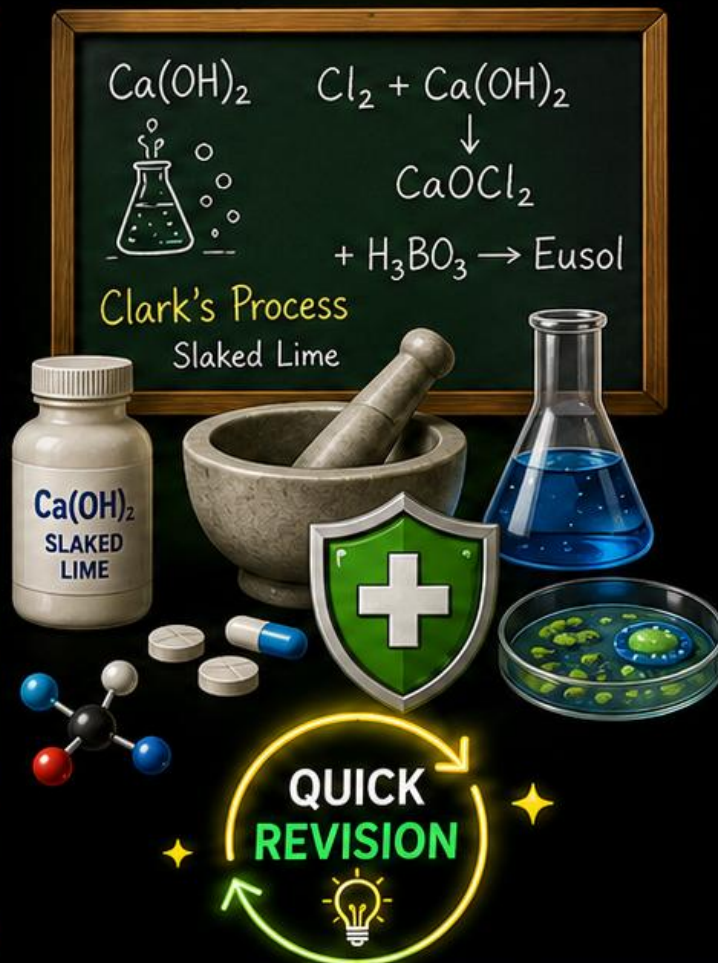


Quick Facts

PART 2

त्वरित तथ्य

- 7 **Calcium hydroxide** = slaked lime
- 8 **Chlorine + calcium hydroxide** = chlorinated lime
- 9 **Chlorinated lime + boric acid solution** = Eusol
- 10 **Clark's process** removes temporary hardness using slaked lime
- 11 **Potassium iodide in iodine solution** increases iodine solubility
- 12 **Calcium gluconate formula** = $C_{112}H_{22}CaO_{14}$



- 7 **Calcium hydroxide** = बुझा हुआ चूना (Slaked lime)
- 8 **Chlorine + calcium hydroxide** = क्लोरीनयुक्त चूना (Chlorinated lime)
- 9 **Chlorinated lime + boric acid solution** = Eusol
- 10 **Clark's process** अस्थायी कठोरता दूर करने के लिए बुझा हुआ चूना प्रयोग करता है
- 11 **आयोडीन सॉल्यूशन में पोटेशियम आयोडाइड, आयोडीन की घुलनशीलता बढ़ाता है**
- 12 **Calcium gluconate का सूत्र** = $C_{112}H_{22}CaO_{14}$



LEARN

Understand Today



REVISE

Remember Tomorrow



SUCCEED

Excel Always





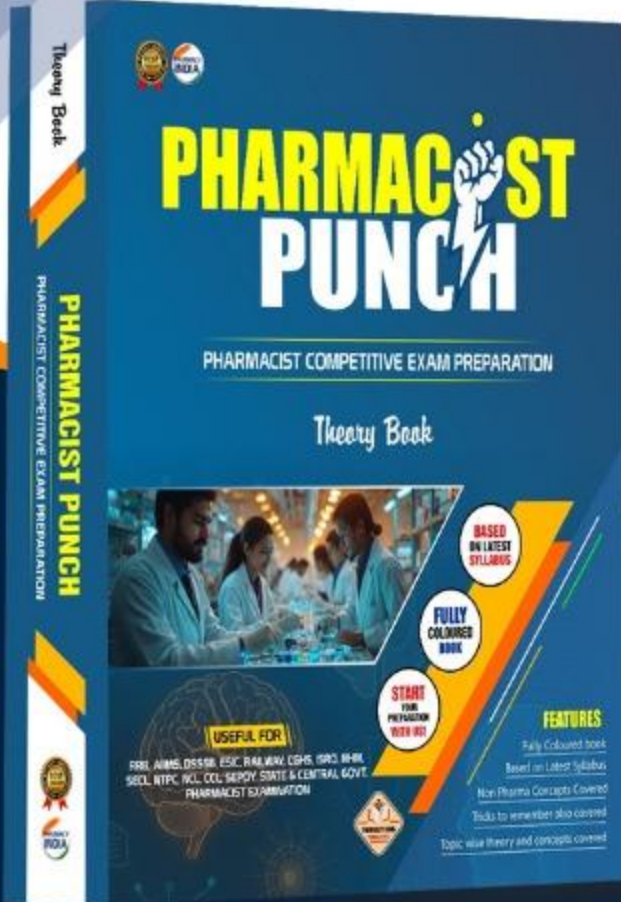
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PUNCH



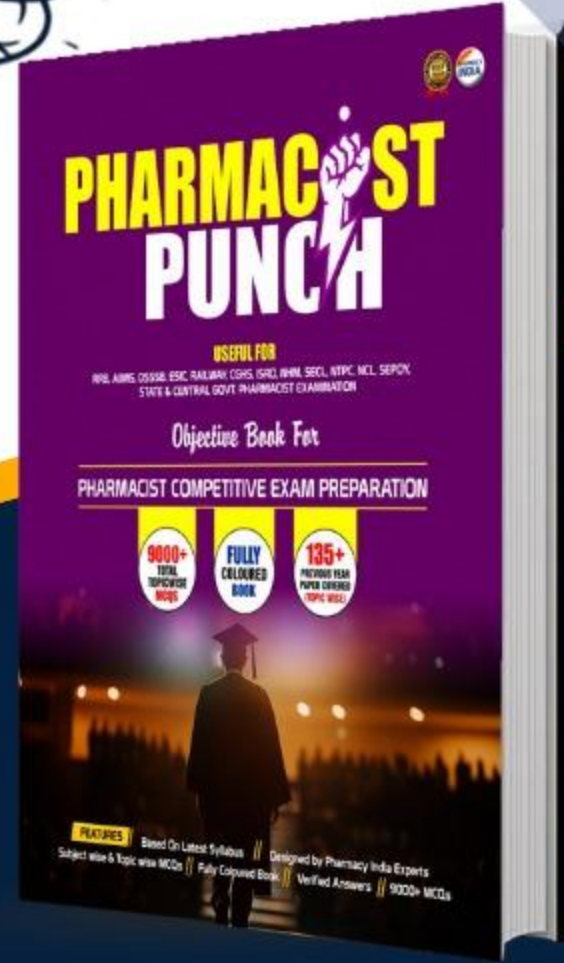
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