

SNS COLLEGE OF PHARMACY AND HEALTH SCIENCES



Affiliated To The Tamil Nadu Dr. MGR Medical University, Chennai

Approved by Pharmacy Council of India, New Delhi.

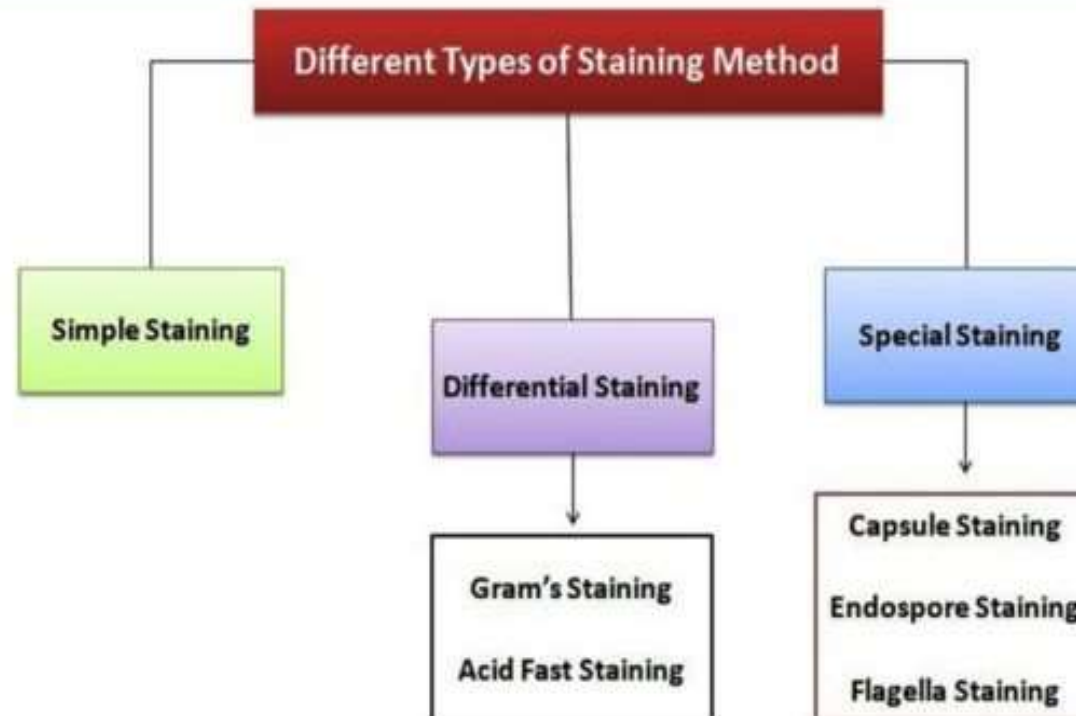
Coimbatore -641035

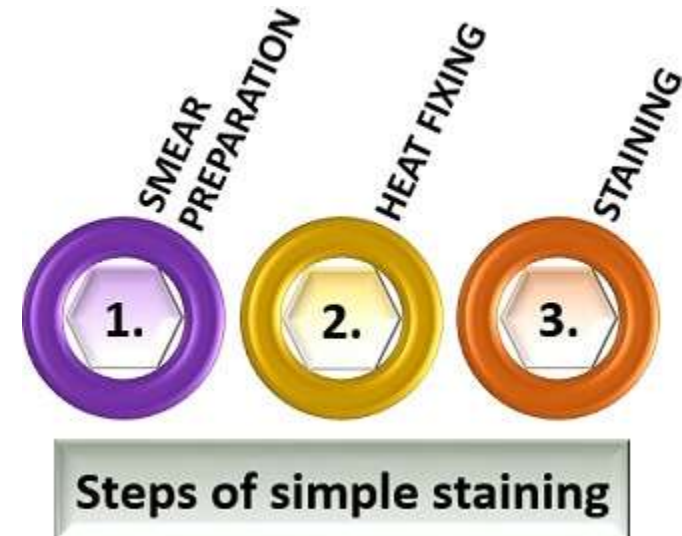
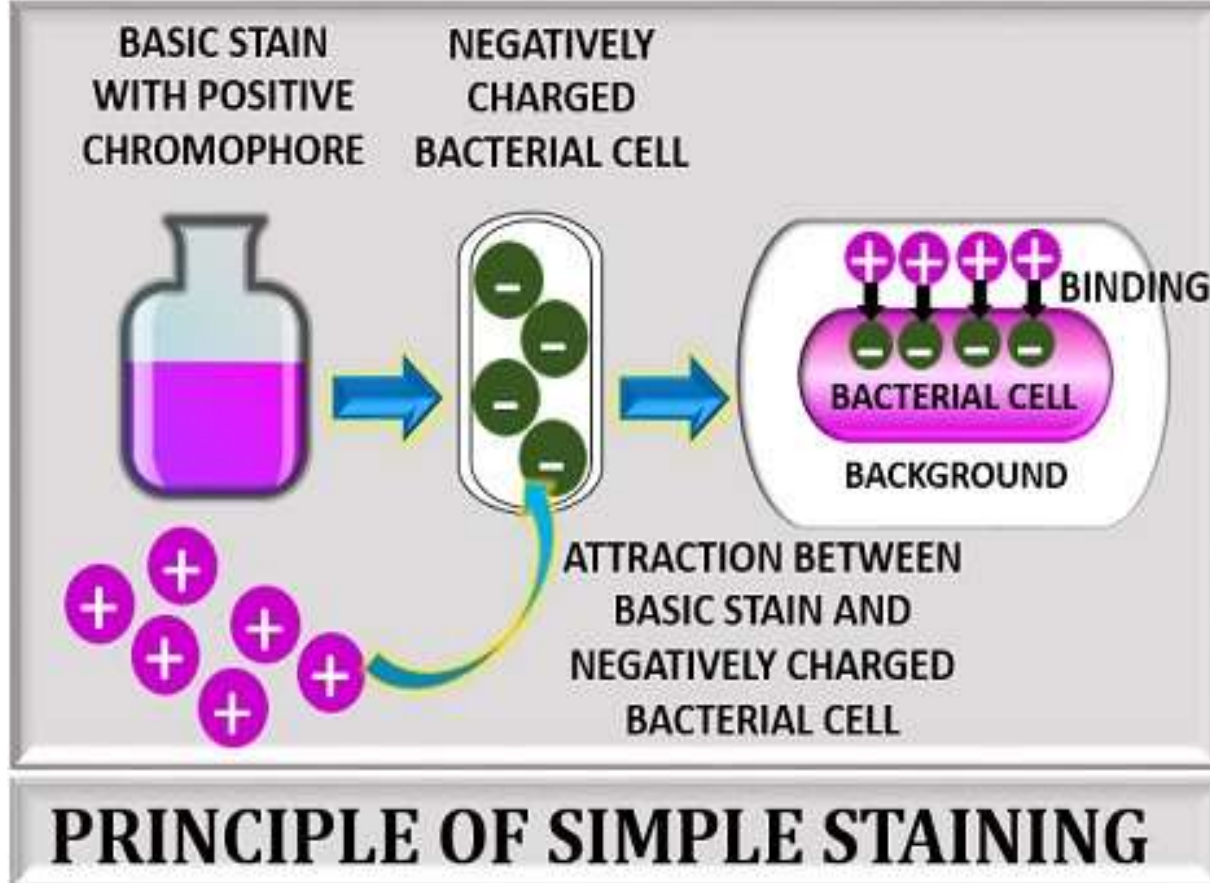
COURSE NAME : PHARMACEUTICAL MICROBIOLOGY(BP 303 T)

III SEM / II YEAR

UNIT 2 :IDENTIFICATION OF BACTERIA (STAINING AND BIOCHEMICAL)

Different Staining Methods used in Microbiology





SMEAR PREPARATION

1. Take clean glass slide



2. Add a drop of distilled water

3. Smear preparation



HEAT FIXING



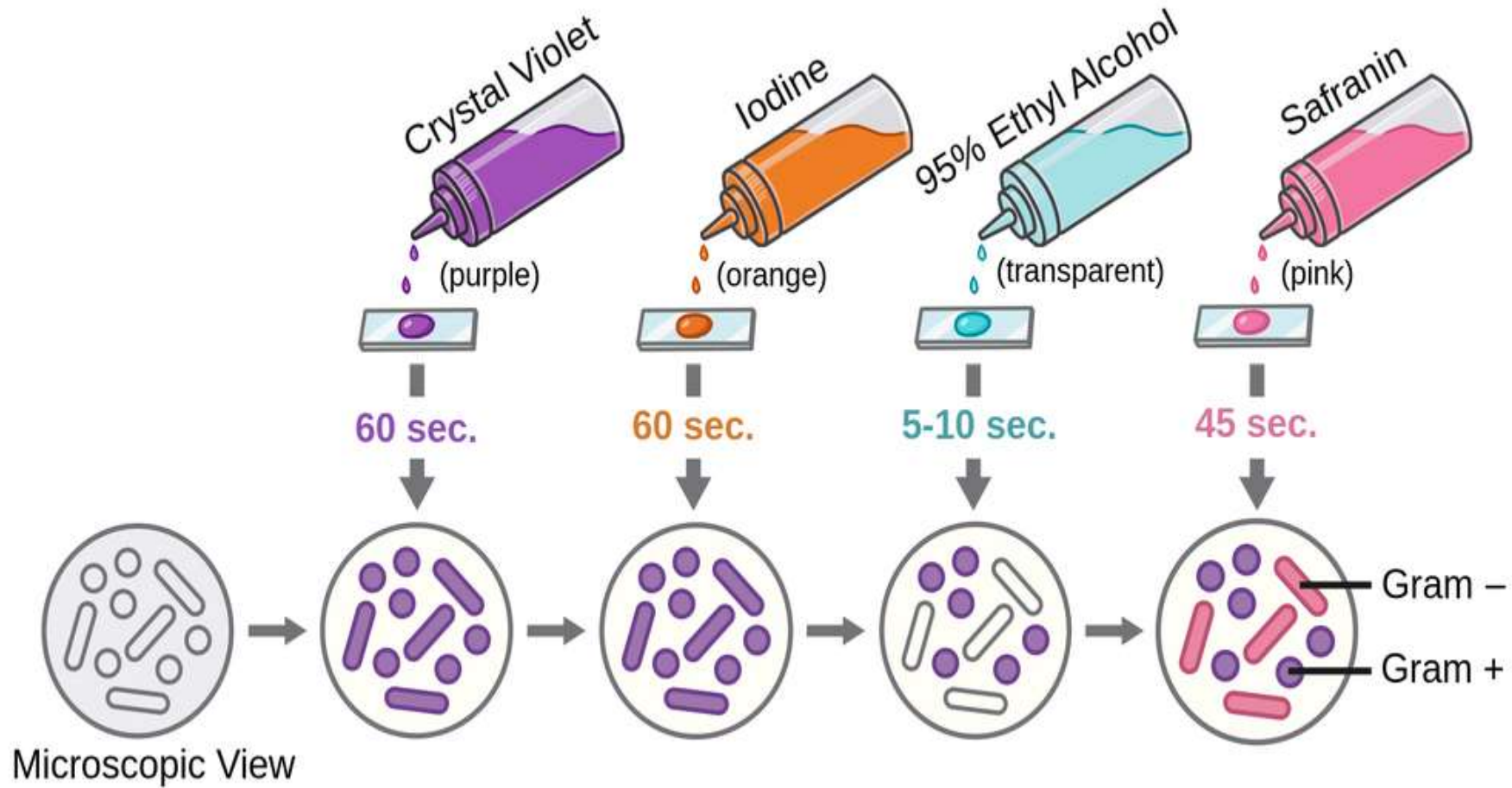
Heat fixing

Air drying

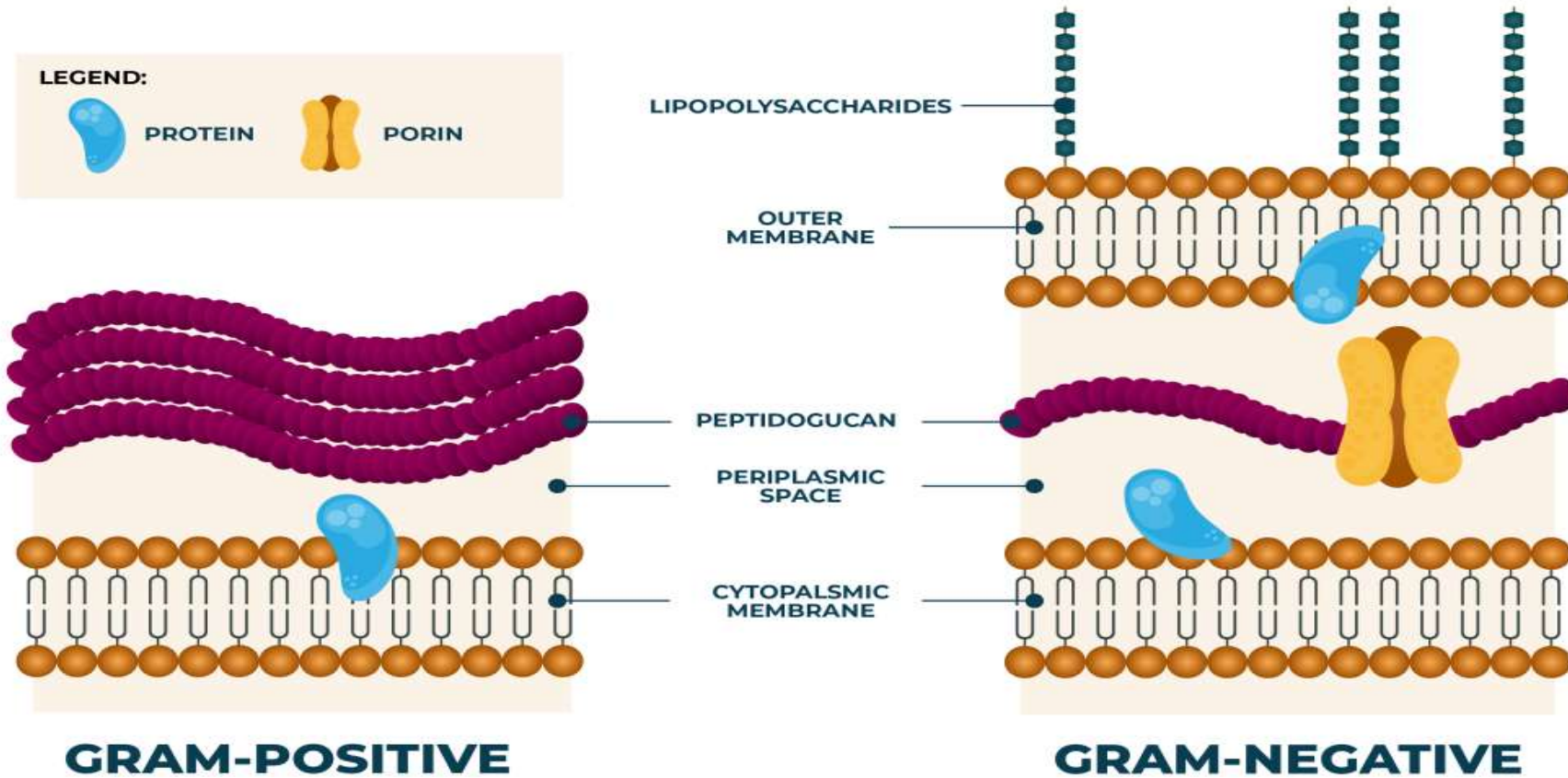




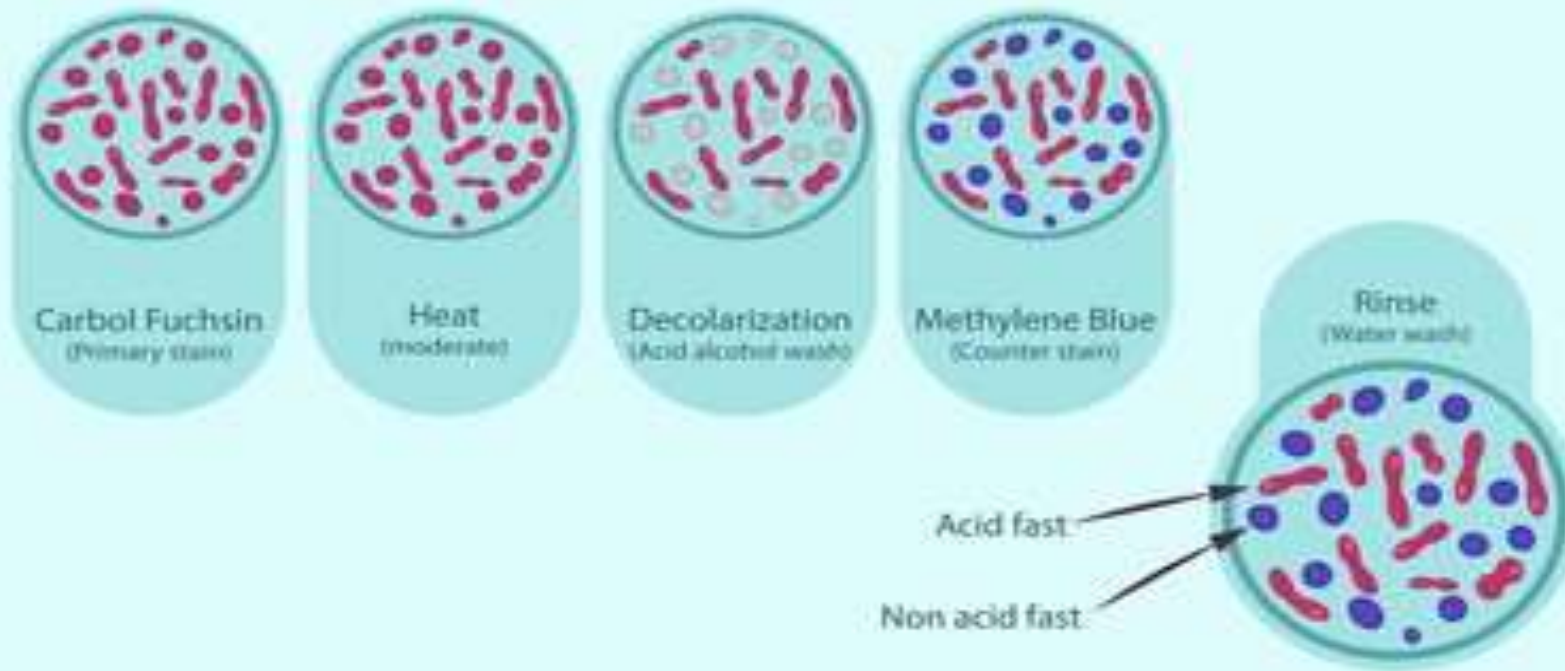
GRAM STAINING



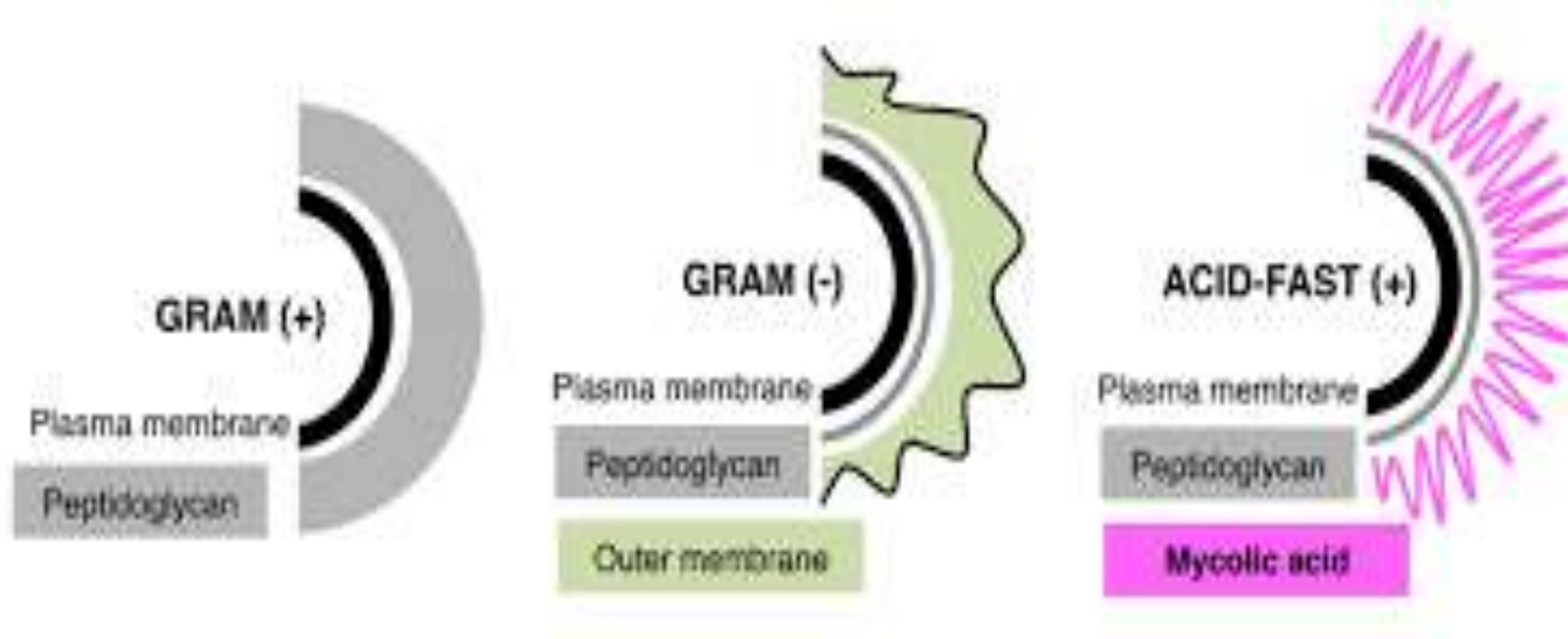
CELL WALL DIFFERENCE

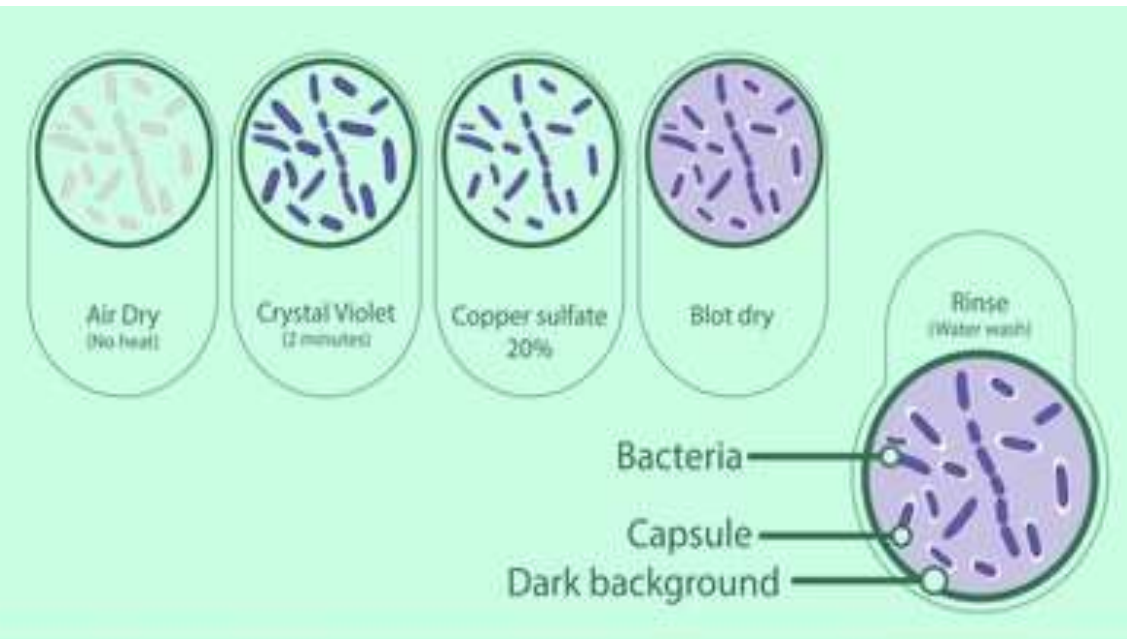


Acid Fast Staining



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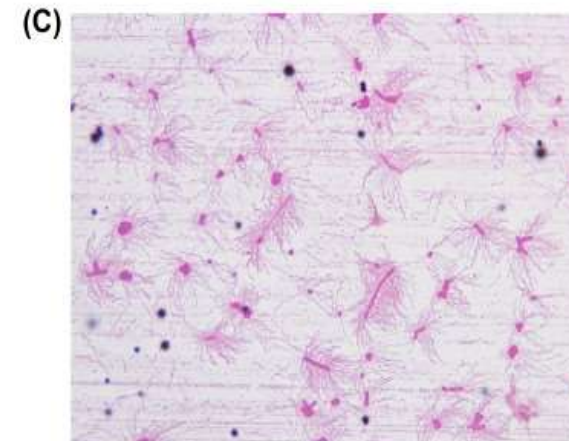
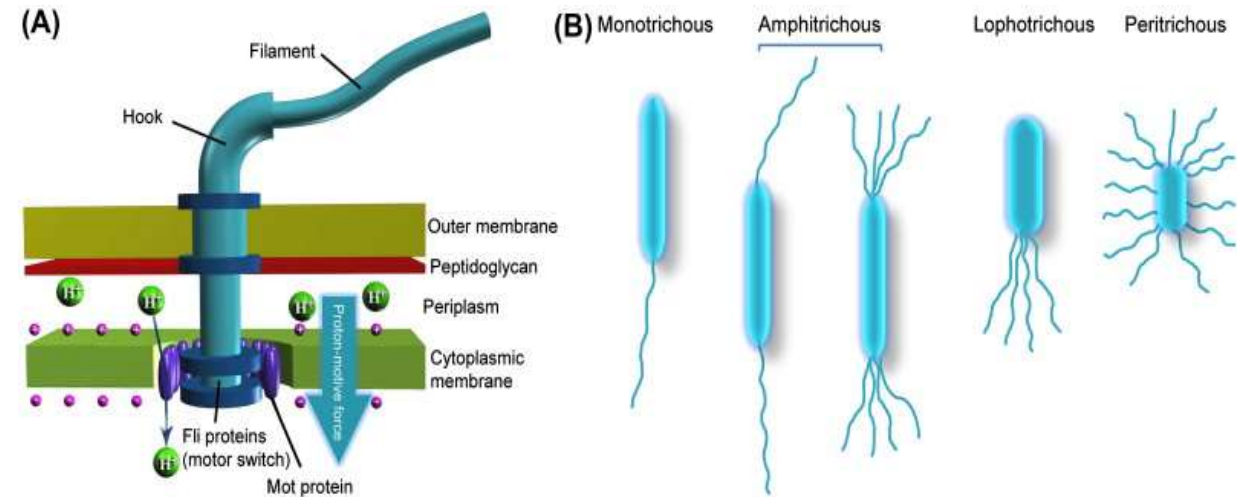




Capsule Staining

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FLAGELLA STAINING



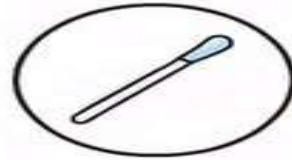
BIOCHEMICAL TESTS

FOR IDENTIFICATION OF PATHOGENS AND ANTIBIOTIC-RESISTANT BACTERIA



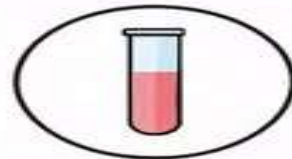
Catalase Test

DETECTS:
Enzyme catalase



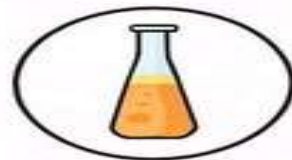
Oxidase Test

DETECTS:
Cytochrome c oxidase



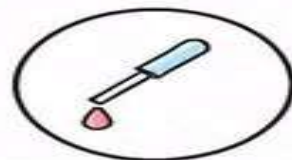
Indole Test

DETECTS:
Tryptophanase enzyme



Methyl Red & Voges-Proskauer (MR-VP) Tests

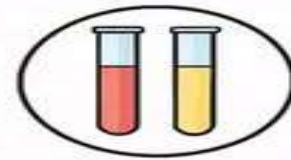
DETECTS:
Acid/gas
Fermentation between mixtures
& butylene glycol producers



Urease Test

DETECTS:
Urease enzyme

Methyl Red & Voges-Proskauer (MR-VP) Tests

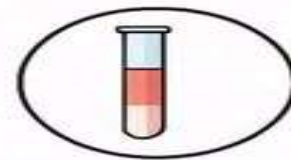


DETECTS:
Acid/gas
production
pathways

PURPOSE

Differentiate between mixed
acid fermenters &
butylene glycol producers

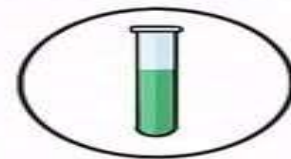
Triple Sugar Iron (TSI) Agar Test



DETECTS:
Urease
enzyme

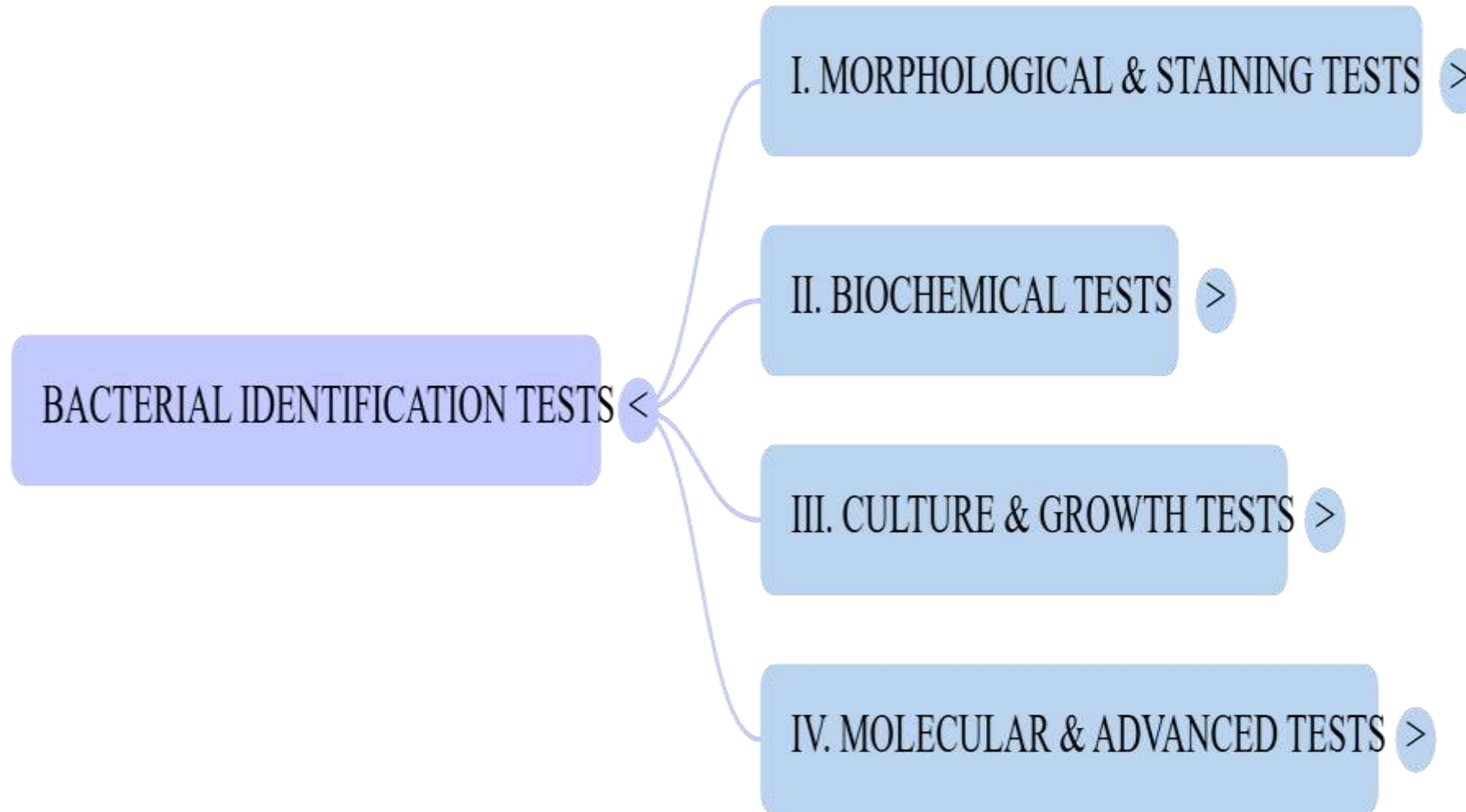
identifies
Proteus, *Klebsiella*

Citrate Utilization Test

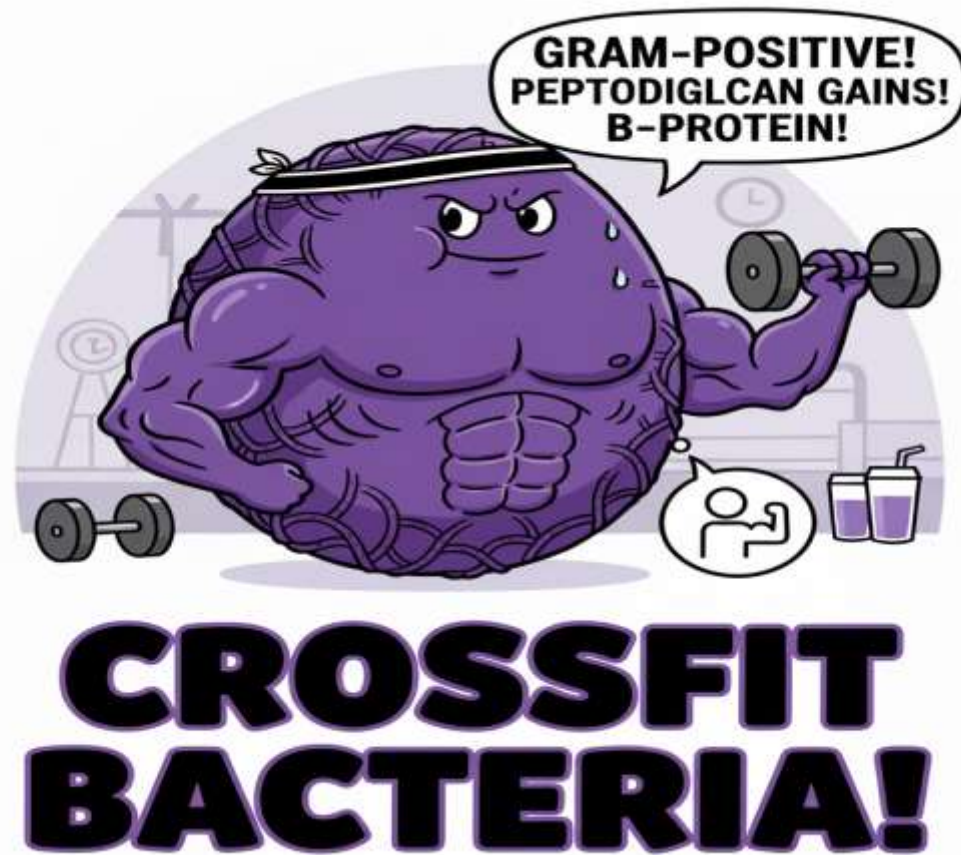


DETECTS:
Ability to use
citrate as sole
carbon source

Differentiates between
Enterobacteriaceae



ASSESSMENT QUESTIONS

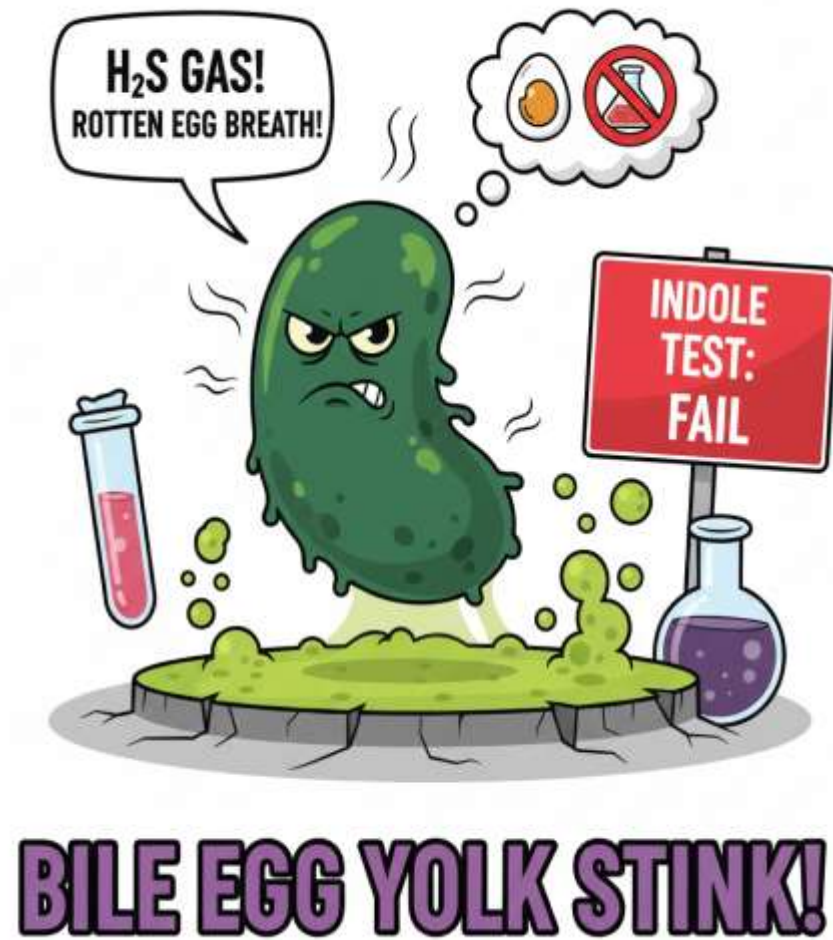


GUESS THE STAINING

ASSESSMENT QUESTIONS



what is the principle of catalase test ?



purpose of indole test ?



mention the importance of mycolic acid



The bacteria grow a giant colony in the middle of the vancomycin disk. What do you conclude?

Identifying Bacteria: A Design Thinking Journey

Empathy

Pain Points

faster results!

accurate identification

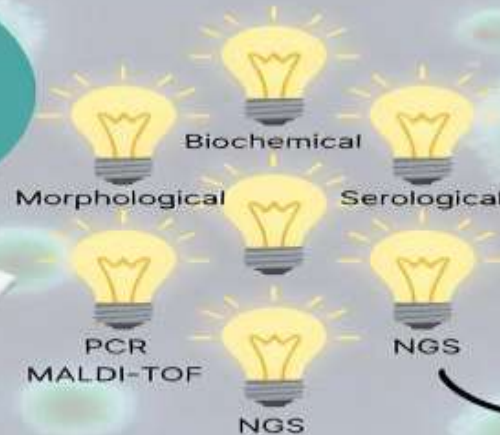


48hr delay

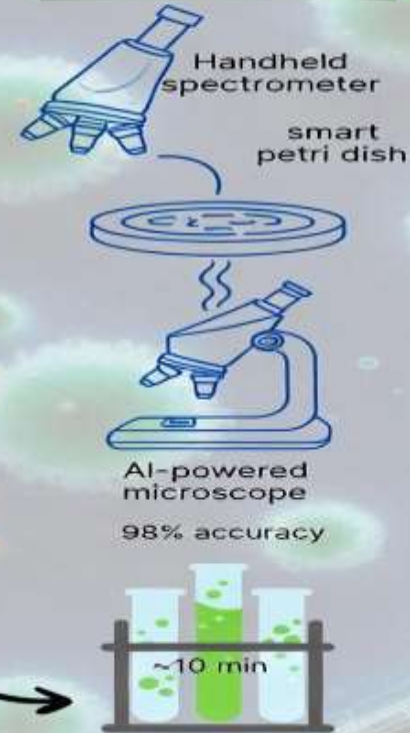
48hr duty

Define

How might we identify bacteria rapidly?



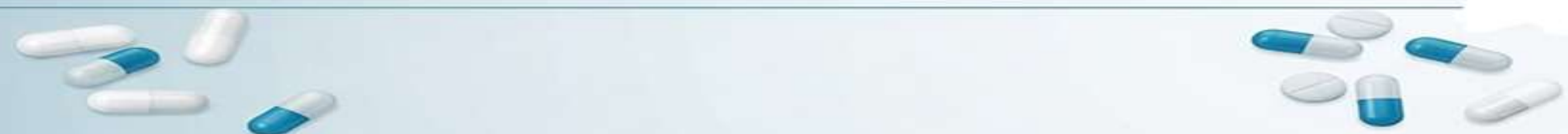
Prototype



Feedback

References

- 1. Hugo and Russell's Pharmaceutical Microbiology**
- 2. Pharmaceutical Microbiology" by Ravi Kumar Maddali,**
- 3. Lippincott Illustrated Reviews: Microbiology**
- 4. A Textbook of Pharmaceutical Microbiology by Apurba S Sastry**
- 5. Medical Microbiology by Anathanarayan**



Thank You

