King Saud University
Dept. of Bot. & Microbiology

General Microbiology

140 MIC

Lab 1 :

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Outlines

- General Lab. instruction
- Laboratory safety common symbols
- First aid
- Common laboratory apparatus
- Topics for this semester
- Marks division
- The examination timetable

For the safety of everyone working in the lab, it is important to following this lab rules :

- A lab coat should be worn during laboratory experiments .
- You will also be wearing gloves when handling microbes and dyes
- Contact lenses not to be worn in the laboratory
- No drink or food allowed inside the Lab.
- Do not place any personal items (bags, coats, extra books) on the lab bench.
- Don’t open the chemical near the fire.

General lab instruction

- wear properly during been in Microbiology lab.
- cell phone is not allowed
- you should clean your equipments and area before leaving lab or you will marked down
- Long hair must be tied back.
- Wearing properly shoes during lab time (sandals is not allowed).
- Chemicals take as much as the experiment need never take more than experiment procedure require; or even return unused material back the original containers

General lab instruction (cont.`)

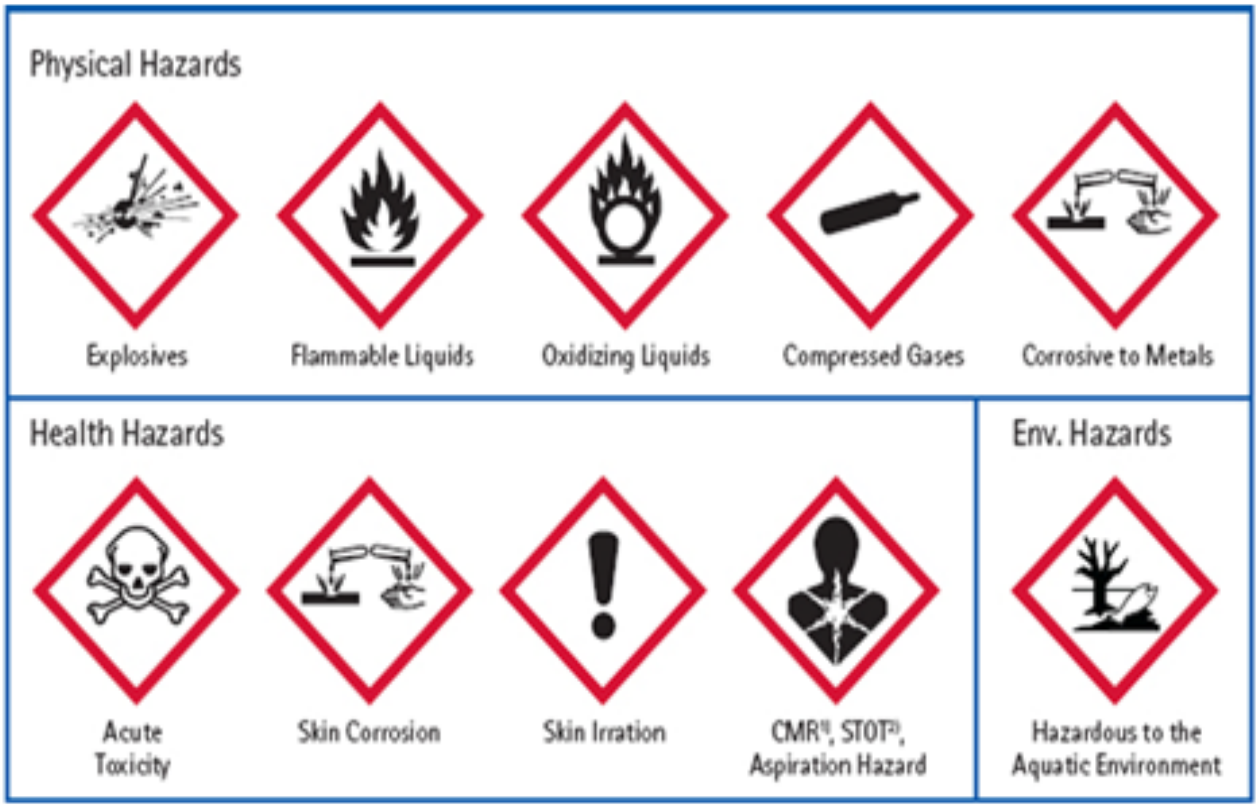
- Never removed any of chemical substance from their specific area.
- Carefully Follow the written experiment description
- Do the staining steps near the sink then open the water until the whole stain removed.
- Never through used matches, tissues, or cotton inside the sink!
- Washing hands before leaving lab is required
- Do not wearing the lab coat outside the lab.
- Disinfect the bench top with(alcohol 70% or dettol 50%) before and after each lab.

Laboratory safety common hazard symbols:

- Old hazard symbols:

Laboratory safety common hazard symbols (cont`)

New hazard symbols:



First aid

Chemical burns rinsed with water

- Immediately rinse with a large amount of cool water. Rinsing within 1 minute of the burn can reduce the risk of complications.
- Flush the area for at least 20 minutes.
  - Do not use a hard spray of water, because it can damage the burned area.
  - Have the person with the burn remove the chemical substance if he or she is able.
  - Put on gloves to protect yourself from the chemical, if you need to remove it.
- As you flush the area, take off any clothing or jewelry that has the chemical on it.
- If the area still has a burning sensation after 20 minutes, flush the area again with flowing water for 10 to 15 minutes.

Topics will be covered during this the semester (syllabus)

- Preparation of Culture Media
- Isolation of Microorganisms from Different Sources
- Purification techniques
- Identification:
  - ❖Studying Culture Characteristics to identify the microorganisms
  - ❖Microscopic Observation
  - ❖Staining Techniques
- Examples of the different microorganisms (Slides).
- Dilution technique to quantify bacterial cells in a given sample.

Marks division

2 marks for Quiz 1

2 marks for Quiz 2

2 marks for Activity

5 marks for Report

2 marks for Staining

5 marks for Final Practical

12 marks for Final

Microbiology

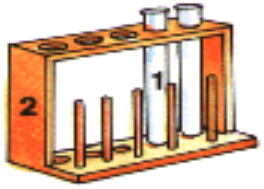
What is Microbiology?

- **Micro** - too small to be seen with the naked eye
- **Bio** - life
- **logy** - study of

(The science that studies micro-organisms)

Common Laboratory Apparatus

1.Test Tube
2.Test Tube Rack



Beaker

Reagent Bottle

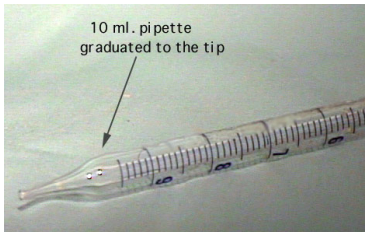
Bunsen Burner

Measuring Cylinder

Stand and Clamp

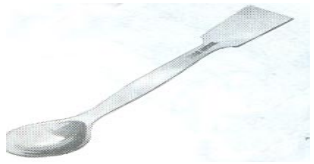
Common Laboratory Apparatus (cont`)

Pipette

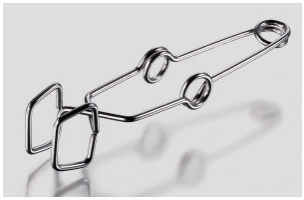


Burette

Spatula



Test tube holder



Water bath

MICROBIOLOGY EQUIPMENT

Autoclave

- Used to free the glassware,media,etc from microbes
- Uses steam and therefore is wet type of sterilization

Oven

- Used to free the glassware from microbes
- It uses dry air by heating

Incubator

- Provide suitable temperature for the growth of organism.

Inoculating loops

- Used for inoculating microbes in the liquid media.

Inoculating needles

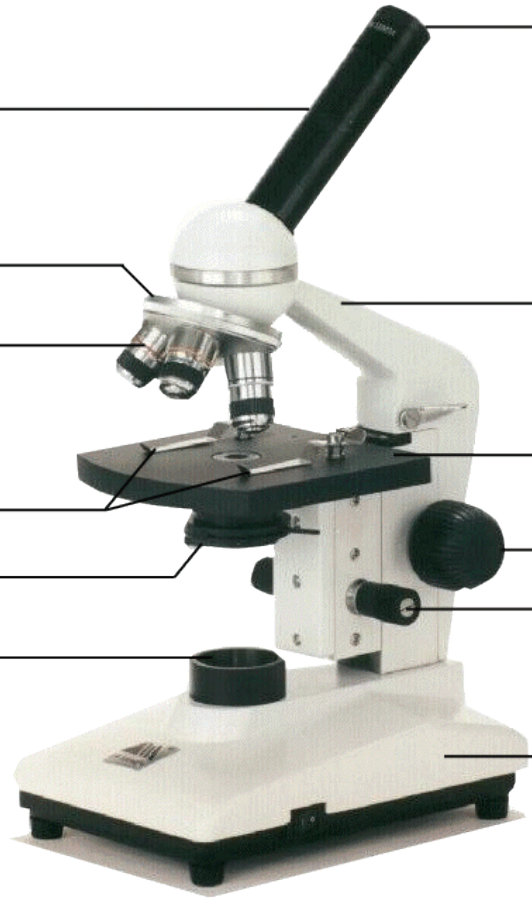
- Used for inoculating microbes in the solid media

Compound Light Microscope

- Used to observe very small organisms.

How to properly carry the microscope?

Microscope Parts



Using the Microscope

- Place the Slide on the Microscope
- Use Stage Clips
- Click Nosepiece to the lowest (shortest) setting
- Look into the Eyepiece
- Use the Coarse Focus
- Follow steps to focus using low power
- Click the nosepiece to the longest objective
- Do NOT use the Coarse Focusing Knob
- Use the Fine Focus Knob to bring the slide

Thanks…