King Saud University
Dept. of Bot. & Microbiology

General Microbiology

140 MIC

Lab 1 :

Amal Alghamdi, M.Sc. MMV.

المواضيع
Outlines

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

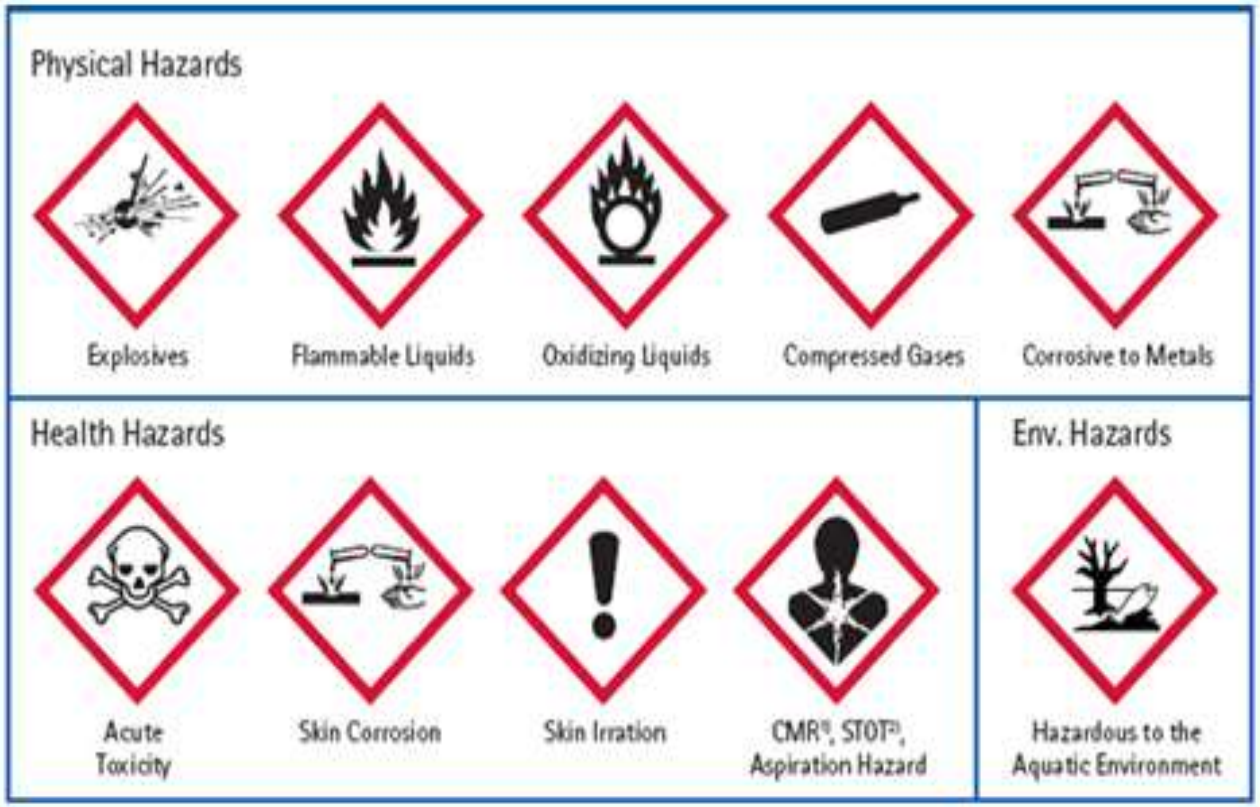
- Never removed any of chemical substance from their specific area.
- Carefully Follow the written experiment description
- Do the staining steps near the sink then open the water until the whole stain removed.
- Never through used matches, tissues, or cotton inside the sink!
- Washing hands before leaving 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.

Marks division

2 marks for Quiz 1

2 marks for Quiz 2

2 marks for Activity

7 marks for Report

5 marks for Final Practical

12 marks for Final

Microbiology

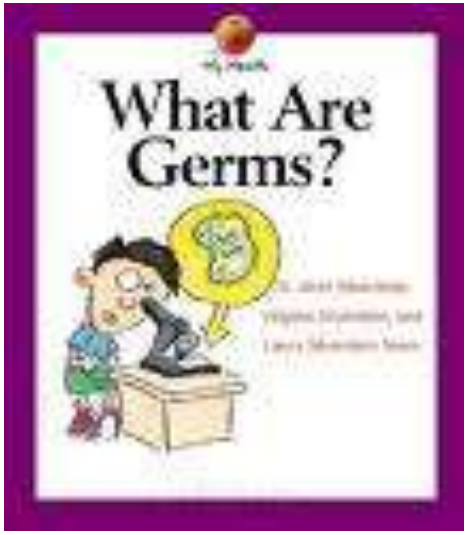
What is Microbiology?

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

(The science that studies micro-organisms)

Organisms included in the study of Microbiology

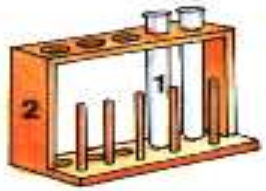
- Bacteria
- Algae
- Fungi
- Viruses
- Protozoa



Microorganisms - Microbes - Germs

Common Laboratory Apparatus

1.Test Tube
2.Test Tube Rack



Beaker

Reagent Bottle

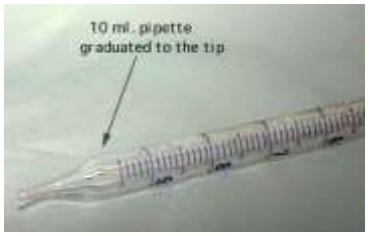
Bunsen Burner

Measuring Cylinder

Stand and Clamp

Common Laboratory Apparatus (cont`)

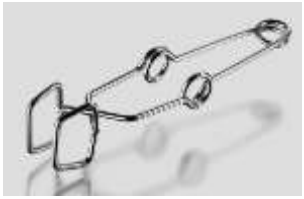
Pipette



Burette

Spatula

Test tube holder



Water bath

MICROBIOLOGY EQUIPMENT

Petri dish

A petri dish is a flat dish made of plastic or glass with a cover that is used to grow microorgansim

Incubator

- Provide suitable temperature for the growth of organism.
- **Incubator is a warm cabinet that you can set it's temperature to a proper temperature for**
- **microbes growth.**
- **a good temperature for most bacteria is About 35ºc and a good temperature for most fungi is 25°c.**

Hot air oven

- Used to free the glassware from microbes
- It uses dry air by heating
- This kind of dry heat sterilization is recommended when it is undesirable that steam make contact with the material to be sterilized. This is true for glassware's – glass petri plates, Pipettes as well as for substances like oil, powder, etc.

Autoclave

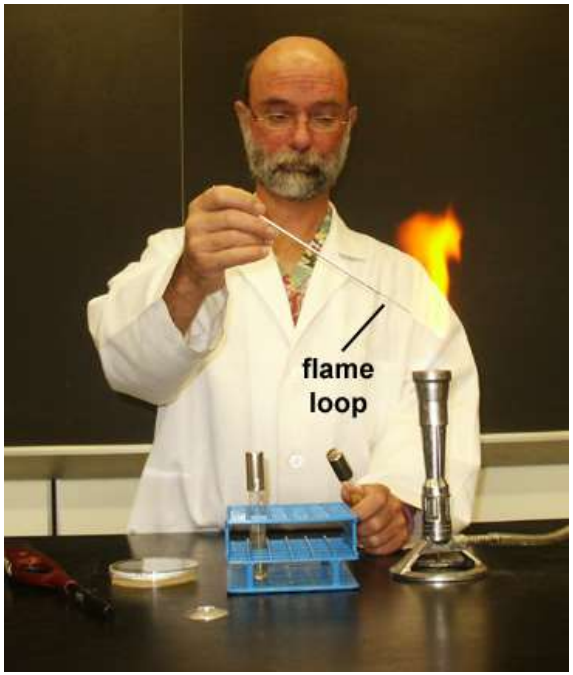
- Used to free the glassware, media, etc from microbes
- Uses steam and therefore is wet type of sterilization
- Autoclave sterilizes items by heating them with steam to a very high temperature (121 degrees° C/15 p.si).

The advantage of using an autoclave is that it can reach temperatures higher than boiling water alone, so it can kill not only bacteria

but also bacterial spores, which tend to be resistant

Bunsen burner

- Bunsen burner is produces gas flame which used for heating, sterilization (inoculating loop)



Inoculating loops

- Used for inoculating microbes in the liquid media.

Inoculating needles

- Used for inoculating microbes in the solid media

Other glassware

Test tube

flask

Microscope

- Used to observe very small organisms

ss

With a binocular microscope, adjust oculars for both eyes!

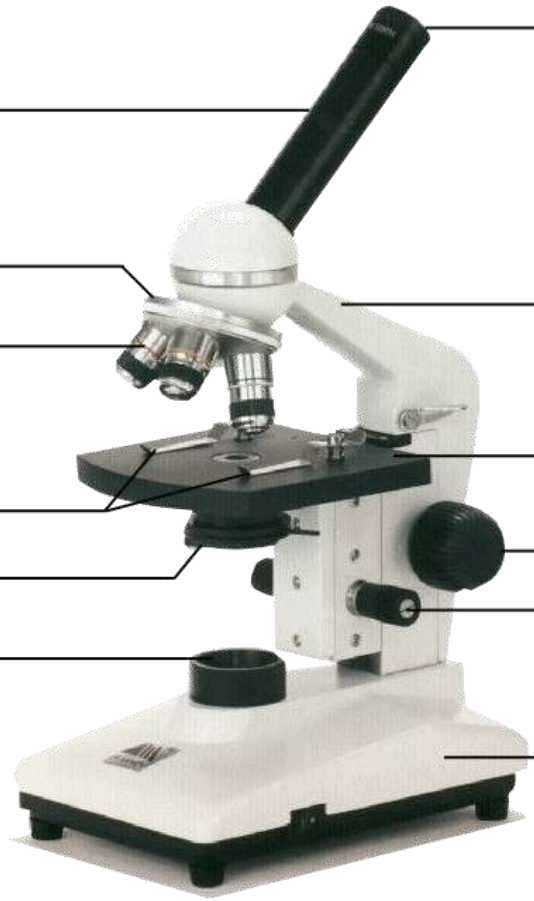
Don't shut one eye while observing under the microscope!

Microscope Care

- Always carry with 2 hands
- Only use lens paper for cleaning
- Do not force knobs
- Always store covered

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...