Welcome to this E learning session. The program is

Bachelor of Science. First year subject is

microbiology under microbiology. The paper is

introduction and scope of microbiology. Paper code

is MIG101.

The title of the unit that we are covering under this paper is

Unit 3 Microscopy. Under that the module name is simple

staining and negative staining.

The outline is as follows under the. In this

module we are going to study types of staining. Under this we

will study simple staining and

negative staining. At the end of this module, the students

will be able to explain the types of staining techniques.

Now today we're going to see types of staining. These are the

different types of trainings which we are going to cover

under this unit. Simple staining, which is also known as

monochrome or positive staining. Negative staining, which is also

known as relief staining and gram staining, which is an

example of differential staining. So out of this three,

the 1st two we are going to cover under this unit.

Simple staining, which is also known as monochrome or positive

staining. Now it is known as positive monochrome staining,

because only one dye or stain issued in this particular

technique. Now in simple staining, basic dyes like

methylene blue, crystal, Violet safranin, malachite green etc. I

used. Now the bacterial. We know that the bacterial cell wall has

net negative charge on the surface due to the presence of

carboxyl group. Now the carboxyl group that is the COOH group

undergoes ionization to produce. Oh oh minus and gives out the

edge plus I own because of thisCo minus the cell surface has

negative charge. And the H plus ion is then replaced by

positively charged ions, likeany plus or K plus.

Now. Basic dyes such asmethylene blue is available as

its salt chloride. As can beseen Embl where in NB carries

that is methylene blue. The daypart carries the positive

charge and the chloride ion carries the negative charge. Now

Ionic bond is formed between the coloured ion and the

bacterial cell wall. That is when a bacterial cell comes in

contact. With the salt chloride of methylene blue, the bacterial

cell wall binds to the methylene blue and the any plus ion binds

with CL minus to give any CL.

Now the advantage of this methods that this method is used to

study the morphological characteristics of an Organism

and also to study the shape, the size and the arrangement of

cells of various bacteria.

This this is the protocol in which the smear is prepared on a

clean grease free slide and itis heat fixed.

Then the smell is flooded with the stain, the time for which

the stain is scaped depends or differs from stain to stain.

Then the slide is washed, drained, blotted an aide.

Write an after putting a drop of Cedar wood or paraffin

oil. It is observed under the oil immersion lens.

The second type of staining that we will cover under this module

is negative staining, which is also known as relief staining.

Now relief staining it is called because. In this particular

technique only the background is stained, but the cells remain

unstained. Now in this technique, as acidic dyes like

in India ink, Congo, red, EOSin etc are used.

Now negatively charged.

Stain does not react with the cell wall. As a result, the

bacteria appears colorless against the dark background.

Now the advantage of this technique is that it does not

receive any vigorous chemical or physical treatment as in the

case of monochrome staining.

This is the protocol of negative staining. A smear is

prepared on a clean grease.The slide and is heat fixed.

A drop of sin is placed at one edge of the slide and by means

of another slide. It is then spread over the smear.

It is allowed to dry and after drying, a drop of Cedar wood or

paraffin oil is put.

An after a dry. It is then observed under the oil immersion

lens. As we can see in this particular slide, the diagram of

negative staining wherein we can see the negatively stained

bacilli. That is, the Organism is colorless

against the dark background.

This is a diagram of monochrome staining wherein we can see the

Organism that is bacillus.Megaterium is stained by only

one stain that is used.

Hence it is known as monochrome staining. These

are the references.

Thank you.