

# **Laboratory**

**Community Medicine Department**

**Government Medical College, Surat**

## Cupboard-1

Serial No.	Item name	Pieces
<b>Rack-1</b>		
1.	Slide Box	13
2.	Test Tube Box	2
<b>Rack-2</b>		
3.	Small Funnel	14
4.	Big Funnel	7
5.	Petri Dish	35
6.	Beaker (50 ml)	3
7.	Beaker (100 ml)	1
8.	Test Tube (100 ml)	4
9.	Test Tube (10 ml)	9
10.	Measuring Cylinder (50 ml)	6
11.	Flask (50 ml)	5
12.	Plastic Funnel	1
13.	Test tube box	1
<b>Rack-3</b>		
14.	Test Tube Box (Small)	2
15.	Test Tube Box (Big)	1
16.	Cover Slip Box	2
17.	Tray with Miscellaneous Items	1
18.	Chloroscope Box	15
19.	Magnetic Stirrer	1
<b>Rack-4</b>		
20.	Burette (25 ml)	5
21.	Magnifying Glass	2
22.	Unidentified Thing	2
23.	Flask (250 ml)	5
24.	Test Tube (50 ml)	24
25.	Round Bottom Flask (500 ml)	1
26.	Silicon Bowl	5
<b>Rack-5</b>		
27.	Measuring Cylinder (250 ml) (Borosil)	5
28.	Measuring Cylinder (250 ml) (Plastic)	1
29.	Measuring Cylinder (500 ml)	7
30.	Measuring Cylinder (1000 ml)	5
31.	Measuring Cylinder (100 ml)	1
32.	Measuring Cylinder (50 ml)	2
33.	Measuring Cylinder (25 ml)	4

34.	Test Tube (100 ml)	4
35.	Beaker (2000 ml)	3
36.	Beaker (100 ml)	3
37.	Flask (1000 ml)	5
38.	Flask (500 ml)	10
39.	Round Bottom Flask (1000 ml)	2
40.	Round Bottom Flask (2000 ml)	1
41.	Round Bottom Flask with Nozzle (500 ml)	2
42.	Unidentified Things	1

## Cupboard-2

<b>Sr. No.</b>	<b>Item name</b>	<b>Pieces</b>
1.	Dissecting Microscope	32

### Cupboard-3

<b>Serial No.</b>	<b>Item name</b>	<b>Pieces</b>
<b>Rack-1</b>		
1.	Test tube box	1
2.	Jar box	1
<b>Rack-2</b>		
3.	Glassware tray	2

## Books

<b>Serial No.</b>	<b>Name of book</b>	<b>No. of pieces</b>
1	Pathology laboratory report form book	8
2	Biochemistry request form book	1
3	Microbiology laboratory report form book	1
4	Pathology laboratory register	3
5	Primary Health Center laboratory Manual	1
6	Community Health Center laboratory Manual	1
7	Microscope (Labo Med) User Manual	2
8	Prevention and Control of Fluorosis in India	1
9	Water quality & Defluoridation technique	1
10	Laboratory Manual	1
11	Manual for monitoring of Iodine Deficiency Disorders	1
12	Basic Malaria Microscopy	1

## Stations

<b>Serial No.</b>	<b>Name of station</b>
1	Microscopy
2	Estimation of Chlorine demand from drinking water
3	Determination of Chlorine
4	Estimation of Iodine and Fluoride in water using Ion specific electrodes
5	Entomology and Vector bionomics
6	Salt-sugar solution
7	Salt Testing for Iodine
8	Screening for cervical cancer
9	Estimation of available calcium & Magnesium in soil
10	ZN staining & Malaria staining
11	Standards of drinking water quality
12	Instruments-Incubator, Water bath, Magnetic stirrer, Illuminator

## Station 1: Microscopy PSMP and AFB

SLO: At the end of session, student should be able to

1. Prepare blood smear to identify malarial parasite.
2. Identify malaria parasite and identify p. vivax and p. falciparum.
3. Prepare sputum smear and examine it.
4. Identify Acid fast bacilli on smear.

Materials used: Microscope, slides, samples, needles, cotton, containers etc.

Method of teaching: Demonstration, Discussion on identifying the differential features of p.vivax and p. falciparum, Discussion on identifying the AFB on smear, fine and coarse adjustment

Method of assessment: viva questions, short questions

Questions:

1. How do you prepare blood smear on slide?
2. What are the differentiating features of p. vivax and p. falciparum.
3. What are the physical characteristic features of Acid fast bacilli?





## Station 2: Estimation of chlorine demand in water

SLO: At the end of session, student should be able to

1. Know use of Horrock's Apparatus
2. Estimate the dose of bleaching powder to disinfect the water.
3. Demonstrate the procedure of estimation of Chlorine demand of drinking water sample.

Materials used: Horrock's apparatus, Water sample

Method of teaching: Demonstration, Explaining the procedure of staining, Discussion on identifying the differential features of p.vivax and p. falciparum, Discussion on identifying the AFB on smear

Method of assessment: Viva questions, short questions

Questions:

1. What is the interpretation of the test?
2. What is the value of free residual chlorine?
3. How can you estimate the chlorine demand of drinking water?



### Station 3: Check residual chlorine in chlorinated water sample

SLO: At the end of session, student should be able to

1. Know different method of chlorination.
2. Know the use of Chloroscope.
3. Define and explain the break point chlorination, super chlorination, chlorine demand and free residual chlorine.
4. Know the value of free residual chlorine.

Materials used: Chloroscope

Method of teaching: Demonstration, Explaining the procedure of staining, Discussion on identifying the differential features of p.vivax and p. falciparum, Discussion on identifying the AFB on smear

Method of assessment: Viva questions, short questions, short notes

Questions:

1. Define break point chlorination and free residual chlorine.
2. What is the value of free residual chlorine?
3. How can you estimate the chlorine demand of drinking water?
4. What is the interpretation of the test?



## Station 4: Estimation of Iodine and Fluorine in water

SLO: At the end of session, student should be able to

1. Know normal value range of Iodine and Fluorine in water
2. Enumerate the diseases caused by deficiency and excess of Iodine and fluorine.
3. Able to perform testing of Iodine and Fluorine in water sample.

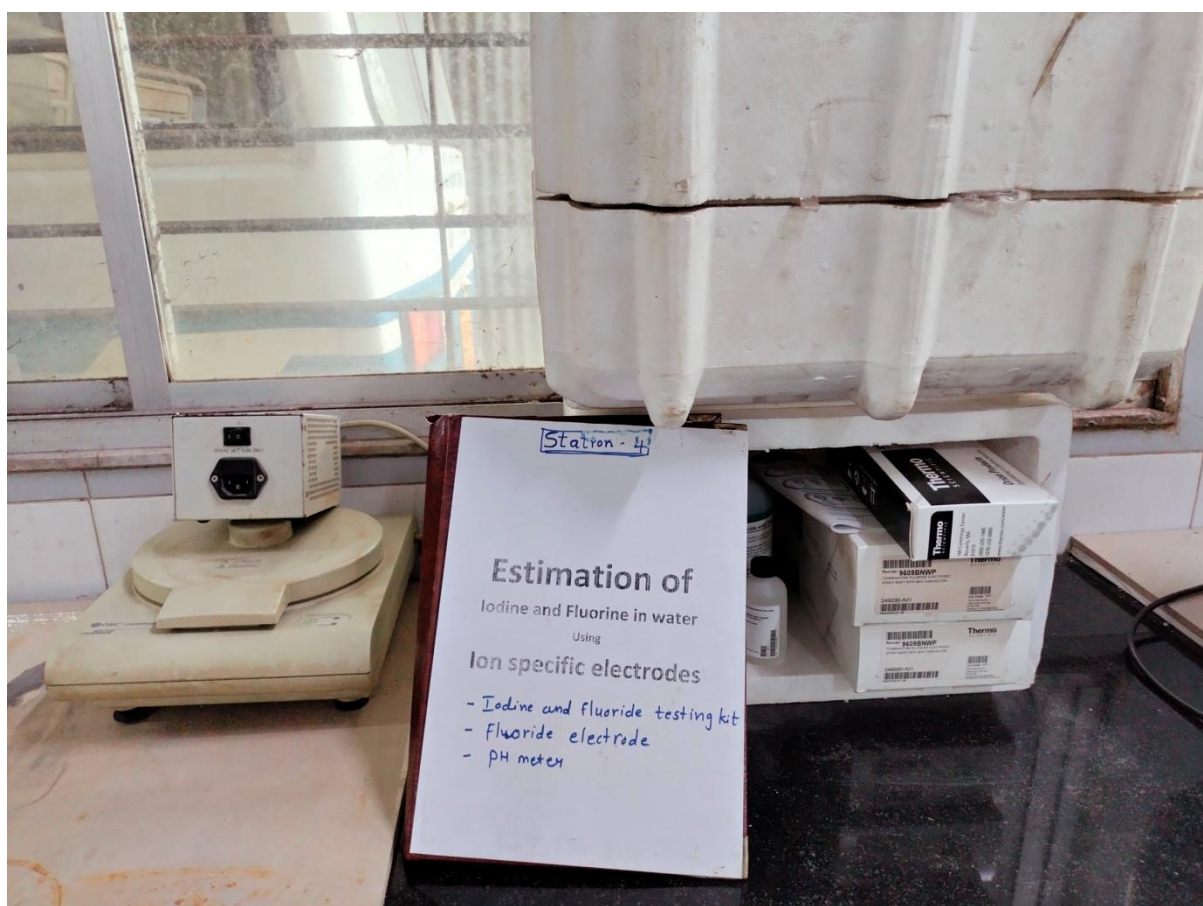
Materials used: Iodine and Fluorine Testing kit, fluoride electrode, pH meter

Method of teaching: Demonstration

Method of assessment: Viva questions, short questions, observing the procedure

Questions:

1. What is the normal value of Iodine and fluorine in drinking water?
2. Which diseases are caused by deficiency of Iodine?
3. Explain- 'Fluorine-Double edged sword'



## Station 5: Entomology and vector bionomics

SLO: At the end of session, student should be able to

1. Identify different vectors and their species
2. Know diseases transmitted by different vectors
3. Understand the vectors interaction with the environment

Materials required: slides of mosquitos, housefly, sandfly, tick, mite and flea, magnifying class.

Method of teaching: Demonstration, discussion

Method of assessment: Viva questions, short questions

Questions:

1. Identify different vectors of medical importance
2. Which diseases are transmitted by rat flea/any vector?
3. How can we control rat flea/ any vector?



## Station 6: Home Made ORS

SLO: At the end of session, student should be able to

1. Know use of Home Made ORS
2. Prepare home Made ORS

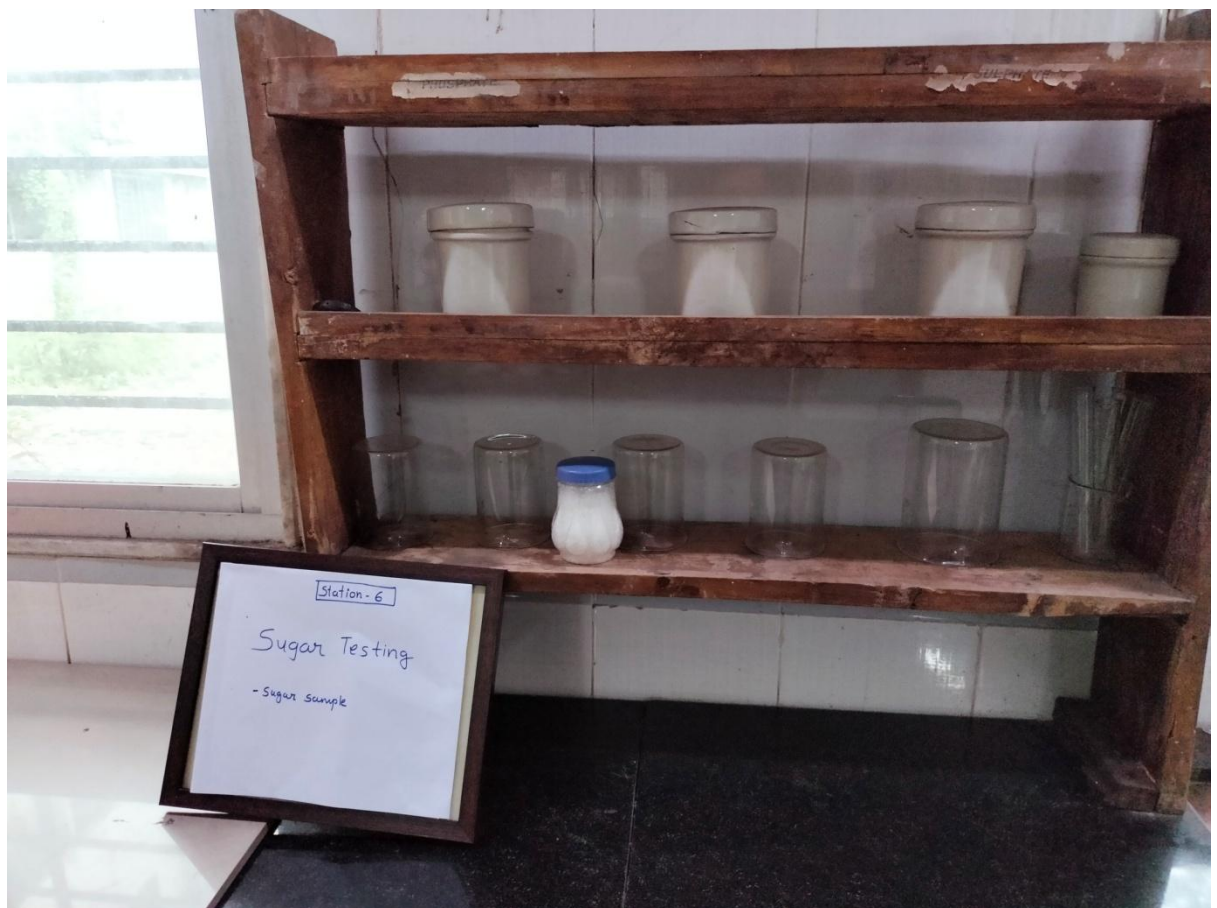
Materials used: Sugar, salt, clean drinking water, spoon

Method of teaching: Demonstration, explanation

Method of assessment: Viva questions, short questions, demonstration

Questions:

1. What is the composition of Home Made ORS?
2. What is the composition of WHO low Osmolarity ORS?
3. What are the indications of use of Home Made ORS?



## Station 7: Estimation of Iodine in salt

SLO: At the end of session, student should be able to

1. Know the value of iodine in salt at consumer and production level.
2. How to perform test and interpret it?
3. Describe Iodine Deficiency Disorders.

Materials used: Iodine testing kit, salt sample.

Method of teaching: Demonstration, explanation

Method of assessment: Viva questions, short questions, demonstration

Questions:

1. What is the recommended value of Iodine in salt at consumer and production level?
2. What is RDA for Iodine in adults, pregnancy and lactation?
3. Describe Iodine Deficiency Disorders and measures to prevent them.



## Station 8: Screening for Cervical Cancer

SLO: At the end of session, student should be able to

1. Know the method of cervical Cancer screening
2. Able to identify pathology by using microscope
3. Know the epidemiology of Carcinoma Cervix
4. Know the preventive measures for Ca. Cervix.

Materials used: Prepared slide, binocular microscope

Method of teaching: Demonstration, explanation

Method of assessment: Viva questions, short questions, demonstration

Questions:

1. Which method is commonly used to screen Cervical Cancer?
2. Give identification features of Carcinoma on slides.
3. What is the causative organism for Carcinoma Cervix?
4. Which vaccines are available for Ca. Cervix?



## Station 9: Estimation of available Calcium and Magnesium in soil

SLO: At the end of session, student should be able to

1. Know how to perform the test to check quantity of salts
2. Know the public health importance of Calcium and magnesium.

Materials used: Soil sample, soil testing kit

Method of teaching: Demonstration, Discussion

Method of assessment: viva questions, short questions, observing the procedure

Questions:

1. How will you check the quantity of available Calcium and Magnesium in soil?
2. How will you use soil testing kit?
3. What is the public health importance of Calcium and Magnesium?





## Station 10: Malaria stain and ZN stain

SLO: At the end of session, student should be able to

3. Prepare blood smear to identify malarial parasite.
4. Prepare sputum smear to identify acid fast bacilli.
5. Demonstrate malaria staining and ZN stain.
6. Know the use of stain and reagents.

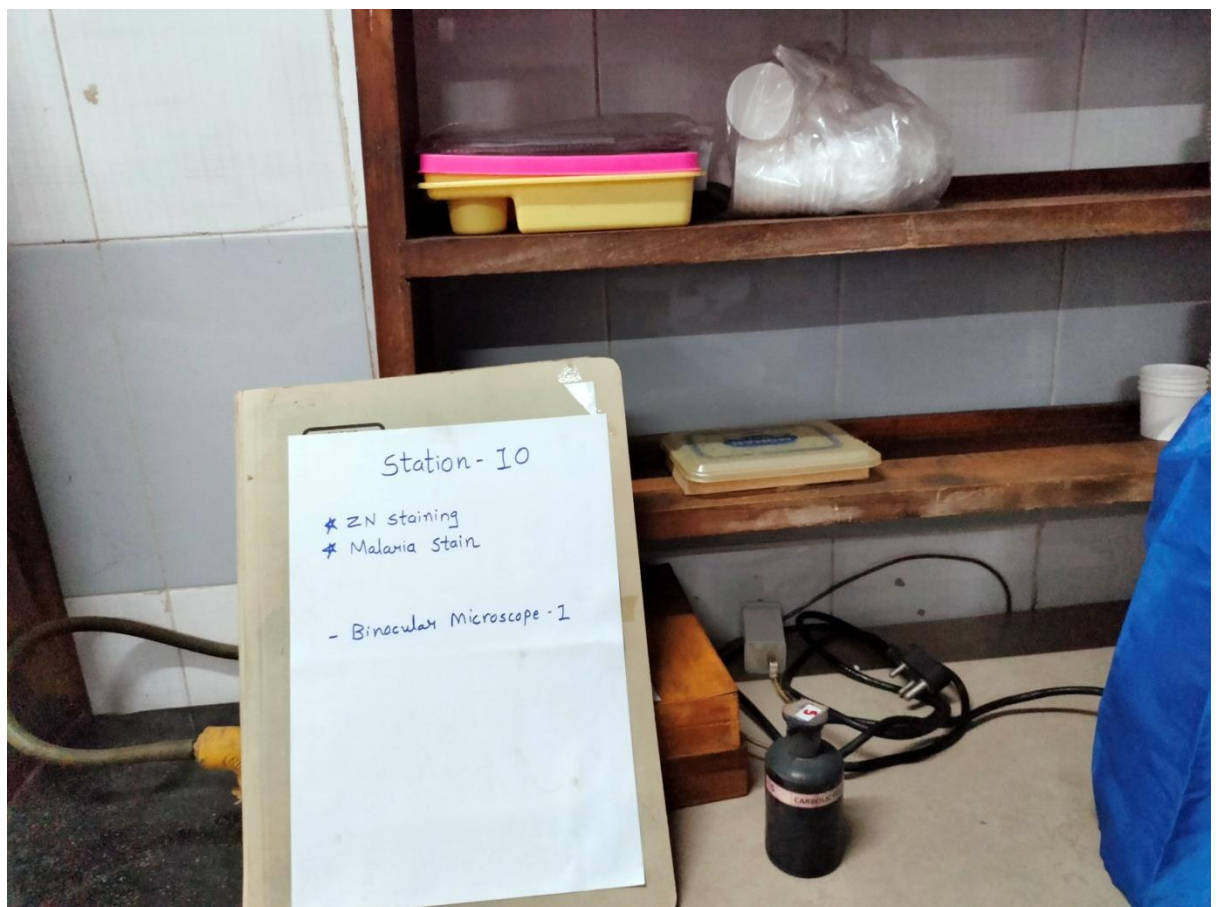
Materials used: Slides, stains, reagents, samples, needles, cotton, containers etc.

Method of teaching: Demonstration, Explaining the procedure of staining

Method of assessment: viva questions, short questions, observing the procedure

Questions:

1. Which stains are used to stain malaria parasite and Acid Fast bacilli?
2. How will you stain the slide for blood and sputum sample?
3. What are the mechanism of above reagents and stains?



## Station 11: Checking standards of drinking water quality

SLO: At the end of session, student should be able to

1. Know the WHO criteria for drinking water quality
2. Describe acceptability, microbiological, chemical and radiological aspects
3. Describe in detail chemical aspects of drinking water quality
4. Perform the test to quantify major minerals in water

Materials used: Water testing quality, water filters, water sample

Method of teaching: Demonstration, Explaining the procedure of testing, discussion

Method of assessment: viva questions, short questions, observing the procedure

Questions:

1. What is the WHO criteria for drinking water quality?
2. How will you check quantity of minerals in drinking water?
3. Describe chemical aspects of drinking water.



## Station 12: Incubator

SLO: At the end of session, student should be able to

1. Know the mechanism of incubator and water bath.
2. Know the procedure of incubation.
3. Which samples or chemical can be incubated.

Materials used: Incubator, water bath, magnetic stirrer, illuminator

Method of teaching: Demonstration, Explaining the procedure of incubator, discussion

Method of assessment: viva questions, short questions, short note, observing the procedure

Questions:

1. What is the principal and mechanism of incubator?
2. What is the procedure of incubation?

