

## Experiment #: 2

# Study of haemocytometer (Improved Neubauer's Chamber) and how to collect blood sample

### A. HAEMOCYTOMETER

Haemocytometer is an apparatus used to count various blood cells (RBC, WBC, eosinophil and platelets). It consists of RBC, and WBC pipette (Thoma diluting pipettes) and a thick slide (Neubauer's chamber).

#### REAGENTS;

Grower's Sol fluid for RBC counting and its composition:

- NaCl - 0.5 g for isotonicity.
- Na<sub>2</sub>SO<sub>4</sub> - 2.5 g after mixing the fluid's isotonic e R.B.Cs and prevents their Rouleaux formation.
- HgCl<sub>2</sub> - 2.5 g Antibacterial / antifungal and as preservative.
- Distilled H<sub>2</sub>O upto 100 ml for dilution.

to prevent  
↑  
coagulation

#### Diluents for Leukocyte Counting:

Turki ⇒ WBC (nav kisi ko pakarty hain)

Turk's solution is used for WBC's counting. Its composition is as follows:

- 1.5ml glacial acetic acid - for haendyeis of RBC's and platelets.
- 1 ml aqueous gentian violet - to stain nuclei of WBC's
- 100 ml - distal water.

→ to remove clv of RBC's & platelets

#### Diluents for platelet counting (Rees - Ecker's solution) and its composition:

- 3.8 g Na citrate as anticoagulant.
- 0.2 ml neutral formaldehyde (38%) - as Antifungal and fixative for the cells.
- 0.5 g brilliant cresyl blue in 50 ml distal water - for the staining of platelets.
- Distal water upto 100 ml - as diluent.

#### 1. RBC Pipette ⇒

0.5, 1, 101

red bead ⇒ 200

- This consist of glass stem having capillary tube in it which opens in a bulb containing red bead and opposite to the bulb again there is a small stem. This small stem is connected to the red coloured mouth piece with the help of a rubber tube (Figure 5).
- The stem has three markings, 0.5, 1.0 and 101. From the tip of the pipette to the marking 1.0 there are 10 equal divisions. These are simple divisions not of any specific unit system like mm, ml, and cu mm.

wentrobes tube:  
ESR PCV

Red for ESR  
⇒ 11 cm l.  
2.5cm wid

White = PCV

## OBSERVATIONS AND DIAGRAMS

Exp #02

Study of Hematocytometer(Improved Neubauer's chamber)→ Neubauer's chambers:-

The main components of Neubauer's chambers are given below:-

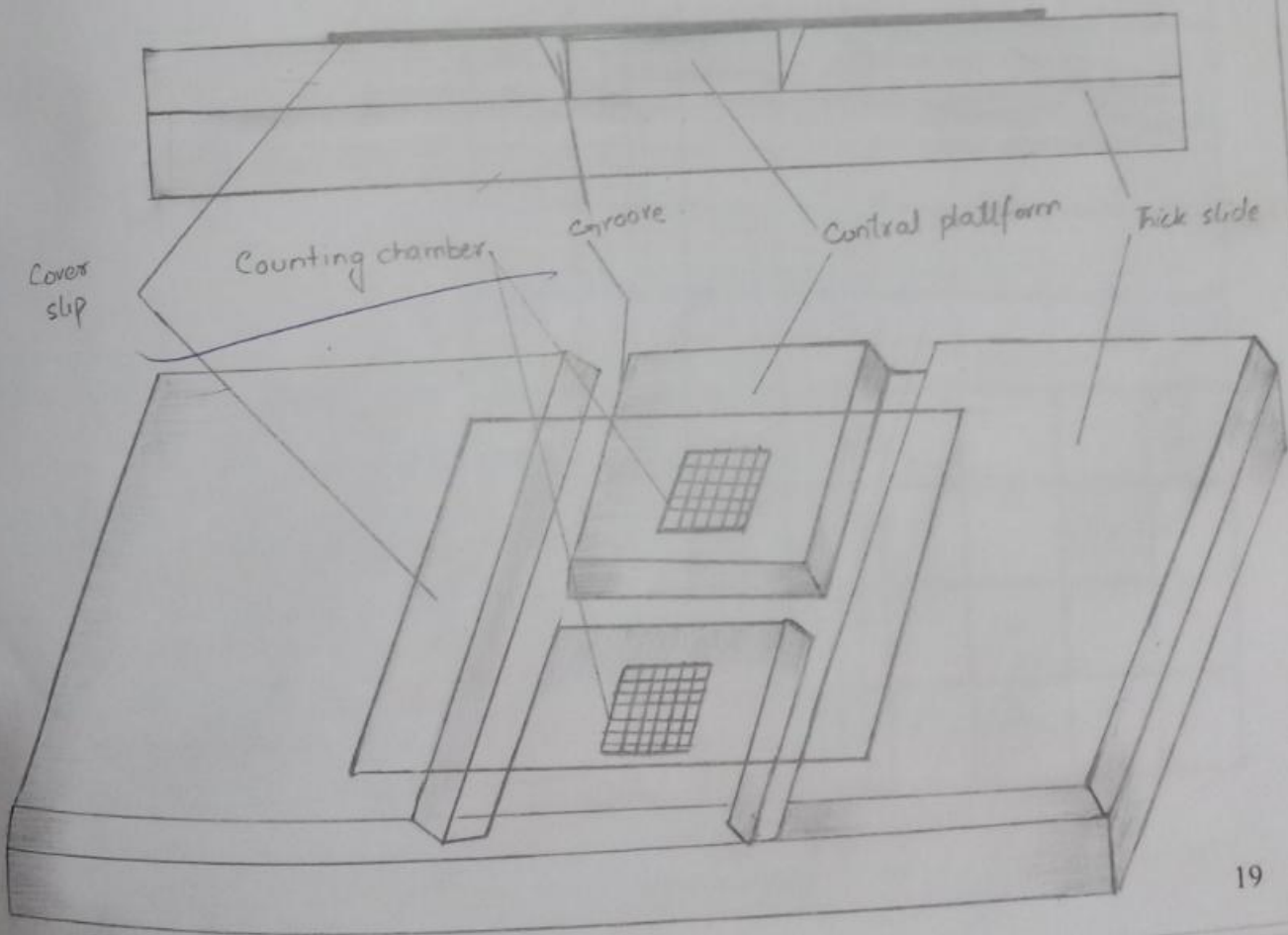
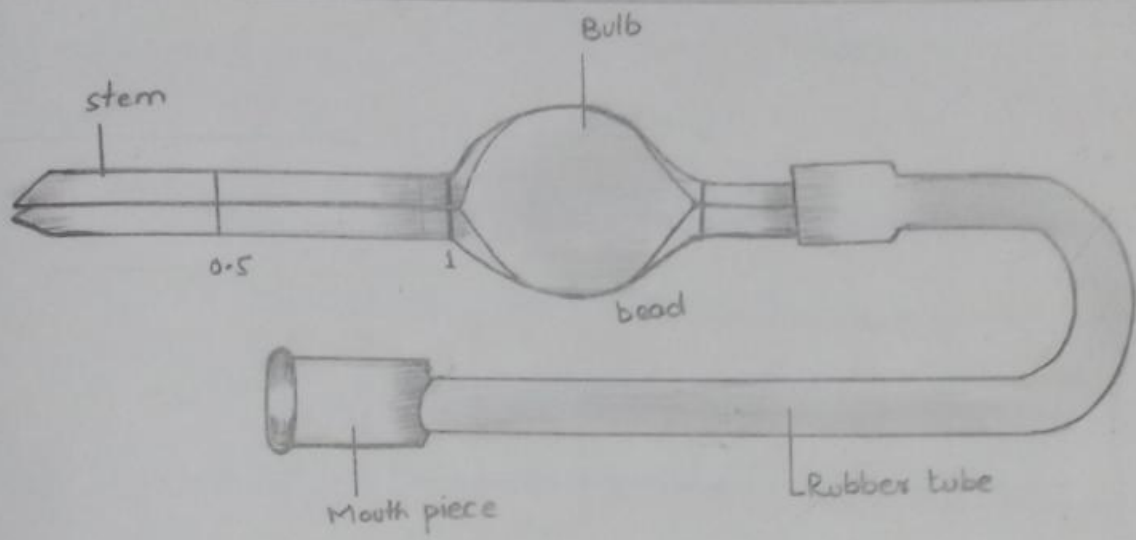
- \* Counting chamber.
- \* Cover slip.
- \* Control platform
- \* Thick slide.

→ Uses of Neubauer's chambers:-→ RBC chamber:-

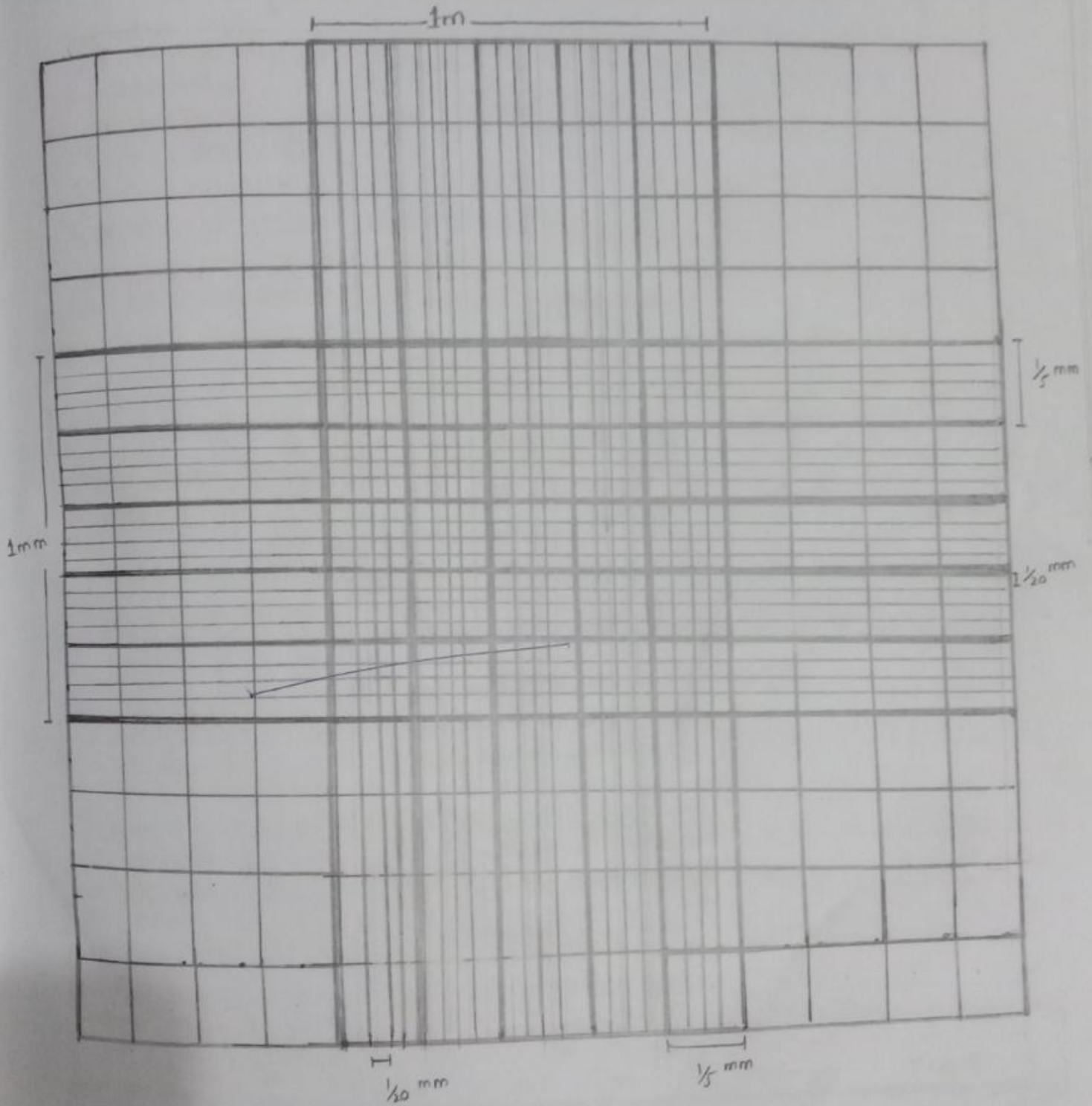
- \* RBC, platelet & reticulocyte count.

→ WBC chamber:-

- \* WBC & eosinophils count.



# Counting chamber (Neubauer's chamber)



STUDENT'S NOTES

1: Ring finger is used for pricking b/c it is less commonly used for making purposes & is less vulnerable to infection than other fingers.

2: By clearing it with cotton or wool dropped in alcohol because it has antiseptic effect.

RBC pipette	WBC's pipette
→ It has a red bead	→ It has a white bead
→ It graduation marks upto 101	→ It has graduation upto mark 11
→ Size of bulb is larger.	Size of bulb is smaller

4: B/c by squeezing finger tissue fluid mixes with blood which caused its dilution.

5: Heparin :- It activates thrombin in clotting process. This stops formation of fibrin & so stops blood clot formation.

6: Mix tubes with anticoagulants. Avoid blood from hematoma. Don't squeeze finger for collection of blood.