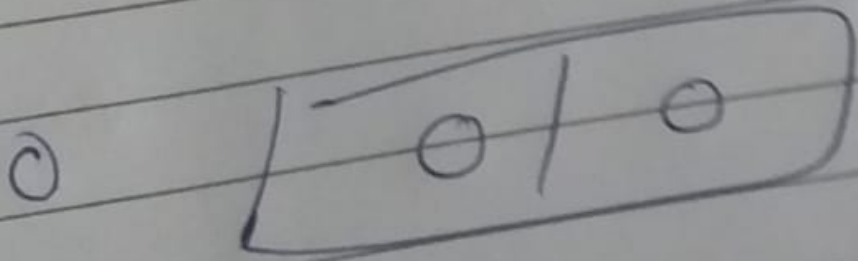
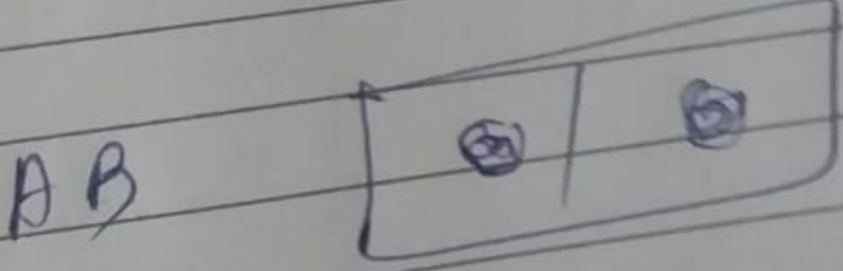
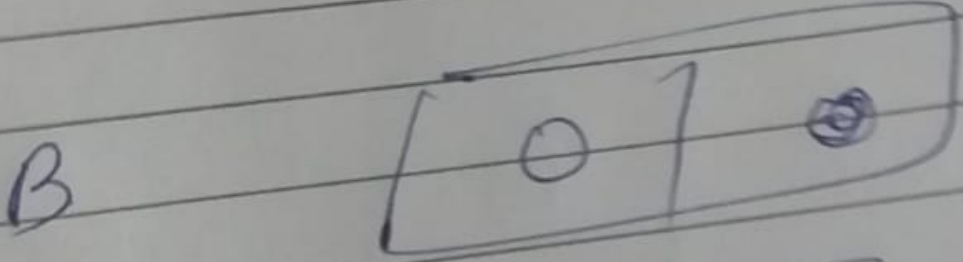
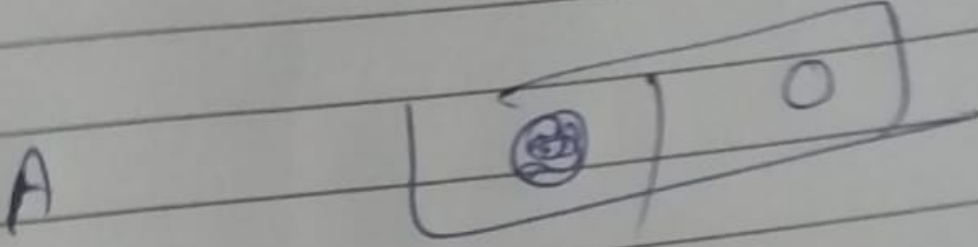


Name : -----

Blood gh.



Result : Haematocrit value or PCV = 40%.

$$\text{Plasma} = \frac{100 - 40}{5} = 60\%$$

Experiment (6) : Examination of Human Blood Group.

Principle : Karl Landsteiner discovered blood groups. According to him absence or presence of A or B agglutinogens or A and B antigens in Red blood cells (R.B.C.) blood groups are classified as under into 4 types.

- (1) **Blood group "A"**—Persons with A blood group have agglutinogen-A or antigen-A in R.B.C. and antibodies B or agglutinin-B in plasma.
- (2) **Blood group "B"**—Persons with B blood groups have agglutinogen-B or Antigen-B in R.B.C. and antibodies-A or agglutinin- A in plasma.
- (3) **Blood group -"AB"**. Persons with AB blood groups have agglutinogen A and B in R.B.C. or Antigens A and B but no antibodies in plasma.
- (4) **Blood group "O"**—persons with 'O' blood group do not have any agglutinogen or Antigens in R.B.C. but contain antibodies A and B or agglutinins A and B in plasma.

Landsteiner and Jansky not only discovered above blood groups but also demonstrated that serum antibodies of the same person do not agglutinate the Antigens present in R.B.C. and this is referred as Jansky. Landsteiner law.

Requirement : Cavity slides, blood sample vials or small glasstubes, Antiserum-A and Antiserum-B and pathological binocular microscope procedure.

- (1) Sterilize the tip of your middle finger with sterilized cotton wet in 90% alcohol.
- (2) Let the tip of the finger become dry.
- (3) Prick the finger with a sterilized needle.
- (4) Collect the blood in sample vial containing 1 ml of 0.85% sodium chloride (0.85 gms of sodium chloride powder dissolved in 100 c.c. of distilled water).
- (5) Take 2 cavity slides, each with 4 cavities wash and clean them and let the slide become dry.
- (6) Label the cavities of the slides no. 1 and no. 2. such I, II, III and IV in no. 1 slide and V, VI, VII and VIII in no. 2 slide.

Examination of Human blood group & Rh factor . . .

Presence of blood gr A = ① having A Antigen in ~~the~~ R.B.C

② B Antibody in Plasma

Blood gr B = ① B Antigen in R.B.C

② A Antibody in Plasma .

AB = ① A B Antigen in R.B.C

② No antibodies in Plasma

O = ① ^{No} ~~(X)~~ Antigen in RBC

② AB Antibody in Plasma

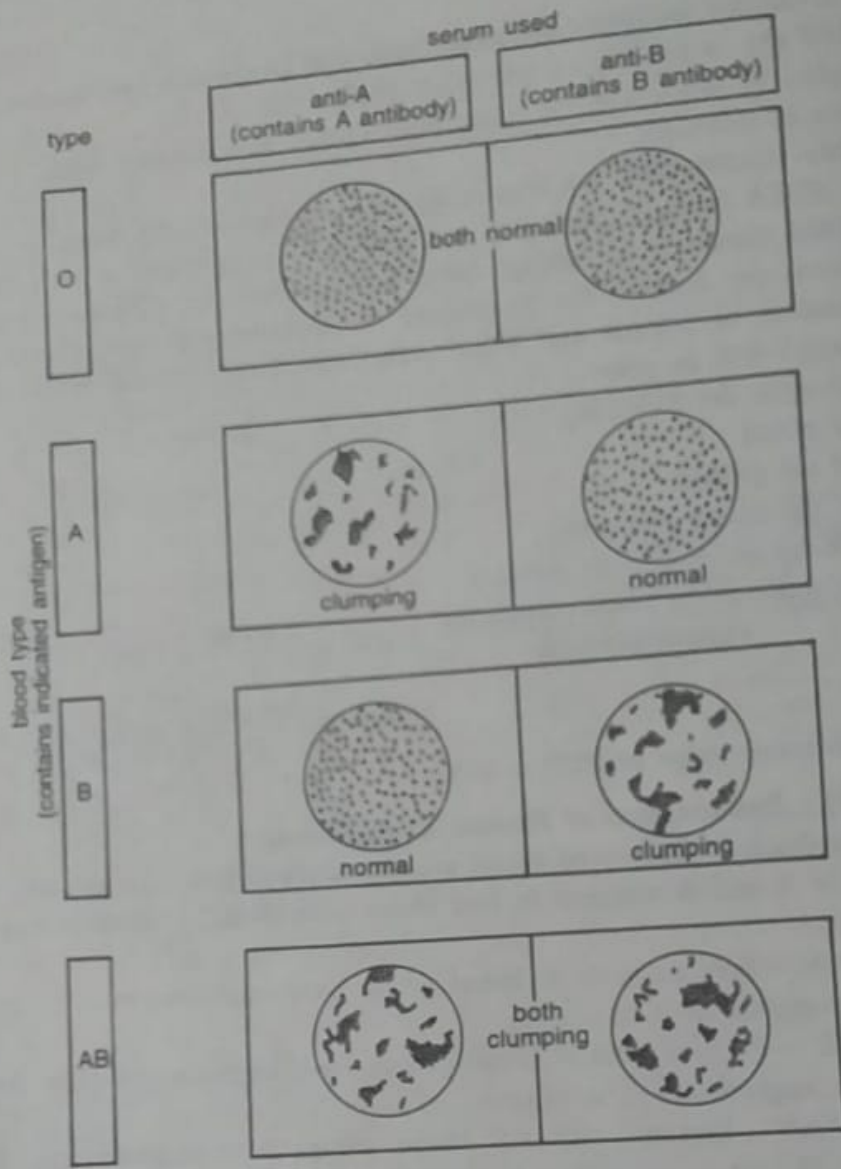


Fig. 16. Human blood groups.

- (7) Add a drop of 4, different samples of blood in each cavities as under
- | | | |
|----------------|---|-----------------------|
| Cavities I — V | — | First sample of blood |
| " II — VI | — | Second " " " |
| " III — VIII | — | Third " " " |
| " IV — VIII | — | Fourth " " " |
- (8) In slide no. 1 add a drop of **antiserum-A** in cavities I-IV. In slide no. 2. add a drop of **antiserum-B** in cavities V-VIII with a sterilized needle mix the blood sample and antisera gradually in each cavity slides for 10 minutes.

Observation :

- (1) I-V cavities- [No clumping hence blood group 'O'] (First sample of blood) Agglutination
- (2) II-VI-Clumping in II and-Blood group A second sample of blood. no clumping in VI
- (3) III-VIII-No clumping in third and - Blood group 'B' third sample of blood-clumping in VII
- (4) IV-VIII. Clumping in IV-VIII-Blood group "AB" fourth sample.