

Babur  
Monday Sub: Human Anatomy and Physiology.

### 1.1. Mechanism of Blood Clotting:-

Blood ~~coagulation~~ coagulation is an important phenomenon to prevent excess loss of blood in case of injury or trauma. The blood stop flowing from a wound in case of injury. The blood clot or 'coagulum' is formed by a network of fibrin threads. In this network, deformed and dead formed element (erythrocytes, leukocytes and platelets) get trapped.

The enzyme thrombin converts fibrinogen present in the plasma to fibrin. It is a cascade process of a series of enzyme catalyzed reaction.

### 2. Hematopoiesis:-

Hematopoiesis is the production of all of the cellular component of blood and blood plasma. It occurs within the hematopoietic system, which include organs and tissues such as the bone marrow, liver, and spleen. Simply, hematopoiesis is the process through which the body manufactures blood cells. Normal hematopoiesis is a well-regulated process in which the generation of mature blood elements occurs from primitive pluripotent stem cell in an ordered sequence of maturation and proliferation.

### 3. Physiology of GIT:-

Gastrointestinal physiology is the branch of human physiology that addresses the physical function of the gastrointestinal (GI) tract. The function of GI tract is to process ingested food by mechanical and chemical means.

The main function of GIT provides the body with a supply of water, nutrients, electrolytes, vitamins,

13. 5. Arteries  $\Rightarrow$  Arteries carry blood away from heart. It has thick elastic muscular walls.  
Veins  $\Rightarrow$  Veins carry blood towards the heart. It carries deoxygenated blood. It has thin non-elastic less muscular wall.

Capillaries  $\Rightarrow$  Capillaries connect to the arteries to veins. It delivers the waste-rich blood to the veins for transport back to the lungs and heart.

6. Composition and function of blood  $\Rightarrow$

- Blood is a fluid connective tissue composed of 55% plasma and 45% formed elements including NBCs, RBCs, and platelets.
- \* Blood provides body cells with Oxygen and removes Carbon Dioxide.
- \* Blood ~~trans~~ transports Nutrients and Hormones.
- \* Blood regulates Body Temperature.

7. Physiology of Digestion  $\Rightarrow$  Digestion is the process of mechanically and enzymatically breaking down food into substances for absorption into the bloodstream. The food content contains three macronutrients that require digestion before they can be absorbed, fats, carbohydrate and proteins.

8. Respiratory Organ:— The main organ of the respiratory system is the lungs. Other respiratory organs include the nose, the trachea and the breathing muscles. The throat is a tube that delivers air from your mouth and nose to the trachea. Trachea connects your throat and lungs. This two organ that remove oxygen from the air and pass into the blood.

3. RBC  $\Rightarrow$  Red Blood Cell (RBC) carry oxygen from our lungs to the rest of our bodies. Then they make the return trip, taking carbon-dioxide back to our lungs to be exhaled.

\* Hemoglobin molecules in RBCs.

\* Hemoglobin accepting  $\text{CO}_2$  and releasing  $\text{O}_2$ .

\* Hemoglobin bonding with  $\text{O}_2$  and releasing  $\text{CO}_2$ .

~~④~~

III. 11. Serum & Plasma  $\Rightarrow$

Serum is the liquid that remains after the clotting of blood. Whereas, plasma is the liquid that remains when anticoagulant is added to it to prevent clotting.

12. Anticoagulant :- Anticoagulant a group of medications that decrease your blood's ability to clot.  
Example : Aspirin, heparin and warfarin.

13. WBCs :- White Blood Cells are part of the body's immune system. They help the body fight infection and other diseases.

14. ~~Normal~~ The <sup>normal</sup> hemoglobin ~~is~~ value range between 12 to 20 g/dl.

~~15. Viti  $\Rightarrow$~~

16. The most important digestive enzymes are :-

\* Amylase.

④ Maltase.

\* Lactase

\* Lipase.

17. Alveoli  $\Rightarrow$  Alveoli are where the lungs and the blood exchange oxygen and carbon dioxide during the process of the breathing in and breathing out.

18. Bronchioles:- The Bronchioles are part of the conduction zone of the respiratory system.

19. Digestive System:

20.

Digestive system includes the mouth, pharynx (throat), esophagus, stomach, small intestine, large intestine, rectum and anus.

~~20. Organ of dig.~~

