[Name of the Writer]

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[Subject]

[Date]

**Reviewing the Concepts 4.1-4.3**

Chapter 11

1. Plasma makes up nearly 55% of blood and serves as a medium for blood transportation.
2. Albumins, globulins, and clotting proteins
3. Platelets play role in blood clotting; white blood cells perform different housekeeping duties, and red blood cells carry oxygen to lungs and to all parts of the body.
4. Leukocytes consists of neutrophils (3000-7000/mm3), eosinophils (100-400/mm3) and basophils(20-50/mm3) and are nucleated. Erythrocytes are 4–6 million/mm3, 45% of the total blood volume and are quite small, have no nucleus and have biconcave disk shape.
5. Neutrophils : Consume bacteria by phagocytosis

Eosinophils : Consume antibody–antigen complex by phagocytosis; attack parasitic worms

Basophils : Release histamine, which attracts white blood cells to the site of inflammation and widens blood vessels

Monocytes: Give rise to macrophages, which consume bacteria, dead cells, and cell parts by phagocytosis

Lymphocytes: Attack damaged or diseased cells, or disease-causing organisms; produce antibodies

1. Red blood cells have shape like a biconcave disk that make them specialized for delivering oxygen to the tissues. These are also flexible and can squeeze easily.
2. Hemoglobin helps to carry out oxygen.
3. Red blood cells are produced in liver and spleen and have no nucleus to control their number.

Chapter 12

1. Heart, artery, arteriole, capillary, venule and veins
2. A pulse is alternate expansion and shrinking of arteries
3. Swelled arterial wall
4. Arterioles have regulatory roles; prime controllers of blood pressure, act as gatekeepers to the capillary networks.
5. Precapillary sphincter

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Inner layer | Middle layer | Outer layer | Reason of structure |
| Artery | Endothelium Lumen | Smooth muscle and elastic fibers | Connective tissue | Can easily stretch |
| Vein  | Endothelium | Smooth muscle and elastic fibers | Connective tissue | Can easily stretch |
| Capillary | Endothelium Lumen | ------ | ------- | Substances can move easily |

1. By nearby skeletal muscles
2. Two pairs of valves make sure that the blood flows in only one direction through the heart; atrioventricular (AV) valves, the semilunar valves.
3. Left atrium AV (bicuspid or mitral) valve

Left ventricle Aortic semilunar valve Aorta

 Body tissues Inferior vena cava or superior vena cava Right atrium

1. The cardiac cycle consists of systole phase and diastolic phase.
2. The human heart has four chambers, the right atrium, the right ventricle, the left atrium and the left ventricle. Velves are also present to stop the backflow. The right side receives oxygen-poor blood from veins and pumps it to lungs then the left side receives oxygen-rich blood from lungs and pumps it through arteries to the rest of body.
3. Left atrium AV (bicuspid or mitral) valve

Left ventricle Aortic semilunar valve Aorta

 Body tissues Inferior vena cava or superior vena cava Right atrium

1. The cardiac cycle consists of systole phase and diastolic phase.

Chapter 13

By birth defense mechanism are innate and immune response is adaptive specific defense mechanism.

1. Tears, skin, large intestine, saliva, respiratory tract, stomach and bladder.
2. Roams the body and kill them.
3. Small proteins produced by infected cell and attack at macrophages.
4. A group of at least 20 proteins that support body defense mechanism.
5. Damage of tissues
6. Engulfs and digests pathogen
7. B cells
8. Antibody remove foreign object.
9. The lymphocytes
10. Natural killer cell is activated and cytotoxic T cells activates due to cell mediated immune response.
11. Due to subsequent exposure to the antigen.
12. Active immunity is immunization of host and passive require transfer of proteins.
13. Groups of identical antibodies that bind to one specific antigen
14. Immune system fails to distinguish between self and nonself attacks.