

PHYSIOLOGY PAPER

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QUESTION/ANSWER.

Q1 Establish a differentiate criteria between arteries, veins and capillaries?

ARTERIES	VEINS	CAPILLARIES
Carry blood away from the heart.	Return blood to the heart.	Connect arteries and veins, supply all cell of their requirements.
Thick, strong contain muscles , elastic fibers and fibrous tissue.	Thin, contain far less muscles and elastic tissue than arteries, fibrous tissue.	Very thin only one cell thick.
Carries oxygenated blood.	Carries deoxygenated blood.	Carries both blood.
High pressure with thick walls.	Low pressure with thin walls.	Walls only one-cell thick for diffusion.
Narrow lumen.	Very narrow lumen.	Wide lumen.
Has no valves .	Has valves prevent back flow.	Has no valves .
Situated very deep into the skin.	Situated superficially on the skin.	Situated in the terminals of artery or veins.

Q2 Name the classes of antibodies? What are the characteristics of antibody?

CLASSES OF ANTIBODY :

ANTIBODY	CHARACTERISTICS
IgG	Main blood antibody, neutralize toxin, isotype of secondary immune response.
IgA	Secreted into mucus, tears, saliva. Isotype of secretion. Protection of mucosal surfaces.
IgM	Isotype of primary immune response. Complexed with antigen activates complement.
IgE	Major isotype in protection against parasites, antibody of allergy.
IgD	First isotype in B lymphocyte membrane. Function in serum is not known.

CHARACTERISTICS OF ANTIBODY;

SPECIFICITY: The ability to bind to epitopes. One **B** cell will make only one **SPECIFICITY** of antibodies.

BIOLOGIC ACTIVITIES: The ability to trigger protective physiological activities.

Q3 Explain significance of lymphatic duct?

SIGNIFICANCE :

A **lymphatic duct** is a great lymphatic vessel that empties lymph into one of the **subclavian veins** – the **right lymphatic duct** and the **thoracic duct**.

The lymphatic vessels are capable of removing excess **extravascular fluid** because of their effectiveness as pumps. After filtration by lymph nodes ,efferent lymphatic vessels take lymph to the end of the lymphatic system. The final goal of lymphatic system is to recirculate lymph back into the plasma of the bloodstream. There are two specialized lymphatic structures at the end of the lymphatic system lymphatic **trunks** and lymphatic **ducts**.

Lymphatic propulsion is determined by the intrinsic contractibility of lymphatic vessels e.g by pumping action of inspiration and expiration during respiration, and by lymphatic valves which account for the unidirectional **lymph flow**.

One of the lymphatic system job is to collect extra lymph fluid from body tissue and return it to the blood. This is important because water ,protein and other substances are always leaking out of tiny blood capillaries into surrounding body tissues , if this leakage is not check out it will cause edema.

Largest lymphatic duct(thoracic duct) drains **75%** of the lymph from the entire body, all region except right arm, right breast, right lung, right side of the head and neck (which are drain by right lymphatic duct).

Q4 what are the clinical manifestation of kidney patient having having kidney disease. Also write function of kidney ?

CLINICAL MANIFESTATION:

First signs and symptoms of kidney problems may include

- Decrease urine output, although sometimes occasionally urine output remains normal.
- Fluid retention.
- Swelling of legs, ankles or feet.
- Unexplained shortness of breath.
- Excessive drowsiness or fatigue.
- Nausea.
- High Blood pressure.
- An infection, damage, tumor or side effect of certain medication can cause kidney disease

Kidney problems contributes to **two** types of major kidney diseases; **acute renal failure** and **chronic renal failure**.

FUNCTION OF KIDNEY:

Major Function of kidneys is to remove waste products and excess fluid from the body in the form of **urine**.

- Regulation of extracellular **fluid volume**. The kidneys work to ensure an adequate quantity of **plasma** to keep blood flowing to vital organs
- Regulation of **osmolarity**.
- Regulation of **ion concentration and electrolyte balance**.
- Regulation of **pH**.

- Excretion of **wastes , toxin and metabolites.**
- Endocrine function of production of **hormone** e.g **Renin, erythropoietin hormone, prostaglandin hormone.**
- Help in controlling **Acid-base** balance.
- Homeostatic function of kidney is **water balance.**
- Control **Blood pressure.**
- Help in **activating vitamin D.**

Q5 Differentiate between the pulmonary and systemic circulation. Give sign and symptoms of myocardial infraction?

PULMONARY CIRCULATION	SYSTEMIC CIRCULATION
Carries deoxygenated blood from the right ventricle of the heart to the lungs through pulmonary artery.	Carries oxygenated blood from the left ventricle of the heart to the rest of the body by the aorta.
Carries oxygenated blood from the lungs to the left atrium of the heart by the pulmonary vein.	Carries deoxygenated blood from the body to right atrium of the heart by superior and inferior vena cava.
Composed of pulmonary artery and pulmonary vein.	Composed of inferior and superior vena cava, aorta and other small blood vessels.
Carries blood to the lungs	Carries blood throughout the body.
Low pressure, Low resistance and high compliance. Main pulmonary artery divides into two- left and right main pulmonary artery.	High pressure, High resistance and Low compliance. Aorta divides into several branches to carry blood to the different organs of the body.

SIGNS AND SYMPTOMS OF MYOCARDIAL INFRACTION.

Myocardial infraction is also known **heart attack** occur when the flow of **blood to the heart is blocked.**

- Pressure or tightness in the chest.
- Pain into chest, back , jaw and other areas of the upper body.
- Shortness of breath.
- Sweating.
- Nausea.
- Vomiting.
- Anxiety.
- Cough.
- Dizziness.
- Fast heart rate.

Not all people who have heart attack experience the same symptoms or the same severity of the systems. Sometimes heart attack report that symptoms felt like the symptoms of flu.
