FLASH CARDS

CLASS : Class 11th **SUBJECT : Zoology**

CHAPTER: Body Fluids and Circulation

Terminology	Description
Body Fluids	Fluids are involved in the transport of nutrients, gases, hormones, and wastes.
Blood	Blood is a special connective tissue consisting of a fluid matrix, plasma, and formed elements.
Lymph	Colourless fluid formed from tissue fluid.
Plasma	Plasma is a straw coloured, viscous fluid constituting nearly 55 per cent of the blood. 90-92 per cent of plasma is water and proteins contribute 6-8 per cent of it.
Plasma Proteins	Fibrinogen, globulins and albumins are the major proteins. Fibrinogens are needed for clotting or coagulation of blood. Globulins primarly are involved in defense mechanisms of the body and the albumins help in osmotic balance.
Formed Elements	Erythrocytes, leucocytes and platelets are collectively called formed elements, and they constitute nearly 45 per cent of the blood.
Serum	Plasma without clotting factors.
Red Blood Cells (RBCs)	RBCs are the most abundant cells; transport oxygen. Hemoglobin: Iron-containing respiratory pigment. Biconcave Shape: Increases surface area for gas exchange. Erythropoiesis: Formation of RBCs in bone marrow. Lifespan of RBC: About 120 days. Anaemia: Decrease in hemoglobin or RBC count.
White Blood Cells (WBCs)	WBC (Leukocytes) are the defence cells of body. Granulocytes: Neutrophils, eosinophils, basophils. Agranulocytes: Lymphocytes, monocytes. Neutrophils and monocytes: Phagocytic cells. Lymphocytes: B-cells & T-cells; immunity. Basophils: Basophils secrete histamine, serotonin, heparin, etc., and are involved in inflammatory reactions. Eosinophils: Eosinophils (2-3 per cent) resist infections and are also associated with allergic reactions.
Platelets & Blood Clotting	Platelets (Thrombocytes) are the cell fragments involved in clotting. Prothrombin: Converted to thrombin during clotting.

	Fibrin: Forms a mesh to trap blood cells.
ABO System	Based on A & B antigens on RBCs. Blood Group A: Antigen A; antibody anti-B. Blood Group B: Antigen B; antibody anti-A. Blood Group AB: Both antigens; universal recipient. Blood Group O: No antigen; universal donor.
Rh System	Presence (+) or absence (-) of Rh antigen. Erythroblastosis Foetalis: Rh incompatibility disorder. Has been observed between the Rh-ve blood of a pregnant mother and the Rh+ve blood of the foetus.
Types of Circulatory System	Open Circulatory System: Blood flows in sinuses (e.g., arthropods). Closed Circulatory System: Blood flows in vessels (e.g., humans). Single Circulation: Blood passes the heart once (fish). Double Circulation: Blood passes the heart twice (humans).
Human Heart	A muscular organ that pumps blood. Possess a double-layered protective covering called the pericardium. Upper receiving chambers are called atria. Lower pumping chambers are called ventricles.
Cardiac Cycle	It's a sequence of events in one heartbeat (~0.8 sec). Systole: Contraction phase. Diastole: Relaxation phase. Heart Sounds: Lub (AV valves close), Dub (Semilunar valves close). ECG: Electrocardiogram recording heart activity.
Electrocardiogram (ECG)	ECG is a graphical representation of the electrical activity of the heart during a cardiac cycle. P-wave: Depolarisation of the atria QRS Complex: Depolarisation of the ventricles. T-wave: Repolarisation of the ventricles.
Blood Vessels	Arteries: Carry blood away from the heart. Thick and elastic. Veins: Carry blood toward the heart. Thin and non-elastic. Capillaries: Exchange vessels. Single cell in thickness. Systolic Pressure: Pressure during ventricular contraction. Diastolic Pressure: Pressure during relaxation.
Regulation of Cardiac Activity	SA Node: Pacemaker of heart. Generates maximum action potentials. AV Node: Relays the impulse to the ventricles. Bundle of His: Conducts the impulse to the ventricles. Autonomic Nervous System: Regulates heart rate. Adrenaline: Increases heart rate.
Disorders of the Circulatory System	Hypertension: High blood pressure (>140/90 mm Hg). Atherosclerosis: Calcium, fat, cholesterol and fibrous tissues, deposition in arteries. Angina: Chest pain due to reduced blood flow.

	Cardiac Arrest: Sudden stopping of heart function



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