

UNIT-III: HUMAN PHYSIOLOGY

5. BODY FLUIDS AND CIRCULATION

1 OMQ + 1VSAQ+ 1LAQ = [1M + 2M + 8 M = 11 M]

ROOT POINTS

1. Two important body fluids of human are **Blood and Lymph** (tissue fluid).
They always circulate around the body and transport certain substances.
2. **Main contents of this chapter** are i) Blood ii) Lymph iii) Circulatory pathways iv) Double circulation v) Regulation of cardiac activity vi) Disorders of circulatory system (BP, Heart attack).
3. The **body fluids blood and lymph** called circulatory fluids help in the transport of various substances among various body parts.
4. **Blood and lymph** together consist the **fluid tissues** in the human body.
5. Average lifespan of red blood cells in man is **120 days**. [OWQ]
6. **Haemoglobin** is the red coloured iron containing protein present in the RBC. [OWQ]
7. Erythrocytes are produced in the **Bone marrow** of adults. [FIB]
8. **Spleen** is known as graveyard of RBC. [FIB]
9. **Blood platelets** are involved in the clotting of blood. [MCQ]
10. **Calcium** ions play a very important role in blood clotting. [FIB]
11. Two major types of Lymphocytes are **B-Lymphocytes, T-Lymphocytes**. [OWQ]
12. Plasma without clotting factors is called **serum**. [MCQ]
13. Persons with **AB** blood group are called universal recipients. [FIB]
14. AB blood group **does not contain antibodies** in the plasma. [MCQ]
15. Heart is **Mesodermal in origin** situated in the mediastinum. It is of the size of a clenched fist.
16. **Structure of the heart:** [LAQ]
 - (i) **Pericardium**
 - (ii) **Heart wall** with 3 layers (a) Outer epicardium (b) Middle myocardium (c) Inner endocardium
 - (iii) **External Structure** of heart includes
 - (a) Two upper chambers called **atria**. (b) Two lower chambers called **ventricles**.
 - (iv) **Internal structure** includes (a) Atria (b) Ventricles (c) Nodal tissue (d) Aortic arches.

17. **Working of heart:** (i) Generation & conduction of action potentials [LAQ]
(ii) Cardiac cycle (iii) Double circulation (pulmonary circulation and systemic circulation)
18. The left atrioventricular aperture is guarded by **Bicuspid or Mitral valve.** [VSAQ]
19. The right atrioventricular aperture is guarded by **tricuspid valve.** [VSAQ]
20. The heart sounds are '**Lub' and 'Dub'.** [VSAQ]
21. **Pulmonary veins** blood vessels carry oxygenated blood from the lungs to the heart. [MCQ]
22. The smooth muscle layer in the wall of an artery or a vein is **tunica media.** [MCQ]
23. **Sino Atrial Node** generates action potentials in cardiac cycle. [OWQ]
24. Cardiac events that occur from the beginning of one heartbeat to the beginning of the next is called cardiac cycle. Its **duration is about 0.8 sec.** [VSAQ]
25. The normal blood pressure in human beings is **120/80 mm Hg.** [OWQ]
26. Erythropoiesis starts in **red bone marrow.** [NEET 2015]
27. Blood = Plasma + RBC + WBC + Platelets [NEET 2015]
28. **Whale** has two separate circulatory pathways. [NEET 2015]
29. In mammals, **Hepatic Vein** normally carries largest amount of urea. [NEET 2016]
30. Serum differs from blood in **lacking clotting factors.** [NEET 2016]
31. The hepatic portal vein drains blood to liver from **stomach and intestine** [NEET 2017]
32. Blood pressure in the mammalian aorta is maximum during [NEET 2015]
systole of the left ventricle
33. Blood pressure in the pulmonary artery is **more than that in the pulmonary vein.** [NEET 2016]
34. The QRS complex in a standard ECG represents **depolarisation of ventricles.** [NEET 2020]
35. The enzyme **Thrombin** is responsible for the conversion of **inactive fibrinogens to fibrins.** [NEET 2021]
36. **Spleen** is the graveyard of erythrocytes. [NEET 2022]
37. T-P gap represents that **heart muscles are electrically silent.** [NEET 2024]