

[In the name of Allah who knows the beatings of our hearts]

(PAPER : HEMATOLOGY)

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QNO1:MCQ's:

ANSWER:

- a) None of them
- b) None of them
- c) All of the Above
- d) 4.7 to 6.1 millions per cell
- e) Thrombocytopenia
- f) Red bone marrow
- g) Myeloid tissue
- h) Polycythemia
- i) Both A and B
- j) None of them

Qno2: Briefly explain hematopoiesis ?

ANS:

Hematopoiesis is the process of making or manufacturing new blood cells through the body or in other words it is the production of all the cellular components and Plasma is known as Hematopoiesis. The Components are Red blood cell, white blood cells and platelets etc.

Sites of Hematopoiesis:

- Fetus:
 - 0-2 month (Yolk Sac)
 - 2-7 months (Liver, Spleen)
 - 5-9 months (Bone marrow)
- Infants:
 - Bone marrow (Particularly all bone)
- Adults:
 - Ribs, Sternum, Skull, Pelvis etc.

QNO3:

Enlist the characteristics of Blood?

Answer:

BLOOD:

- It is an extracellular matrix or body fluid in human and other animals that carries important substances such as nutrients and oxygen to the cell and carrier back metabolic waste carbon dioxide away from those same tissue.
- Blood is composed of blood cells present inside blood Plasma. Plasma which is a composition of 55% of blood fluid and is mostly water (92% by volume) and contains glucose, minerals ions, hormones, carbon dioxide and blood cells.

Characteristics of blood: Blood contain blood cells.

- It is the only tissue in the body which is in the liquid form.
- It is a Connective tissue.
- Average Adult blood volume is around 5 liters. 8% of the body weight.
- Blood is more heavier and dense or viscous the water.
- It has the pH of 7.4.
- It transport O₂ and nutrients to cell and waste away from cells, hormones to the targeted cell.
- It helps in maintaining body pH, Temperature, water and electrolytes levels to be stable.
- Blood cells contain Red blood cells, White blood cells and platelets.
- RBC means Red blood cell is also known as Erythrocytes. RBC has hameoglobine which take oxygen to the targeted cell and take away carbon dioxide from the same cell or tissues.
- WBC means White blood cell is also known as Leukocytes. WBC protect the body against diseases.
- Platelets which is also known as thrombocytes. It helps in Clotting to prevent fluid loss.

QNO4:

Write down a Comprehensive note on bone marrow?

Answer:

Definition: It is spongy tissue present in the hollow areas of flat and long bones of the body i.e Sternum and Hip bones. Bone marrow are rich nutrients tissues of the body.

Types of Bone marrow: There are two types of od bone marrow.

A:Red bone marrow B:Yellow bone marrow

A:Red Bone marrow:

- Red bone marrow is also known as Myeloid tissue.
- It contains blood vessels.
- In human adult platelets and RBC are formed by Red bone marrow.

- About 60 to 70 percent of Lymphocytes are formed in red bone marrow. While the rest begin life in red bone marrow and become fully formed in lymphatic tissue including thymus, Spleen and lymph nodes.
- It also help in the obligation of Old red blood cell along with liver and Spleen.

B: Yellow bone marrow:

- It is also known as Fatty tissue.
- It contain blood vessels.
- The main aim of Yellow bone marrow is to store fat and also give the bone suitable environment for function.
- It also play important role in several conditions like in fever and in injuries when a blood is loss, it change the yellow in to red bone marrow.
- It is located in central cavities of long bone and surrounded by a layer of red bone marrow with long beam like structure with in a spongy like reticular framework.

QNO5:Describe different sites of Hematopoiesis in Fetus, infants and adults?

ANSWE:

Site of Hematopoiesis in Fetus:

- 0 to 2 month it take place inside the Yolk sac.
- 2 to 7 months it take place in the liver and spleen.
- 5 to 9 months it take place in bone marrow.

Site of Hematopoiesis in Infants:

- In infants Hematopoiesis take place in bone marrow particularly all bones.

Site of Hematopoiesis in Adults:

- In adults Hematopoiesis occur in vertebrae, sternum, skull, sacrum, pelvis, proximal and end of femur.

THE END.

THANK YOU.

