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Paper;	Basic Hematology
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Section A

1. the most commonly ordered blood tests
 - A. Urine RE
 - B. T3
 - C. T4
 - D. Hmg1b**
 - E. None of them
2. When a person has been diagnosed with a disease known to affect blood cells, a ___ will often be ordered on a regular basis to monitor their condition
 - A. Urine RE
 - B. T3
 - C. T4
 - D. Hmg1b**
 - E. None of them
3. The cells that are part of the body's defense system against infections and cancer and also play a role in allergies and inflammation
 - A. Neutrophils**
 - B. Lymphocytes
 - C. Eosinophils
 - D. Monocytes
 - E. All of the above
4. Normal RBC range in:Male:
 - A. 4.7 to 6.1 million cells p (cells/mcL)**
 - B. 4.2 to 5.4 million cells/mcL
 - C. 6.7 to 6.1 million cells p (cells/mcL)
 - D. 9.7 to 6.1 million cells p (cells/mcL)
5. Low platelet concentration is
 - A. Thrombocytopenia**
 - B. Thrombocytosis
 - C. Thrombocytopathy
 - D. Leukopenia

6. Also known as myeloid tissue
 - A. Red BM**
 - B. Yellow BM
 - C. White BM
 - D. Greenish fatty tissue
7. All red blood cells and platelets in humans adults are formed in_____
 - A. Yellow BM
 - B. White BM
 - C. Greenish fatty tissue
 - D. Myeloid tissue**
8. Increase in red blood cells
 - A. Anemia
 - B. Polycythemia**
 - C. leukemia
 - D. Clotting defects
9. Thrombopoietin is a glycoprotein hormone produced mainly by___
 - A. Liver
 - B. Kidney
 - C. Both a and b**
 - D. Brain
10. life span of RBCs is_____
 - A. 2 months
 - B. 3 months
 - C. 6 months
 - D. None of them**

MCQS

1.	D
2.	D
3.	A
4.	A
5.	A
6.	A
7.	D
8.	B
9.	C
10.	D

SECTION B

Q:1 Enlist characteristics of blood.

ANSWER

Characteristics of Blood

Blood is a fluid tissue (connective tissue).

- Formed elements i.e. blood cells
 - Erythrocytes
 - Leukocytes
 - Platelet
 - Plasma --Nonliving fluid matrix.
 - Water
 - Dissolved materials
 - e.g. gases, nutrients, proteins, hormones
 - More dense than water.
 - 5 times more viscous than water.
 - Slightly alkaline.
 - Normal blood pH is 7.35 – 7.45.
 - Temperature 100.4 degrees F.
 - 8 % of the body's weight.
 - Volume is about 5-6 L in males and 4-5 L in females.
 - At any one time 25% of the blood is being filtered in the kidneys.
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Q:2 Briefly Explain hematopoiesis.

ANSWER

Hematopoiesis:

- The production of all types of blood cells including formation, development, and differentiation of blood cells.
- Prenatally, hematopoiesis occurs in the yolk sack, then in the liver, and lastly in the bone marrow.
- In the normal situation, hematopoiesis in adults occurs in the bone marrow and lymphatic tissues.
- All types of blood cells are derived from primitive cells (stem cells) that are pluripotent (they have the potential to develop into all types of blood cells)

- Simply, hematopoiesis is the process through which the body manufactures blood cells.
- It begins early in the development of an embryo, well before birth, and continues for the life of an individual.
- The blood is made up of more than 10 different cell types.
- Each of these cell types falls into one of three broad categories:

1. Red blood cells (erythrocytes)

2. White blood cells (leukocytes):

There are several different types of white blood cells:

- I. **Lymphocytes:** Including T cells and B cell
- II. **Neutrophils:**
- III. **Eosinophils:**
- IV. **Basophils:**
- V. **Macrophages:**

3. Platelets (thrombocytes):

- The rate of hematopoiesis depends on the body's needs. The body continually manufactures new blood cells to replace old ones. About 1 percent of the body's blood cells must be replaced every day.
- White blood cells have the shortest life span, sometimes surviving just a few hours to a few days, while red blood cells can last up to 120 days or so.

Q:3 write down a comprehensive note on bone marrow

ANSWERS

Bone marrow ;

- Bone marrow is the spongy tissue inside some of your bones, such as your hip and thigh bones.
- It contains stem cells. The stem cells can develop into the red blood cells that carry

oxygen through your body, the white blood cells that fight infections, and the platelets that help with blood clotting

- Bone marrow is soft, gelatinous tissue that fills the medullary cavities, the centers of bones.
- The two types of bone marrow are red bone marrow, known as myeloid tissue, and yellow bone marrow, or fatty tissue
- Each type of blood cell made by the bone marrow has an important job. Red blood cells carry oxygen to tissues in the body
- In adult humans, bone marrow is primarily located in the ribs, vertebrae, sternum, and bones of the pelvis
- Lymphocytes are produced in the marrow, and play an important part in the body's immune system

Q:4 Describe different sites of hematopoiesis in fetus, infants and adults

ANSWER;

In adults, hematopoiesis of red blood cells and platelets occurs primarily in the **bone marrow**.

In infants and children, it may also continue in the **spleen and liver**

In fetus, they occurs mainly in the fetal **liver** followed by localization to the bone marrow

THE END/ THANK U