

Question Paper

Time: 48 hours

Class Code. _____
khan/16502 _____

Name/Class Rollno: _ihtisham

Note:

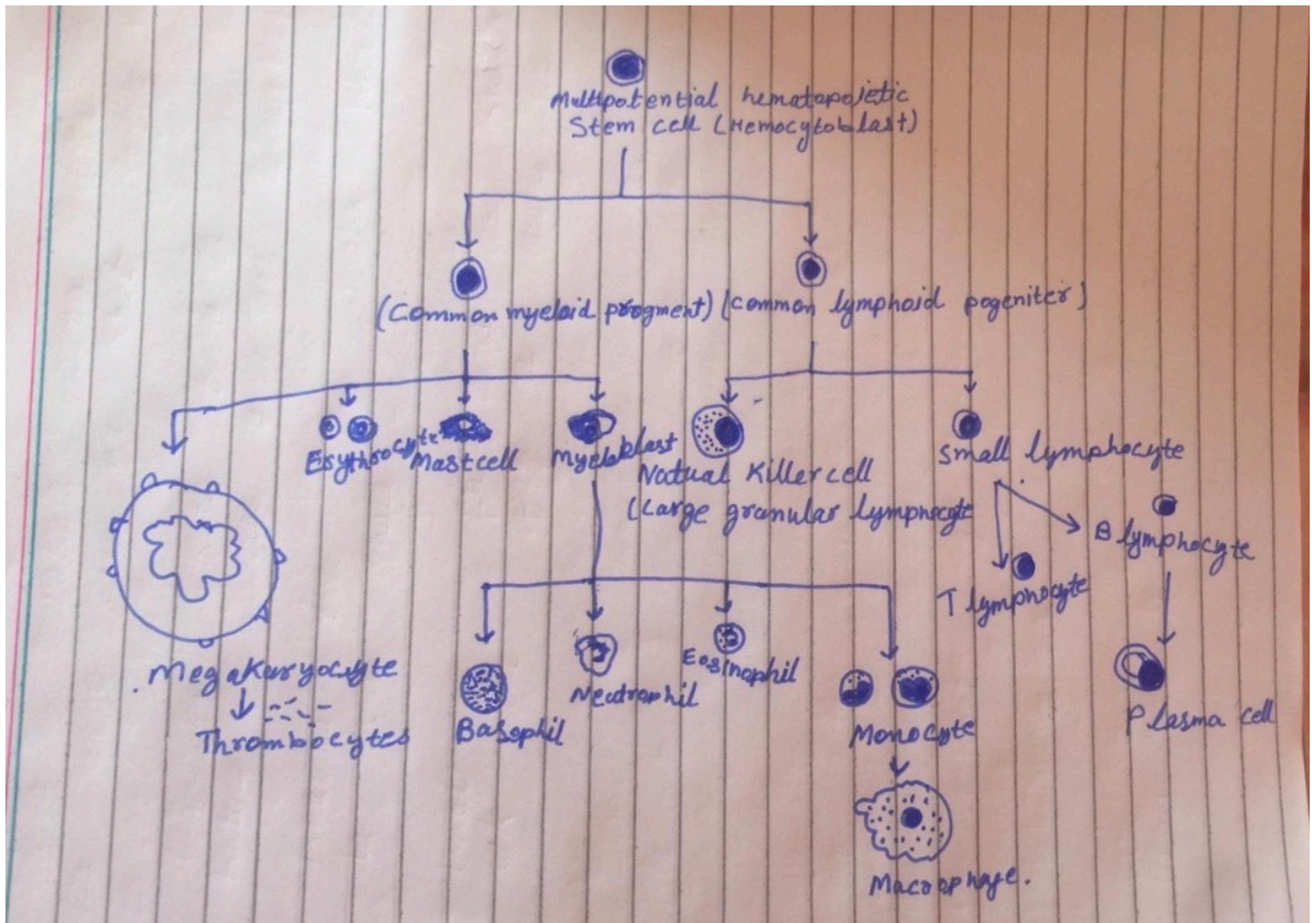
- **Attempt all questions from this section.**
- **Use Blue / Black Ink only. Do not use red color.**
- **Tick or encircle only one option in each given question.**

It's an open book Conceptual Assignment paper.
Time to Use your brain now.

1. Briefly explain the process of hematopoiesis along with diagrammatic illustration. (Marks 10)

Ans:-Hematopoiesis is the process by which blood cells are created. The monophyletic theory on hematopoiesis, which is widely accepted, suggests that all of the hematopoietic cells are generated on the basis of pluripotent stem cells, which become unipotential ones and differentiate into precursor cells before going on to form mature blood cells.

Hematopoiesis during the early stages of embryogenesis occurs in the yolk sac and subsequently in the liver. During the 3rd to 7th month of gestation it primarily occurs in the spleen and just before birth shifts to the marrow cavity and from birth onwards occurs primarily in the bone marrow.



2. What are the factors that influence the respiratory rate, explain in detail.

(Marks 10)

Ans:-Factors That Influence The Respiratory Rate:

The eight environmental factors effecting the rate of respiration are:

(1) Oxygen Content of the Atmosphere:

The percentage of oxygen in the surrounding atmosphere greatly influence the rate of respiration. But reduction of the oxygen content of the air, however, causes no significant lowering in the respiratory rate until the percentage drops to about 10%. At 5% oxygen definite retardation of respiration occurs

(2) Effect of Temperature:

Like most chemical reactions, the rate of respiration is greatly influenced by temperature. At temperatures higher than the optimum for respiration, the rate of respiration (in terms of oxygen utilized and CO₂ produced) falls due to inter-conversions of respirable materials.

(3) Effect of Light:

Light has indirect effects on the rate of respiration. With the increase in light intensity, the temperature of the surrounding atmosphere also increases thus affecting the rate of respiration

(4) Effect of Water Contents:-

Over a certain range, water content of the plant tissue greatly influence its rate of respiration. In most of the storage able seeds the moisture content is kept below the point which allows a rapid respiration. With the increase in moisture content, the rate of respiration is likely to go up with the result a rapid loss of viability will occur and at the same time the temperature will also rise and the grain may be spoiled

(5) Effect of Respirable Material:

Amount and kind of respirable material present in the cells greatly effect the rate and course of respiration. It has been shown that plants respire more rapidly after having been exposed to conditions favourable for photosynthesis during which carbohydrates are synthesized. Increase in respiration has also been observed to be associated with increase in soluble sugars.

3. Enlist different layers of skin, write a detailed note on epidermis.

(Marks 10)

Ans:- Layers of skin:-

The human skin is composed of two primary layers

- 1)The epidermis
- 2)dermis

Epidermis:-

Which provides waterproofing and serves as a barrier to infection.

Dermis:-

Which serves as a location for the appendage of skin.

Detail note on Epidermis:-

The epidermis is the top layer of your skin. It's the only layer that is visible to the eyes. The epidermis is thicker than you might expect and has five sublayers.

Epidermis is constantly shedding dead skin cells from the top layer and replacing them with new healthy cells that grow in lower layers. It is also home to our pores, which allow oil and sweat to escape.

The **epidermis** is composed of keratinized, stratified squamous epithelium. It is made of four or five layers of epithelial cells, depending on its location in the body. It does not have any blood vessels within it (i.e., it is avascular). Skin that has four layers of cells is referred to as "thin skin." From deep to superficial, these layers are the stratum basale, stratum spinosum, stratum granulosum, and stratum corneum. Most of the skin can be classified as thin skin. "Thick skin" is found only on the palms of the hands and the soles of the feet. It has a fifth layer, called the stratum lucidum, located between the stratum corneum and the stratum granulosum

It's divided in:

- Stratum corneum
- Stratum lucidum
- Stratum granulosm
- Stratum spinosum
- Stratum germinativum

4. Define lymphatic system, what are different components of lymphatic system?

(Marks 10)

Ans:-lymphatic system:-

the network of vessels through which lymph drains from the tissues into the blood.

Components of lymphatic system:-

The lymphatic system consists of the lymphatic vessels (capillary plexus, precollecting and collecting lymph vessels including lymphatic ampullae and diverticulum and lymphatic trunks and ducts), organs (lymph nodes, spleen, thymus and tonsils), tissue.

Lymph:-

Lymph is a fluid similar in composition to blood plasma. It is derived from blood plasma as fluids pass through capillary walls at the arterial end. As the interstitial fluid begins to accumulate, it is picked up and removed by tiny lymphatic vessels and returned to the blood

Lymphatic Vessels:-

Lymphatic vessels, unlike blood vessels, only carry fluid away from the tissues. The smallest lymphatic vessels are the lymph capillaries, which begin in the tissue spaces as blind-ended sacs. Lymph capillaries are found in all regions of the body except the bone marrow, central nervous system, and tissues, such as the epidermis, that lack blood vessels

5. What is blood pressure? How will you check and record blood pressure of a patient? (Marks 10)

Ans:- Blood pressure:-

Blood pressure is a measure of the force that your heart uses to pump blood around your body.

Check and record blood pressure of a patient:-

Blood pressure is measured in millimetres of mercury (mmHg) and is given as 2 figures: systolic pressure – the pressure when your heart pushes blood out diastolic pressure – the pressure when your heart rests between beats
For example, if your blood pressure is "140 over 90" or 140/90mmHg, it means you have a systolic pressure of 140mmHg and a diastolic pressure of 90mmHg. As a general guide: ideal blood pressure is considered to be between 90/60mmHg and 120/80mmHg high blood pressure is considered to be 140/90mmHg or higher low blood pressure is considered to be 90/60mmHg or lower

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