ODM EDUCATIONAL GROUP
Changing your Tomorrow

TISSUES

SUBJECT- BIOLOGY

CHAPTER NO- 6

Connective Tissue- structure, types and functions

PERIOD-9

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LEARNING OBJECTIVE

- Students will be able to explain the classification of connective tissue based on their structure and function.
- Student will be able to identify different types of connective tissues
- Student will be familiarized with the location of different types of connective tissues in different part of our body
- Learners will be sensitized about some of the examples of connective tissues
- Student will be able to differentiate between
- bone and cartilage
- blood and lymph

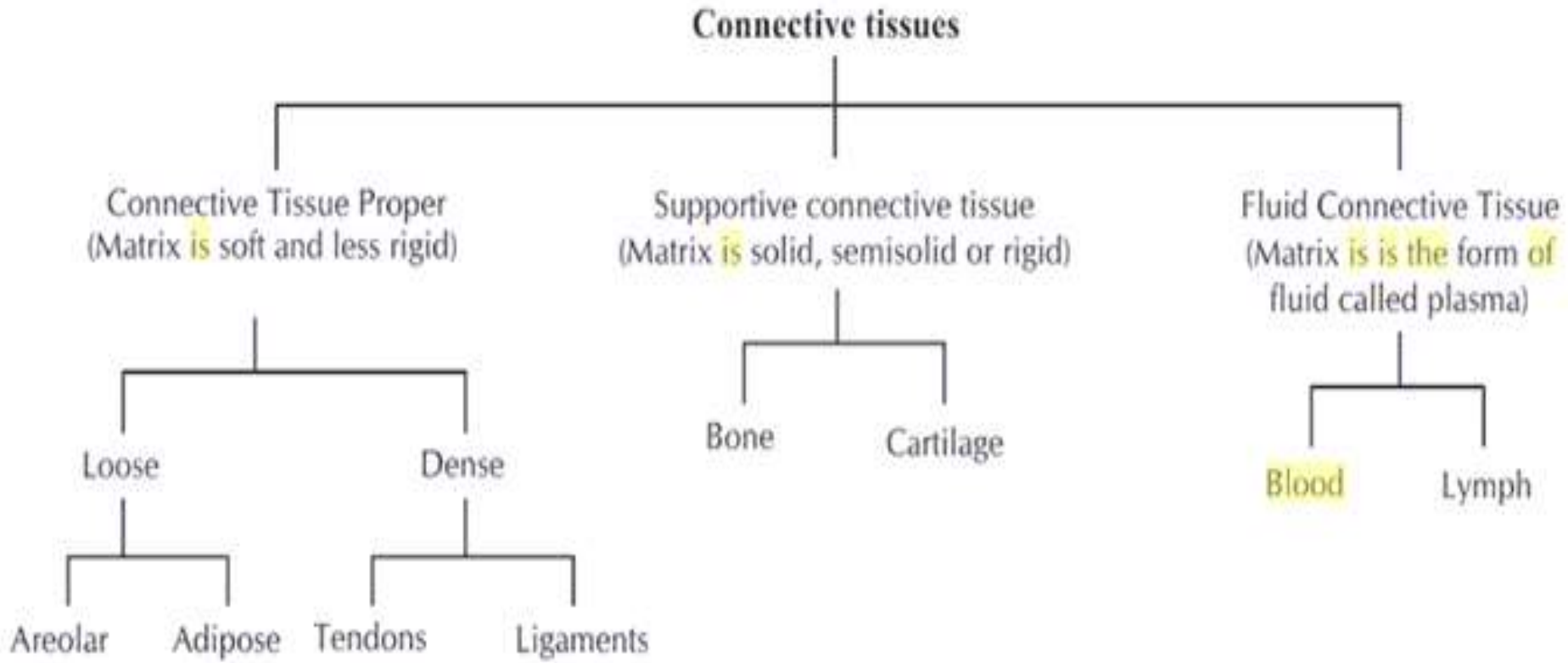
WARM UP QUESTIONS

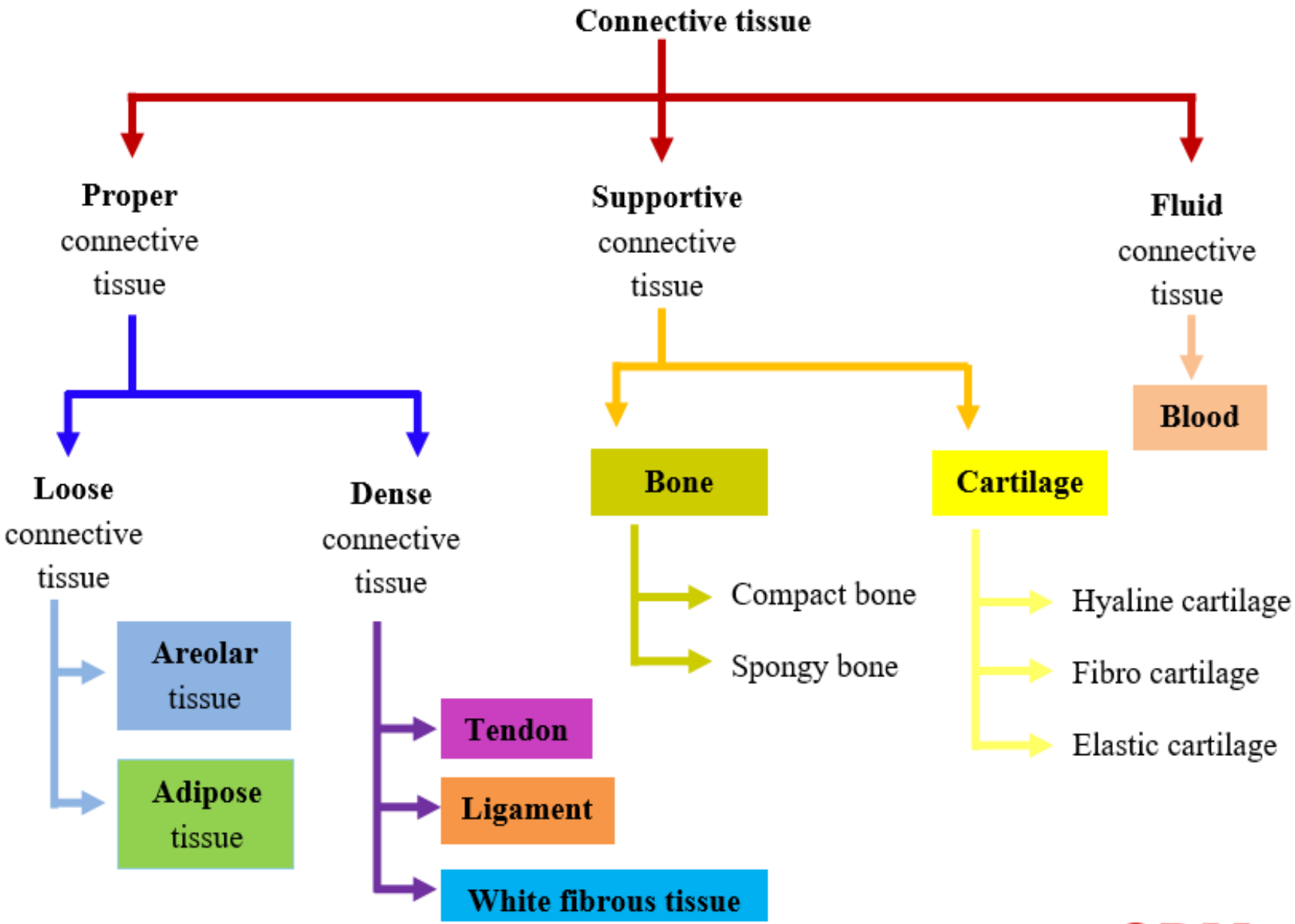
- What do you mean by connective tissues?
- Why it is named so?
- Is blood a tissue? If yes then which type of tissue?

MEANING OF CONNECTIVE TISSUE

- Connective tissue is the tissue that connects, separates and supports all other types of tissues in the body.
- Like all tissue types, it consists of cells surrounded by a compartment of fluid called the extracellular matrix (ECM)
  Specialized connective tissue; reticular, blood, bone, cartilage and adipose tissues

TYPES OF CONNECTIVE TISSUES

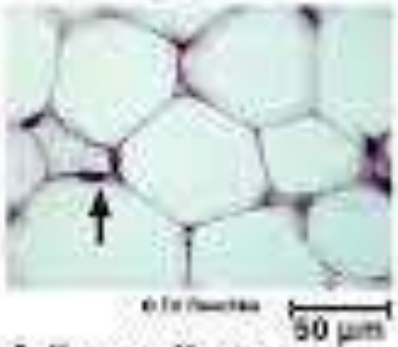




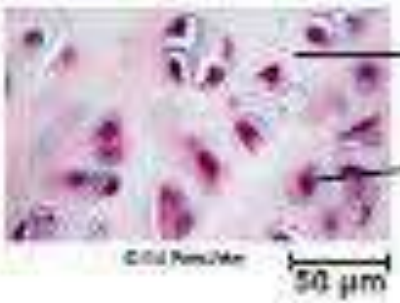
- A video on epithelial tissues types, structure and functions for better understanding.
- https://youtu.be/qxzk3DjtgAA

Connective tissue examples

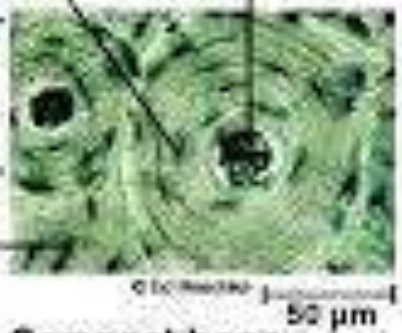
Loose fibrous connective tissue



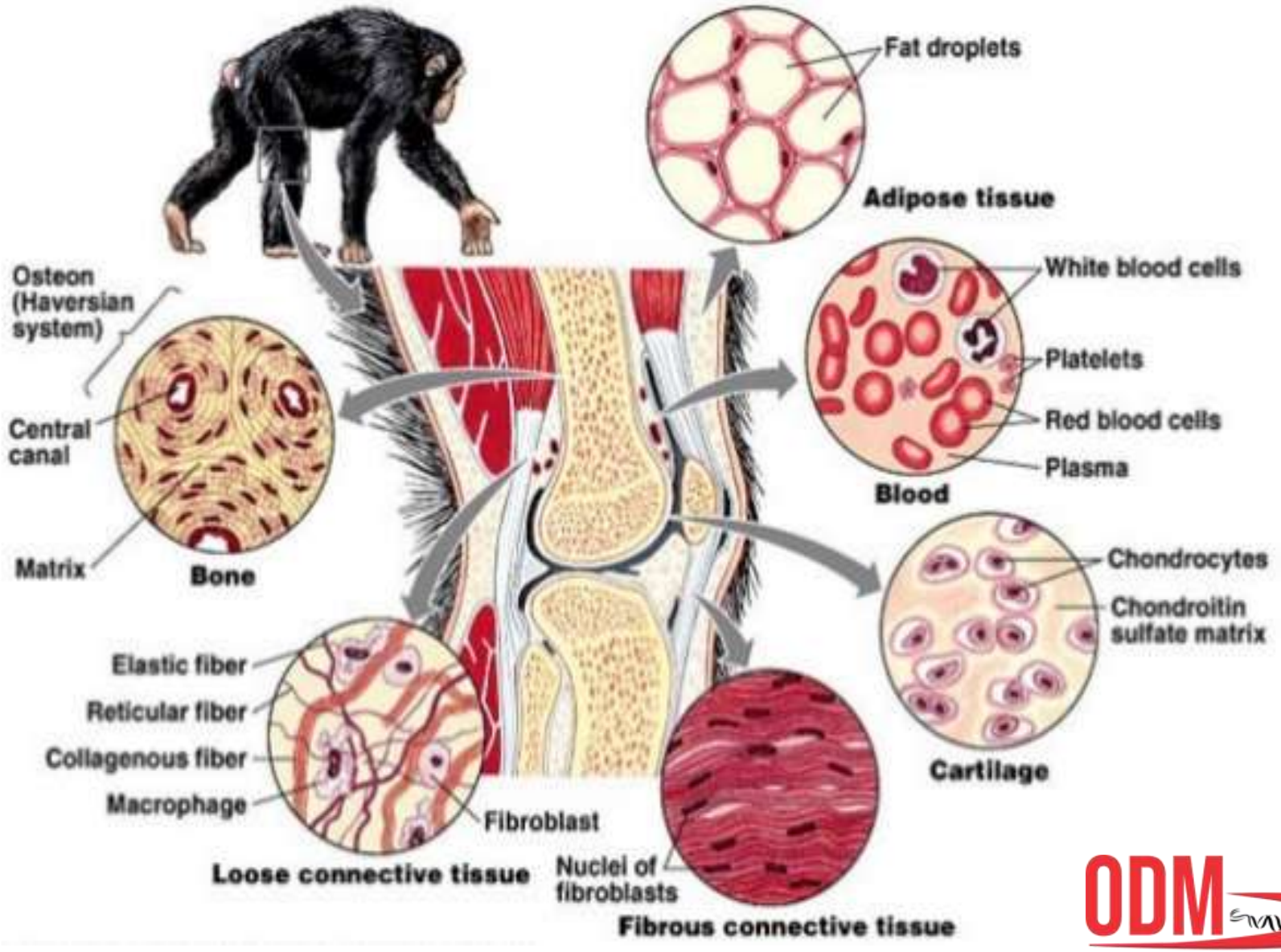
Adipose tissue



Hyaline cartilage



Compact bone



BONE AND CARTILAGE

Bone	Cartilage
1. Matrix is composed of a tough, inflexible material, the ossein.	1. Matrix is composed of a firm, but flexible material, the chondrin.
2. Matrix is always impregnated with calcium salts.	2. Matrix may be free or impregenated with calcium salts.
3. Bone cells lie in lucunae singly.	3. Cartilage cells lie in lacunae singly or in groups of two or four.
4. Osteocytes are irregular and give off branching processes in the developing bone.	4. Chondroblasts are oval and devoid of processes.
5. Lacunae give off canaliculi.	5. Lacunae lack canaliculi.
6. There are outer and inner layers of special bone forming cells, the osteoblasts, that produce new osteocytes, which secrete new lamellae of matrix.	6. There are no special cartilage-forming cells. Cartilage grows by division of all chondroblasts.
7. Matrix occurs largely in concentric lamellae.	7. Matrix occurs in a homogenous mass.
8. Bone is highly vascular.	8. Cartilage in nonvascular.
9. Bone may have bone marrow at the centre.	9. No such tissue is present.

Blood and lymph

Differences between Blood and Lymph			
1.	It is red in colour due to the presence of haemoglobin in red cells.	1.	It is colourless as red blood cells are absent.
2.	It moves away from the heart and towards the heart.	2.	It moves in one direction i.e. , from tissues to sub-clavians.
3.	It consists of plasma, RBC, WBC, and plastelets.	3.	It consists of plasma and WBC (maximum lymphocytes)
4.	Its plasma has more proteins, calcium and phosphorus.	4.	Its plasma has less protein, calcium and phosphorus.
5.	Glucose concentration is low.	5.	Glucose concentration is higher in lymph.
6.	Flow of blood is fast.	6.	Lymph flows very slowly.

HOME ASSIGNMENT

Q . why blood is called as fluid connective tissue?

Q. classify connective tissues

Q. on what basis connective tissue is classified

Q. differentiate between blood and lymph

Q. differentiate between bone and cartilage.

THANKING YOU

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