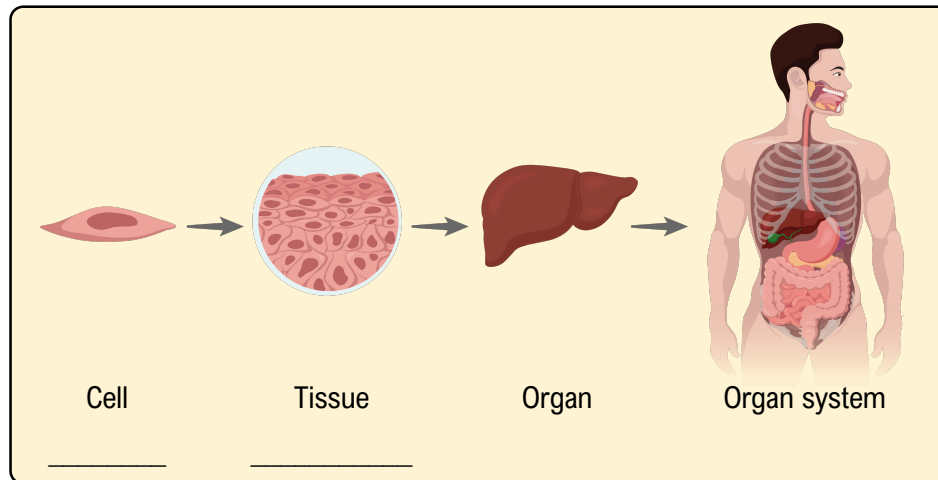


CONCEPT: LEVELS OF BODY ORGANIZATION

♦ Human body consists of ____ different connected levels of organization:

- ① Cellular level ② Tissue level ③ Organ level ④ Organ System level



1 Cell Level

♦ **Cell:** smallest functional unit of all _____ organisms, makes up other levels of organization.

- All cells contain: cell _____, cytoplasm, and a nucleus.

Cell Membrane:

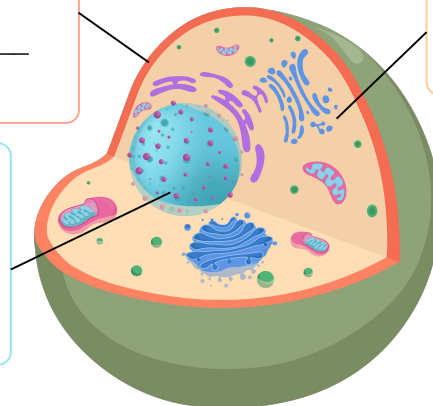
Protection, communication,
exchange of substances _____
and _____ of the cell.

Cytoplasm:

_____ -like substance,
surrounds internal structures.

Nucleus:

Contains _____, controls
cell reproduction, metabolism,
growth, etc.



EXAMPLE

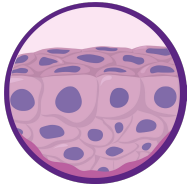
Which of the following statements is correct?

- a) Cytoplasm is a rigid structure which controls what goes in and out of cell.
- b) The nucleus contains genetic material and acts as the control center of the cell.
- c) Cytoplasm is a flexible structure and protects the cell from damage.
- d) Cell membrane is an impermeable barrier, protecting the cell from all invaders.

CONCEPT: LEVELS OF BODY ORGANIZATION

2 Tissue Level

- ◆ **Tissue:** a group of similar _____ that work together to perform related functions.
 - 4 types of tissues: a. Epithelial, b. Muscular, c. Connective, d. Nervous.

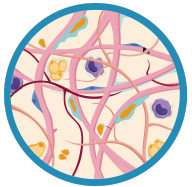
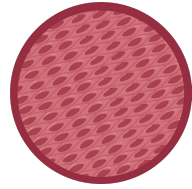


a. Epithelial Tissue

- ◆ Covers surfaces, lines cavities.
 - E.g., lining of stomach.
- ◆ _____, absorption, secretion, filtration.

b. Muscular Tissue

- ◆ **Skeletal:** attached to bone.
- ◆ **Smooth:** internal organs.
- ◆ **Cardiac:** heart.
- ◆ Contracts to create _____.



c. Connective Tissue

- ◆ Found in bones, cartilage, tendons, blood, fat.
- ◆ Structure, _____ and protection.

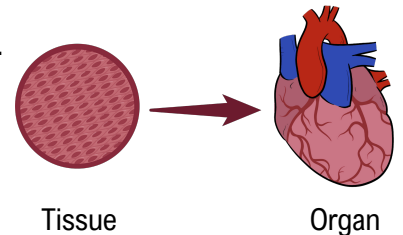
d. Nervous Tissue

- ◆ Found in brain, spinal cord and nerves.
- ◆ Detects stimuli, _____ signals.



3 Organ Level

- ◆ **Organs:** group of 2+ types of _____ working together for a specific function.



EXAMPLE






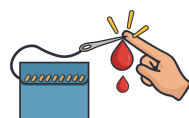






Select correct statement about the four types of tissues.

- a) Epithelial tissue protects by insulating organs and the body.
- b) Muscle tissue provides structural support and stores energy in the form of fat.
- c) Muscle tissue covers the surface of the body and lines organs to protect them.
- d) Connective tissue supports and binds other tissues like bones and tendons.

CONCEPT: LEVELS OF BODY ORGANIZATION

4 Organ System Level

♦ **Organ System:** a group of organs that coordinate to perform complex function(s).

Organ System	Organs/Structures	Function	Word Part(s)	Memory Tool
Integumentary System	Skin Hair Nails	<ul style="list-style-type: none"> Protection _____ regulation 	dermat/o = skin	 dermat/o /logist
Skeletal System	Bones Joints Cartilage	<ul style="list-style-type: none"> Structure Protection 	oste/o = bone arthr/o = _____	oste/o /porosis arthr /itis 
Muscular System	Muscles	<ul style="list-style-type: none"> _____ 	my/o, muscul/o = muscle	 My muscles!
Nervous System	Brain Spinal cord Nerves	<ul style="list-style-type: none"> Communication _____ 	spin/o = spine neur/o = nerve	 neur/o /logy
Cardiovascular System	Heart Arteries Veins	<ul style="list-style-type: none"> Transports substances Removes waste products 	cardi/o = heart vascul/o = blood _____	
Blood System	Blood	<ul style="list-style-type: none"> Transports substances 	hemat/o = blood	
Lymphatic System	Lymph nodes Spleen Tonsils	<ul style="list-style-type: none"> _____ 	lymph/o = lymph	lymph /oma 
Endocrine System	Pituitary gland Adrenal gland	<ul style="list-style-type: none"> Communication Control 	crin/o = _____	
Respiratory System	Lungs Trachea	<ul style="list-style-type: none"> Gas exchange 	pulm/o = lungs thorac/o = _____	
Digestive System	Stomach Intestines Liver	<ul style="list-style-type: none"> Ingestion Digestion & absorption 	gastr/o = stomach enter/o = small intestine hepat/o = _____	 hepat /itis
Urinary System	Kidneys Bladder	<ul style="list-style-type: none"> _____ & removal of waste products 	nephro/o = kidney ur/o, urin/o = urine	 ur /ol/ogy
Reproductive System	Ovaries Testes	<ul style="list-style-type: none"> Reproduction 	gynec/o = female prostat/o = _____	prostat /itis 

CONCEPT: LEVELS OF BODY ORGANIZATION

EXAMPLE

Match each organ to their corresponding organ system.

1. Kidneys	
2. Lymph nodes	
3. Joints	
4. Hair	
5. Liver	

- | | |
|---------------------|-------------------------|
| a) Endocrine System | d) Skeletal System |
| b) Digestive System | e) Urinary System |
| c) Lymphatic system | f) Integumentary System |

PRACTICE

Fill in the correct form for each of the blanks given.

Noun
1. _____
2. Muscle
3. Blood
4. Chest
5. _____

Adjective
Gastric

Hepatic