

Review Questions for Histology topic

Review questions will not be collected and are not worth any points. Doing them will, however, help you prepare for the midterms and quizzes in this course. Furthermore, some of these review questions will appear on the final exam (although the numbers within the questions may be changed).

1) Which term is used to describe the part of a neuron that detects stimulation?

- A) cell body
- B) dendrites
- C) axon
- D) myosin

2) The fibrous protein abundant in dense connective tissue is:

- A) insulin.
- B) cartilage.
- C) collagen.
- D) dentin.

3) The skin is considered an organ because it

- A) produces pigments.
- B) is composed of several tissues.
- C) protects the body.
- D) allows the body to detect sensory stimuli.

4) Adipose tissue is a type of

- A) cartilage
- B) endoplasmic reticulum
- C) connective tissue.
- D) blood.

5) Define the following terms as they were defined in class:

a) Histology

b) Cytoplasm

c) Tissue

d) Organ

e Organ system

f) Epithelial tissue

g) Muscle tissue

h) Nervous tissue

i) Connective tissue

6) A(n) _____ is a group of cells of the same type functioning together.

7) An organ is a structure made of several types of _____ working together for a common task.

8) Several organs working together on a common task form a(n) _____.

9) Arrange the following terms in the proper order, from smallest to largest:

Organ

Tissue

Cytoplasm

Organ system

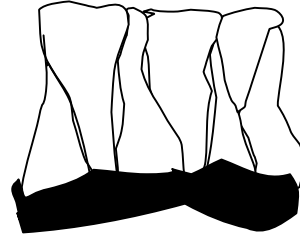
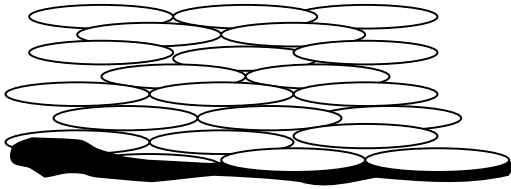
Cell

Organelle

10) The four major tissues types of the body are _____, _____, _____ and _____.

11) _____ tissue has tightly packed cells that form protective linings, such as the skin and the inner lining of hollow organs.

12) Name the two epithelial tissues types shown below and answer the question beneath the drawings. Use the full and complete names of each tissue.



Tissue: _____

Tissue: _____

What do the black lines underneath each tissue represent?

The top side of each tissue above is called the _____ of the tissue.

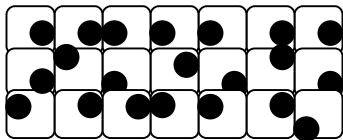
13) We discussed three types of muscle tissue in class. In the blank after each description, name the muscle tissue type(s) that match the description. Some blanks may have more than one answer. Write all answers.

- a) You cannot make it contract whenever you want: _____
- b) It is found only in the heart: _____
- c) It is the only voluntary type of muscle: _____
- d) It is usually found as part of hollow organs: _____
- e) It has actin and myosin inside: _____
- f) It has intercalated disks: _____

14) The drawings below shows cells from two of the tissues we discussed in lecture (the black dots are the nucleus of each cell). From the picture of the cells and description of the tissue, name each tissue type. Give the full and complete name of the tissue, which will require more than a one-word answer.



It contracts and is found in many internal organs (such as the stomach).



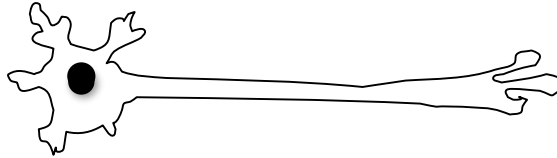
It lines internal cavities.

15) _____ tissue is characterized by cells that carry signals rapidly between body parts.

16) The top side of an epithelial tissue (the side that boards the hollow space inside the organ) is called the _____ of the epithelial tissue.

17) The bottom side of an epithelial tissue (the side that sits on top of some other tissue type) has a sticky material that keeps the epithelial tissue anchored in place. This sticky material is called the _____ of the epithelial tissue.

18) The cell below is a(n) _____.



19) The single long extension of the neuron cell body is called a _____. Its function is to _____.

20) The smaller numerous extensions from the neuron cell body are called _____. Their function is to _____.

21) The cells of nervous tissue that are not neurons (but that assist the neurons) are called _____ cells.

22) The round part of a neuron that contains the nucleus and other organelles is called the _____ of the neuron.

23) The six major classes of connective tissue are _____, _____, _____, _____, _____, and _____.

24) The cells of connective tissue usually do/don't (circle one) touch their neighbors.

25) The _____ is the term for all the material that fills the spaces between the cells of connective tissues.

26) The extracellular matrix (EM) is made of two components. One part is the _____ proteins, which bind the cells together. The other part of the EM is the material that takes up most of the space between the cells. This part of the EM is called the _____, and it can be a gel, a solid, or a liquid.

27) Which of the connective tissue types is...

a) A soft jelly-like tissue that surrounds and protects many organs in the body?

b) Is part of tendons and ligaments? _____

28) _____ is a tough, extremely strong fibrous protein which gives dense connective tissue strength.

29) The major cells in loose and dense connective tissue are called _____.

30) The major cells in bone are called _____.

31) The major cells in cartilage are called _____.

32) Name the three types of cartilage: _____, _____, and _____.

Circle the one that forms discs between weight-bearing joints. Draw a star on the one that is found covering the tips of bones. Draw a box on the softest, most flexible type.

33) _____ tissue is the one connective tissue where the cells are packed tightly together, so it has no extracellular matrix.

34) Name the three types of blood cells: _____, _____, and _____.

Circle the type that controls blood clotting. Draw a star on the type that carries oxygen. Draw a box on the type that fights infections.

35) Write the full name of the connective tissue types described below. Be as exact as possible. Some answers require more than one word.

a) Stores fat: _____

b) Its extracellular matrix is many strands of collagen with little ground substance:

c) Has a liquid extracellular matrix _____

d) Its extracellular matrix contains calcium phosphate _____

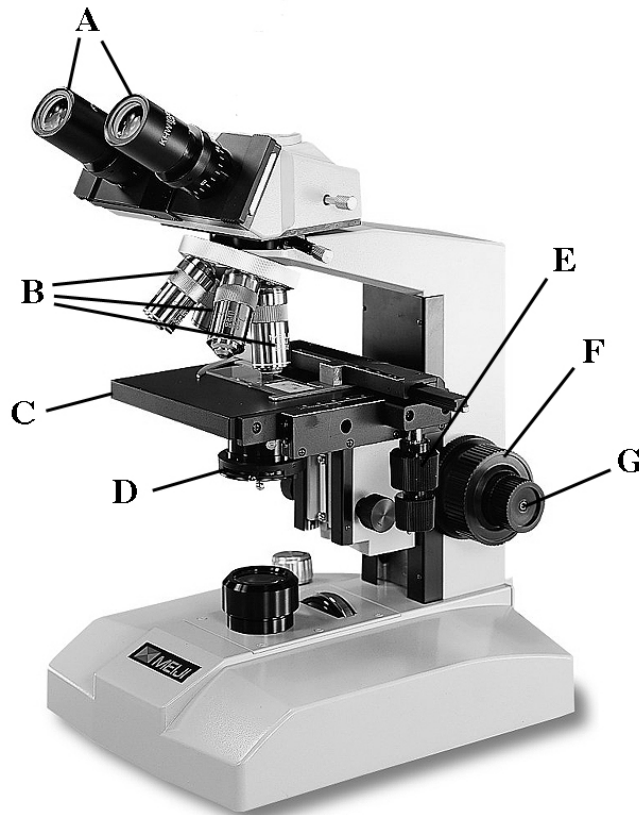
e) A rubbery tissue found at the tips of bones _____

36) Name the type of protein fiber found in the extracellular matrix of almost all connective tissues: _____. There are two connective tissues, however, that have little if any of this protein in their extracellular matrix. Name the two connective tissues that do not contain this protein: _____ and _____.

37) We discussed six basic types of connective tissue in class. In the table below, name each tissue type, the cell(s) found in the tissue, and the composition of its extracellular matrix (the protein fibers and ground substance). (Adipose does not have an extracellular matrix).

<u>Connective Tissue:</u>	<u>Cell(s):</u>	<u>Extracellular matrix:</u>
a) _____	_____	_____
b) _____	_____	_____
c) _____	_____	_____
d) _____	_____	_____
e) _____	_____	_____
f) _____	_____	_____

38) Inspect the picture of a microscope and then answer the questions below it.



- a) Name parts A: _____
- b) Name parts B: _____
- c) Name part C: _____
- d) Name part D: _____
- e) Name part E: _____
- f) Name part F: _____
- g) Name part G: _____
- h) What is the magnification factor of part A? _____ X
- i) When the part B lens of 40X magnification is being used, what is the total magnification of the microscope? _____ X
- j) Which part moves your view of the slide left, right, backwards, or forwards? _____
- k) Which part do you use to set the brightness to a comfortable level? _____
- l) On which part B lens, the lowest, the medium, or the highest magnification, should you begin your viewing of a slide? _____

The review questions in this handout do not include any photographs of tissues for you to practice visual tissue identification. On exams and quizzes, however, you will be expected to identify tissues by viewing them under a microscope or by seeing a photograph of them. To help you in practicing visual identification of tissues, I suggest you find websites on the internet that contain tissues images by searching with the keywords: Tissue Histology Quiz. (If you find a really good histology quiz website, please let me know and I will add it to the list below).

The following are some good visual histology review sights that I have found by searching with the keywords Tissue Histology Quiz. Some of these histology sites include tissues and terms that we did not include in our class. You can ignore the internet slides with tissues and terms that we did not cover.

<http://quizlet.com/2621787/learn/>

<http://www.proprofs.com/quiz-school/story.php?title=basic-histology-quiz>

http://www.science.oregonstate.edu/~bradleyp/ap/all_hist/

https://www.easynotecards.com/print_cards/69595

http://medcell.med.yale.edu/image_gallery/home.php

<http://education.med.nyu.edu/Histology/courseware/modules/connective-tissue-q/>

Answers for Review Questions for Histology topic:

1) B

2) C

3) B

4) C

5) a) The study of tissues using a microscope.

b) The liquid and organelles that fill the inside of a cell.

c) A group of cells of the same type functioning together.

d) A structure made of several tissues functioning together.

e) Many organs functioning together.

f) Sheets of tightly packed cells that (a) form protective linings, and (b) sometimes form surfaces for absorption and secretion of substances.

g) Tissue that causes movement of body parts or movement of substances within the body by contracting.

h) Tissue that (a) senses stimuli, and (b) carry signals rapidly between body parts.

i) Tissues that surround, protect, or support other tissues.

6) Tissue

7) Tissues

8) Organ system

9) Organelle, cytoplasm, cell, tissue, organ, organ system

10) Epithelial, muscle, nervous, and connective

11) Epithelial

12) Stratified squamous epithelial tissue
Pseudostratified columnar epithelial tissue
The basement membrane
Free edge

- 13)
 - a) Smooth muscle and cardiac muscle
 - b) Cardiac muscle
 - c) Skeletal muscle
 - d) Smooth muscle
 - e) Skeletal muscle, smooth muscle, and cardiac muscle
 - f) Cardiac muscle

- 14) Smooth muscle tissue
Stratified cuboidal epithelial tissue

- 15) Nervous

- 16) Free edge

- 17) Basement membrane

- 18) Neuron

- 19) Axon
Carry the signal between body parts

- 20) Dendrites
Detect stimuli

- 21) Neuroglial cells

- 22) Cell body

- 23) Loose connective tissue
Dense connective tissue
Bone
Cartilage
Adipose
Blood

- 24) Don't

- 25) Extracellular matrix

- 26) Fibrous proteins
 - Ground substance

- 27) a) Loose connective tissue
 - b) Regular dense connective tissue

- 28) Collagen

- 29) Fibroblasts

- 30) Osteocytes

- 31) Chondrocytes

- 32) Elastic cartilage (boxed)
 - Hyaline cartilage (starred)
 - Fibrocartilage (circled)

- 33) Adipose tissue

- 34) Red blood cells (starred)
 - White blood cells (boxed)
 - Platelets (circled)

- 35) a) Adipose tissue
 - b) Dense connective tissue
 - c) Blood
 - d) Bone
 - e) Hyaline cartilage

- 36) Collagen
 - Adipose tissue and blood

- 37) a) Loose connective tissue, cells = fibroblasts, EM = small collagen fibers with much jelly-like ground substance.
- b) Dense connective tissue, cells = fibroblasts, EM = large bundles of collagen with very little ground substance.
- c) Bone, cells = osteocytes, EM = Calcium phosphate with collagen fibers.
- d) Cartilage, cells = chondrocytes, EM = Chondrin with collagen fibers.
- e) Adipose, cells = adipocytes. (No EM in adipose tissue).
- f) Blood, cells = red blood cells, white blood cells, and platelets. EM = a watery ground substance called “plasma” (no fibrous protein are in the EM of blood).
- 38) a) Ocular lenses (also called eyepiece lenses)
- b) Objective lenses
- c) Stage
- d) Condenser
- e) Mechanical stage knobs
- f) Coarse focus knob
- g) Fine focus knob
- h) 10X
- i) 400X
- j) The mechanical stage knobs (e)
- k) The condenser iris diaphragm (d)

1) The lowest power objective lens