FINAL EXAM for Module 3: Body Tissues

Name

NOTE: If some of these questions seem familiar, that is because you've seen them before. These questions were taken from the online quizzes you did while doing module 3. Still, it's been a while since you've seen some of these, so it might still be a challenge to get them all right. Good luck!

- 1) In a muscle fiber, the ends of the sarcomeres are marked by: a) A bands b) Z lines c) X lines d) M lines
- 2) What role does calcium play in the binding of myosin to actin?
 - a) It changes the shape of tropomyosin so that the myosin binding sites are exposed.
 - b) It binds to the myosin fibers, making them more flexible.
 - c) It causes ATP to be released.
 - d) It binds to myosin, causing it to move closer to actin.
- 3) Which one of these is NOT a member of the innate immune system? a) neutrophil b) B cell c) NK cell d) macrophage e) basophil
- 4) Which one of these is NOT a part of the adaptive (acquired) immune system?a) T helper cellsb) T killer cellsc) NK cellsd) B cells
- 5) Where do the protein gadgets come from that form the Membrane Attack Complex?a) The bone marrow makes them.b) The B cells make them.c) The liver makes them.d) The T cells make them.
- 6) What is the nature of the "toxins" that killer T cells use?a) They are super oxides. b) They are granzymes that act on cellular machinery causing apoptosis.c) They are poisons, similar to neurotoxins. d) They are enzymes that dissolve everything in sight.
- 7) In order for a B cell to switch from making IgM antibodies to making IgGs, what must happen?
 a) A T(h) 2 cell must give the "okay."
 b) A T(h)1 cell must give the "okay."
 c) A macrophage must give the "okay."
- 8) What do you call an activated B cell that is cranking out antibodies?a) memory cell b) a naive cell c) a regulatory cell d) a plasma cell e) an antibody cell
- 9) Which type of antibody looks like 5 Y's stuck together? a) IgA b) IgE c) IgG d) IgM
- 10) How do T cells know where to look for pathogens, either inside or outside of the body cells?a) The macrophages tell them.b) The body cells tell them.c) The B cells tell them.d) They sense it directly.
- 11) What happens to T cells when they mature?a) They turn into either CD4 or CD8 cells.c) They get larger.b) They start killing pathogens right away.d) They begin making antibodies.
- 12) What is a T cell <u>receptor</u> designed to recognize? a) protein samples b) pathogens c) MHC I d) MHC II
- 13) Which type of T cell recognizes MHC II? a) CD8 killer b) CD4 helper
- 14) What type of medical procedure will require a careful examination of the patient's MHC I? a) heart surgery b) brain surgery c) transplant d) blood transfusion
- 15) What do antibodies do? a) stick to antigens b) stimulate to B cells c) start the inflammatory process
- 16) Macrophages have a hook called CD31 which is for interacting with:a) other macrophagesb) pathogensc) neutrophilsd) dendritic cellse) mast cells
- 17) What organ stores monocytes? a) pancreas b) liver c) bones d) thymus e) spleen
- 18) How long do neutrophils live? a) a few days b) a few weeks c) a few months d) a few years
- 19) How long to erythrocytes live? a) a few days b) a few weeks c) a few months d) a few years
- 20) How long to B memory cells live? a) a few days b) a few weeks c) a few months d) a few years

21) Which type of person is a neutrophil most like? a) nurse b) doctor c) first responder d) taxi driver			
22) What is odd about the nucleus of a neutrophil? a) It is large. b) It is small. c) It is missing. c) It has several lobes.			
 23) When allergens bind to IgEs on the surface of mast cells, what happens? a) Histamine is released from those vesicles where it was stored. b) The mast cell dies. c) Calcium is released so that clotting can occur. d) The IgEs fall off the surface. 			
24) Which of these cells contains histaminase, which neutralizes histamine?a) macrophagesb) basophilsc) eosinophilsd) neutrophils			
25) What does histamine do? a) Dilate capillaries b) Irritate nerve endings c) Make capillaries leak d) All of these			
 26) What do basophils, eosinophils and mast cells all have in common? a) They all turn the same color with acidic stain. b) They have vesicles called granules. c) They all do the same job. d) They all have antibodies attached to their surfaces. 			
27) What do eosinophils fight? a) worms b) bacteria c) viruses d) allergens e) protozoans			
 28) Hemoglobin is a classic example of this type of protein structure: a) primary b) secondary c) tertiary d) quaternary 			
 29) When hemoglobin is recycled, what is the "globin" part broken down into? a) simple sugars b) amino acids c) triglycerides d) nucleic acids e) all of these 			
 30) "Heme" is broken down and recycled in several steps. After the first step, the broken heme is called: a) bilirubin b) biliverdin c) transferrin d) hemotrophin 			
31) What organ controls how many red blood cells are produced? a) liver b) spleen c) kidneys d) bone marrow			
32) What organ recycles old erythrocytes? a) liver b) spleen c) kidneys d) intestines e) bone marrow			
33) How many heme molecules can one hemoglobin hold? a) 1 b) 4 c) 8 d) hundreds e) thousands			
 34) How does the shape of a platelet change when it is activated? a) Platelets begin to shrink. b) Platelets grow much larger, up to ten times their original size. c) Platelets begin to divide and multiply. d) Platelets grow spikey-looking "arms." 			
 35) Albumins are blood proteins that act like taxis. Which of these would an albumin protein NOT carry? a) cholesterol b) lipids c) hormones d) ions e) sugars 			
36) For every one white blood cell, there are this many red cells: a) 6 b) 60 c) 600 d) 6000			
37) What does the megakaryocyte cell produce? a) granulocytes b) myeloid cells c) platelets d) erythrocytes			
 38) What happens in spongy bone? a) Cellular messes are cleaned up. c) Bones can flex and bend. b) Blood cells are made. d) Compact bone is made. 			
39) Which one of these would NOT be found in a Haversian canal? a) nerve b) vein c) artery d) osteocyte			
40) What do osteoblasts do? a) Make collagen b) Make minerals c) Recycle bone tissue			
41) Which type of tissue has no capillaries and no nerves? a) adipose tissue c) cartilaginous b) loose connective tissue d) dense irregular tissue			
 42) Which of these places would you NOT find dense irregular connective tissue? a) epiglottis b) scar tissue c) dermis of skin d) periosteum around bones 			
43) Which of these is NOT a type of connective tissue? a) pads between vertebrae b) epidermis of skin c) long bones d) blood			
44) What is inside adipocytes? a) nothing b) water c) lipids d) glucose molecules e) starches			
45) Which of these is really good at absorbing things? a) goblet cells b) microvilli c) cilia d) basement membrane			

- 46) Which type of epithelial cell is found in very thick layers?a) simple squamousb) stratified squamousc) stratified columnard) stratified cuboidal
- 47) Which type of epithelial cell is specialized for secretion? a) squamous b) cuboidal c) columnar
- 48) Which type of epithelial cell is designed for nutrient and gas exchange? a) squamous b) cuboidal c) columnar
- 49) What does a goblet cell make? a) collagen b) mucus c) blood d) food e) energy g) tears
- 50) What attaches epithelial cells to the layers of collagen underneath? a) hemidesmosomes b) desmosomes c) gap junctions d) adhesion junctions

For each of these statements, write T for "true" or F for "false."

- 51) ____ Microvilli and cilia are basically the same thing.
- 52) ____ Basement membrane is not made of cells.
- 53) ____ "Soma" is Greek for "body."
- 54) ____ Fibroblasts make the capillaries found in loose connective tissue.
- 55) ____ Hyaline cartilage looks smooth and shiny. This is because it has specialized cells and ground substance, but no protein fibers.
- 56) ____ Ligaments connect bone to muscle.
- 57) ____ Adipocytes can be classified as fibrous connective tissue because inside their vesicles are tiny fibers.
- 58) ____ "Fat" is actually a type of fibrous connective tissue.
- 59) ____ Spongy bone can also be called trabecular bone.
- 60) ____ Osteocytes on the outer rings of the osteon get their nutrients passed along to them by all the cells that are closer to the blood vessels in the central canal.
- 61) ____ Osteons grow large enough that you can see them without a microscope.
- 62) ____ The central canal and the Haversian canal are the same thing.
- 63) ____ The protein fibers floating in blood are called fibrin."
- 64) ____ 91 percent of the blood is plasma.
- 65) ____ Antibodies act as "taxis" to transport things through the blood.
- 66) ____ The reason that some substances need taxis to get through the blood is because they are hydrophobic.
- 67) ____ All leukocytes are lymphocytes, but not all lymphocytes are leukocytes.
- 68) ____ The chemical "Warfarin" blocks the action of vitamin K.'
- 69) ____ Another name for platelets is thrombocytes.
- 70) ____ Platelets naturally stick to collagen.
- 71) ____ If you have type A blood, this means you have the best type of blood.
- 72) ____ Type B blood "hates" type A proteins.
- 73) ____ Type AB blood has no proteins on its surface.
- 74) ____ Type AB blood will not make antibodies to either A or B proteins.
- 75) ____ The sodium potassium pump is what restores the resting potential in the neurons' axon.

What are these things?

Match each picture to its correct name.



96)		
	(the blue stuff)	
97)		
	(the pink arrows)	
98)		
00)		
99)		
100)	
	(the brown stuff behind the blue))

Words you might want to use:

nucleus, macrophage, collagen, neutrophil, elastin, mast cell, fibroblast, neuron, microglia, T tubule, astrocyte, action potential, oligodendrocyte, ependymal cells, synaptic cleft, pericyte, lymphocytes, adipocytes, proteoglycans, reticular fibers, myofibril, sarcoplasmic reticulum, mitochondria, neurotransmitters, sodium channel



