

Part I (1.5 points each) Choose the best answer and mark it on your Scantron form.

1. A benign tumor is one that is

- A. harmless B. small C. not cancerous
D. grows quickly E. usually rapidly fatal

2. Simple squamous epithelia are most commonly founds in regions of the body that

- A. require diffusion B. require mucus C. require protection
D. both A and B E. all of the above

3. Transitional epithelium are different from all other epithelia because

- A. the apical layer is cuboidal B. it has tight junctions
C. it has many cell layers D. the apical layer changes shape
E. it is not found in healthy people

4. Which of the following types of glands releases its contents via exocytosis?

- A. merocrine B. holocrine C. apocrine
D. both A and B E. all of the above

For questions 5 through 7, match the description to the correct type of intercellular junction.

KEY: A. desmosomes B. tight junctions C. gap junctions
D. all of the above E. none of the above

5. allows cells to communicate

6. prevents materials from passing between cells

7. often found between osteocytes

8. The function of stem cells is to produce

- A. specialized cells B. proteins C. antibodies to fight disease
D. extracellular matrix E. DNA

9. Cancer of a connective tissue is called a

- A. carcinoma B. metastasis C. sarcoma
D. leukemia E. all of the above

10. The apical side of an epithelial tissue usually faces a

- A. basement membrane B. connective tissue C. lumen
D. layer of dead cells E. layer of dividing cells

11. Which type of tissue is avascular?

- A. stratified squamous epithelium B. elastic cartilage C. compact bone
D. both A and B E. all of the above

12. Some exocrine glands are

- A. merocrine glands B. serous glands C. compound glands
D. multicellular glands E. all of the above

13. Fibroblasts are found in which tissue?
 A. transitional epithelium B. spongy bone
 C. dense regular connective tissue D. fibrocartilage
 E. all of the above
14. Hair is made of
 A. collagen B. calcium carbonate C. keratin
 D. globin E. reticular fibers
15. The main ingredient in creams which help hide wrinkles is
 A. keratin B. collagen C. elastin
 D. lanolin E. water
16. A first degree burn damages the
 A. epidermis B. dermis C. hypodermis
 D. both A and B E. all of the
17. The dark coloring of a bruise is due to
 A. a bacterial infection B. damaged collagen fibers
 C. scar formation D. bleeding within the skin
 E. macrophages healing the skin
18. The function of the papilla of a hair follicle is to
 A. provide nourishment to the hair root B. determine the color of a hair
 C. prevent the hair from drying out D. prevent infection
 E. attach the hair follicle to the hypodermis
19. The reticular layer of the skin has more _____ than the other layers of the skin
 A. cells B. collagen C. melanocytes
 D. blood vessels E. keratinocytes
20. Psoriasis is caused by
 A. a bacterial infection B. exposure to UV light
 C. metastasizing keratinocytes D. an autoimmune reaction
 E. repeated injury to the skin
21. Lips turn blue when a person is colds because
 A. more blood is flowing to the lips
 B. cold makes hemoglobin become slightly blue
 C. blood vessels on the surface constrict
 D. veins on the surface get larger
 E. cells are dying
22. The most common cell type in the hypodermis is
 A. dead cells B. adipocytes C. leukocytes
 D. melanocytes E. keratinocytes
23. Basal cell carcinoma is rarely fatal because the cells
 A. die B. usually do not metastasize C. do not divide
 D. are not cancerous E. are benign

24. "Goose bumps" occur due to
- over-stimulation of secretion from apocrine glands
 - separation of the dermis from the epidermis
 - opening of blood vessels in the skin
 - arrector pili muscles raising the angle of a hair
 - contraction of desmosomes in the skin
25. Scar tissue is usually
- adipose tissue
 - clotted blood and dead cells
 - stratified squamous epithelium
 - dense irregular connective tissue
 - none of the above
26. Flat bones contain
- spongy bone
 - compact bone
 - red marrow
 - all of the above
 - none of the above
27. Spongy bone is considered a connective tissue because it has
- trabeculae
 - extracellular matrix
 - osteocytes
 - fibroblasts
 - all of the above
28. In a five year old child, endochondral ossification is occurring in the
- epiphyseal plates
 - sesamoid bones
 - bones of the skull
 - all of the above
 - none of the above
29. Wormian bones are formed by
- injuries to the endosteum
 - fracture of the epiphyseal plate
 - ossification of dense fibrous connective tissue
 - ossification of tendons
 - too little calcium during embryonic development
30. The medullary cavity of a long bone in an adult is filled with
- red marrow
 - fat
 - dense fibrous connective tissue
 - blood
 - osteocytes
31. Which of the following is true of osteoclasts?
- they are found in the endosteum
 - they give rise to osteoblasts
 - they make calcium carbonate and other minerals
 - they are not found in healthy bone
 - they kill osteocytes
32. One of the differences between flat bones and long bones is that flat bones do not have
- yellow marrow
 - red marrow
 - spongy bone
 - compact bone
 - endosteum

33. The function of canaliculi in an osteon is to
- A. allow nutrients to reach the osteocytes
 - B. allow osteocytes to move within the bone
 - C. strengthen the bone
 - D. allow broken bones to heal
 - E. both C and D
34. Cellulite is
- A. a type of adipose tissue
 - B. connective tissue within the hypodermis
 - C. a highly vascularized region of skin
 - D. all of the above
 - E. none of the above
35. Nails are made of
- A. collagen
 - B. calcium
 - C. keratin
 - D. both A and B
 - E. both A and C
36. The suffix "blast" means
- A. a cell which can divide
 - B. a stem cell
 - C. a cell which has undergone apoptosis
 - D. a cell which makes extracellular matrix
 - E. a specialized cell

Part II (10 points each) Choose 3 of the following questions. Answer each question fully using the appropriate terminology and concepts. Use colors for your drawings and make sure your drawings are properly labeled Write neatly. If you answer a fourth question, I will only grade the first three.

For questions 1 through 3, match the cellular structure with its function

1. Draw a typical cell and label and explain the functions of the following parts:

- | | |
|---------------------------------|--------------------------------|
| A. plasma membrane | E. rough endoplasmic reticulum |
| B. cytoskeleton | F. mitochondrion |
| C. nucleolus | G. golgi complex |
| D. smooth endoplasmic reticulum | |

2. Draw an epidermis. Label all of the layers. Describe what is happening in each layer.

3. Draw a sagittal section through a long bone. Label the parts and briefly explain their functions.

4. Name 4 of the 5 different types of glands found in the skin. Briefly explain the function of each.

Part III (5 points each) Choose 3 of the following and briefly answer them using appropriate terminology and concepts. You may answer a fourth question for up to 5 points extra credit.

1. What types of cells are found in dense irregular connective tissue and very briefly explain their function?

2. What is a second degree burn? Why are large burns often fatal?

3. What is osteoporosis? What causes it and how might it be prevented?

4. What are squamous cell carcinoma and melanoma? (be specific) What are the signs of each?

5. Briefly describe stress fracture and greenstick fractures and explain what type of injury might result in each type of fracture.