

Unit 4 study guide

Business



Lecture Study Guide 1.

What is the Integumentary system and its primary characteristics?

Integumentary system is the skin and its derivatives; it provides external protection for the body. Its characteristics are: Covers the entire body, Accounts for about 7% of total body weight, Pliable, yet durable, Thickness: 1. 5 to 4. 0 mm, Composed of the epidermis and dermis, 2. Describe and give at least one example of each of the functions of the Integumentary system. A.

Protection – 3 different barriers: Chemical Barriers (skin secretion and melanin) Physical/Mechanical Barriers – continuity of the skin and hardness of keratinized cells Biological Barriers – Langerhans' cells, macrophages, and DNA B. Body temperature- Production of copious amounts of sweat to dissipate heat; Constriction of dermal blood vessels to retain heat C. Cutaneous Sensation- cutaneous sensory receptors (nervous system) D. Metabolic Functions – Synthesis of Vitamin D – increases calcium absorption in the body; Chemical conversion of many substances E. Blood Reservoir- vasoconstriction and vasodilation

F. Excretion- elimination of nitrogen-containing wastes, salt, and water 3.

Differentiate between chemical, physical/mechanical and biological barriers provided by the Integumentary system. Be sure to provide a minimum of one example for each. Chemical Barriers (skin secretion and melanin)

Physical/Mechanical Barriers – continuity of the skin and hardness of keratinized cells Biological Barriers – Langerhans' cells, macrophages, and DNA 4. Create a chart that helps you differentiate the epidermis and dermis.

Be sure to include things such as cell composition, cell populations and layers.

Epidermis | Dermis | | Composed of epithelial tissue | Composed of fibrous connective tissue | | Cell population= keratinocytes(majority) which produce keratin. | Cell population= fibroblasts producing a semi-fluid matrix | | Melanocytes which synthesize melanin (deepest layer of the epidermis) | Macrophages | | Langerhans cells (macrophages), arise from the bone marrow.

Merkel | Mast cells and which blood cells | | cells which are sensory receptors that are located at the epidermal. | Subdivided into two layers Papillary layer(thin) and the Reticular | | layer | | LAYERS | Major portions of the hair follicles and oil and sweat glands are in | | Stratum basale, deepest layer attached to the dermis. | this layer. | | Stratum granulosum three to five layers thick.

| | Stratum lucidum, thick skin only, found on palms and feet soles and | | | fingertips. Has flat dead keratinocytes. | | | Stratum corneum, outermost layer, 20 to 30 cell layers thick. | | | | . Order the layers of the epidermis from outermost to deepest. Stratum corneum, stratum lucidum, stratum granulosum, stratum spinosum, stratum basale.

6. What contributes to skin color? Three pigments which are melanin, carotene, and hemoglobin. 7. List the appendages of the skin and what purpose they serve. Nails, they protect the delicate tissues of the fingers and toes.

Hair follicles and hair, the hair is mainly dead keratinized cells (has three layers). Sweat glands, there are three parts. The apocrine sweat glands produce body odor, the ceruminous glands produce wax.

The mammary glands produce milk. Sebaceous glands produce oil. 8.

Differentiate between first, second and third degree burns. 1st degree, epidermis is damaged 2nd degree, epidermis and upper dermis is damaged 3rd degree, the whole skin surface is damaged 9. Describe the main types of skin cancer. Basal cell carcinoma which is when shiny lesions grow into the dermis. Squamous cell carcinoma which is when the cells of the stratum spinosum form a lesion which appears small red and round.

Melanoma which is the most dangerous type of skin cancer and it appears as a brown or black spreading patch. 10.

What is the ABCDE rule and what does it help to detect? a. Asymmetry – two sides don't match b. Border irregularity – not smooth and have indentations c.

Color – more than one color d. Diameter – larger than 6 mm in diameter e. Elevation – elevated above skin surface 11. List the functions of the skeletal system. Support, movement, protection, mineral storage, blood cell synthesis 12.

What are the 3 types of cartilage and where would you find each type?

Hayaline cartilage and it is found in ends of bones and moveable joints, larynx, and nose. Elastic cartilage and it is found in the ear

Fibrocartilage and it is found in the knees and elbow. 13. List the main classifications for bones. Give an example for each classification. Long bones
Diaphysis – shaft Epiphysis – ends of bone; contain red marrow Medullary cavity – contains yellow marrow Epiphyseal plate – found between diaphysis and epiphysis; long bone growth Short bones – roughly cuboidal in shape Sesamoid bones – form within a tendon e.

g. patella Flat bones – Thin, flattened, and slightly curved Diploe – spongy bone found between compact bone layers Irregular bones – complicated shapes e. g. vertebrae, pelvis 14.

Describe the structure of a long bone. A long bone has four parts the diaphysis the epiphysis the medullary cavity and the epiphyseal plate.

15. Differentiate between osteocytes, osteoclasts and osteoblasts.

Osteocytes are cells which dissolve bone Osteoclasts are cells which build bone Osteroblasts are mature cells found within compact bone 16. Describe osseous tissue. Be sure to differentiate between compact and spongy bone in your description.

Osseous tissue have two parts. First is the compact bone. It is dense and hard and found on the external surfaces of bones. The structural unit of compact bone is osteon.

Each ring of osteon is lamella. There are two canals, the harversian canal contains blood vessels and nerve fibers that travel vertically in bone, and volkmanns canal has blood vessels and nerve fibers that travel horizontally.

Lacuna is the spaces between compact bones occupied by osteocytes.

Canaliculi are lateral canals which connect lacunae and allow osteocytes to diffuse nutrients and wastes into or out of bone tissues. 17. Give 3 examples of each of the following bone markings: sites of attachment, projections, and depression/openings. Sites of attachment- crest, trochanter, spine

Projections- head, condyle, ramus Depressions/ openings- meatus, sinus, fossa 18. Explain the hormonal control of bone remodeling.

Osteoblast and osteoclast activity is regulated by two hormones; PTH and Calcitonin. 19. What are the basics of fractures and how they heal? It's a break in the bone. (8 types) Healed by hematoma formation, fibrocartilaginous callus formation, bony callus formation, bone remodeling. 20. What are the 2 main processes of bone development? Bones form by replacing existing connective tissues in one or two ways.

1. intramembranous ossification 2. endochondral ossification.