

Biol 2404 Lecture Outline for Exam II: Introduction to Cells & Tissues

I. Membranes & Glands

Define “Organ”

Membranes

Kinds of Membranes

Mucous

Serous

pleura

pericardium

peritoneum

visceral vs parietal

Synovial

Cutaneous

Glands

II. Integumentary System

General Functions

Layers

Epidermis

Dermis

Hypodermis

Skin Color

Derivatives of the skin

hair

nails

skin glands

III. Skeletal System - General

Functions of the skeletal system

general structure of bone organs

bones

kinds of bones

general structure of a long bone

microscopic structure of bone tissue

cartilage

microscopic structure of cartilage tissue

kinds of cartilage tissues

IV. Skeletal System Anatomy

bone markings

two subdivisions of the skeletal system

skull

facial bones vs cranial bones

fontanelles

sinuses

examples of paired skull bones

examples of unpaired skull bones

vertebral column

regions of vertebral column

ribcage

sternum

ribs

pectoral appendage

girdle

upper arm

lower arm

hand

pelvic appendage

girdle

upper legs

lower leg

foot

V. Skeletal Articulations

classification:

by degree of movement

by structure

examples of each type

immoveable fibrous joints

slightly moveable cartilaginous joints

freely moveable synovial joints

tendons vs ligaments

bursae

VI. Skeletal Physiology

composition of bone

importance of calcium

kinds of bone cells

bone formation and ossification

effects of hormones on bone growth

VII. Muscular System - General

general functions of muscular system

general structure of muscle organs

fibrous connective tissue

nervous tissue

muscle tissue

blood supply and compartments

some basic principles of muscle function

muscle can only pull not push

bones act as levers and fulcrums

kinds of body movements

naming of skeletal muscles

VIII. Muscular System Anatomy

muscles that move the arm

pectoral girdle

upper arm

lower arm

hand

muscles that move the leg

upper leg

lower leg

foot

muscles of the head & neck

muscles of the thorax

breathing muscles

muscles of the abdominal wall

IX. Muscular Physiology

general structure of muscle cells

how a muscle cell contracts & relaxes

kinds of muscle contractions

twitch

tetanus

isotonic

isometric

“all or none” vs “graded strength”

threshold

motor unit

recruitment

energy requirements of muscles

aerobic respiration

anaerobic respiration

function of glycogen

function of myoglobin

fatigue and oxygen debt