

SUBJECT: GENERAL ANATOMY AND PHYSIOLOGY

LESSON OBJECTIVES:

- Explain the importance of anatomy and physiology to the cosmetology profession
- Describe cells, their structure, and their reproduction
- Define tissue and identify the types of tissues found in the body
- Name the 10 main body system and explain their basic functions

Inspirational thought for the day: “Remember, you can earn more money, but when time is spent, it is gone forever.” –Zig Ziglar

I) ANATOMY AND PHYSIOLOGY

- A) Anatomy
- B) Physiology
- C) Histology

II) CELLS

- A) Composition
- B) Nucleus
- C) Cytoplasm
- D) Centrosome
- E) Cell membrane
- F) Cell reproduction/division
 - 1) Adequate supply of food
 - 2) Adequate supply of oxygen
 - 3) Adequate supply of water
 - 4) Elimination of waste
 - 5) Proper temperature
- G) Cell Metabolism
 - 1) Anabolism
 - 2) Catabolism

III) TISSUES

- A) Connective tissue
- B) Epithelial tissue
- C) Liquid tissue
- D) Muscular tissue
- E) Nerve tissue

IV) ORGANS

- A) Brain
- B) Eyes
- C) Heart
- D) Kidneys
- E) Lungs
- F) Liver
- G) Skin
- H) Stomach and intestines

V) SYSTEMS

- A) Circulatory
- B) Digestive
- C) Endocrine
- D) Excretory
- E) Integumentary

- F) Muscular
- G) Nervous
- H) Reproductive
- I) Respiratory
- J) Skeletal

VI) SKELETAL SYSTEM

- A) Bone composition
- B) Osteology
- C) Primary function of skeletal system
 - 1) Give shape and support to body
 - 2) Protect internal structures and organs
 - 3) Serve as attachments for muscles
 - 4) Act as levers to produce body movement
 - 5) Help produce white and red blood cells (a function of bone marrow)
 - 6) Store minerals
- D) Joints
 - 1) Movable
 - 2) Immovable
- E) Parts of the skull
 - 1) Cranium
 - 2) Facial skeleton
- F) Bones of the cranium
 - 1) Occipital bone
 - 2) Parietal bones
 - 3) Frontal bone
 - 4) Temporal bones
 - 5) Ethmoid bones
 - 6) Sphenoid bone
- G) Bones of the face
 - 1) Nasal bones (2)
 - 2) Two lacrimal bones
 - 3) Two zygomatic bones
 - 4) Maxillae (2)
 - 5) Mandible (1)
- H) Bones of the neck
 - 1) Hyoid bone
 - 2) Cervical vertebrae
- I) Bones of the trunk/torso
 - 1) Thorax
 - 2) Ribs
 - 3) Scapula
 - 4) Sternum
 - 5) Clavicle
- J) Bones of the arm and hand
 - 1) Humerus
 - 2) Ulna
 - 3) Radius
 - 4) Carpus
 - 5) Metacarpus
 - 6) Phalanges
- K) Bones of the leg and foot
 - 1) Femur

- 2) Tibia
- 3) Fibula
- 4) Patella
- 5) Ankle joint
- 6) Talus

VII) MUSCULAR SYSTEM

- A) Myology
- B) Muscle quantity
- C) Muscle construction
- D) Types of muscular tissue
 - 1) Striated
 - 2) Nonstriated
 - 3) Cardiac
- E) Muscle parts
 - 1) Origin
 - 2) Insertion
 - 3) Belly
- F) Stimulation of muscles
 - 1) Massage
 - 2) Electric current
 - 3) Light rays
 - 4) Heat rays
 - 5) Moist heat
 - 6) Nerve impulses
 - 7) Chemicals
- G) Muscles of the scalp
 - 1) Epicranium or occipitofrontalis
 - (a) Occipitalis
 - (b) Frontalis
 - (c) Aponeurosis
- H) Muscles of the ear
 - 1) Auricularis superior
 - 2) Auricularis anterior
 - 3) Auricularis posterior
- I) Muscles of mastication
 - 1) Masseter
 - 2) Temporalis
- J) Muscles of the neck
 - 1) Platysma
 - 2) Sternocleidomastoideus
- K) Muscles of the eyebrow
 - 1) Orbicularis oculi
 - 2) Corrugator
- L) Muscles of the nose
 - 1) Procerus
 - 2) Other nasal muscles
- M) Muscles of the mouth
 - 1) Buccinator
 - 2) Depressor labii inferioris
 - 3) Levator anguli oris
 - 4) Levator labii superioris
 - 5) Mentalis

- 6) Orbicularis oris
- 7) Risorius
- 8) Triangularis
- 9) Zygomaticus major and minor
- N) Muscles attaching arms to body
 - 1) Latissimus dorsi
 - 2) Pectoralis major and minor
 - 3) Serratus anterior
 - 4) Trapezius
- O) Muscles of shoulder and arm
 - 1) Deltoid
 - 2) Biceps
 - 3) Triceps
 - 4) Pronator
 - 5) Supinator
 - 6) Flexors
 - 7) Extensors
- P) Muscles of hand
 - 1) Abductor
 - 2) Adductor
- Q) Lower leg and foot muscles
 - 1) Extensor digitorum longus
 - 2) Tibialis anterior
 - 3) Peroneus longus
 - 4) Peroneus brevis
 - 5) Gastrocnemius
 - 6) Soleus

VIII) NERVOUS SYSTEM

- A) Neurology
- B) Divisions of nervous system
 - 1) Cerebrospinal system
 - 2) Peripheral nervous system
 - 3) Autonomic nervous system
- C) Brain and spinal cord
 - 1) Brain is the largest mass of tissue in body
 - 2) Average weight is 44 to 48 ounces
 - 3) Contains 12 pairs of cranial nerves
 - 4) Spinal cord originates in brain
 - 5) 31 pairs of spinal nerves
- D) Nerve cell structure and function
 - 1) Neuron or nerve cell
 - 2) Dendrites
 - 3) Axon and axon terminal
 - 4) Nerves
- E) Types of nerves
 - 1) Sensory (Afferent) nerves
 - 2) Motor (efferent) nerves
 - 3) Mixed nerves
 - 4) Reflex
- F) Nerves of head, face, and neck
 - 1) Fifth cranial, trifacial, trigeminal nerve
 - (a) Ophthalmic

- (b) Mandibular
- (c) Maxillary
- 2) Fifth cranial branches
 - (a) Auriculotemporal nerve
 - (b) Infraorbital nerve
 - (c) Infratrochlear nerve
 - (d) Mental nerve
 - (e) Nasal nerve
 - (f) Supraorbital nerve
 - (g) Zygomatic nerve
- 3) Seventh cranial nerve
 - (a) Posterior auricular nerve
 - (b) Temporal nerve
 - (c) Zygomatic nerve
 - (d) Buccal nerve
 - (e) Marginal mandibular nerve
 - (f) Cervical nerves
- 4) Cervical nerves
 - (a) Greater occipital
 - (b) Lesser occipital
 - (c) Greater auricular
 - (d) Cervical cutaneous
- 5) Nerves of arm and hand
 - (a) Ulnar
 - (b) Radial
 - (c) Median
 - (d) Digital
- 6) Nerves of lower leg and foot
 - (a) Tibial nerve
 - (b) Common peroneal nerve
 - (c) Deep peroneal nerve
 - (d) Superficial peroneal nerve
 - (e) Saphenous nerve
 - (f) Sural nerve
 - (g) Dorsal nerve

IX) CIRCULATORY SYSTEM

- A) Blood-vascular system
- B) Lymph-vascular (lymphatic) system
- C) Heart
 - 1) Pericardium
 - 2) Resting heart rate
- D) Chambers and valves of heart interior
 - 1) Right and left atrium
 - 2) Right and left ventricle
 - 3) Valves
 - 4) Atria
- E) Blood circulation
 - 1) Pulmonary circulation
 - 2) Systemic or general circulation
- F) Blood vessels
 - 1) Arteries
 - 2) Capillaries

- 3) Veins
- G) The blood
 - 1) Sticky, salty fluid
 - 2) Normal temperature of 98.6 degrees F.
 - 3) Makes up 1/20 of body weight
 - 4) About 8 to 10 pints fill adult vessels
 - 5) Bright red in arteries
 - 6) Dark red in veins (except pulmonary).
- H) Blood composition
 - 1) Red corpuscles (red blood cells)
 - 2) White corpuscles (white blood cells)
 - 3) Blood platelets
 - 4) Plasma
- I) Chief functions of blood
 - 1) Carries water, oxygen, food, secretions to cells
 - 2) Carries away carbon dioxide and waste
 - 3) Helps equalize body temperature
 - 4) Clotting
- J) Lymph-vascular system
- K) Primary functions
 - 1) Carry nourishment from blood to body cells
 - 2) Act as a defense against invading bacteria
 - 3) Remove waste material from body cells to the blood
 - 4) Provide a suitable fluid environment for cells.
- L) Arteries of head, face, and neck
 - 1) Common carotid arteries
 - 2) Internal division
 - 3) External division
 - (a) Superficial temporal artery
 - (b) Occipital artery
 - (c) Posterior auricular artery
 - 4) Facial
 - (a) Submental artery
 - (b) Inferior labial artery
 - (c) Angular artery
 - (d) Superior labial artery
 - 5) Superficial temporal artery
 - (a) Frontal artery
 - (b) Parietal artery
 - (c) Transverse facial artery
 - (d) Middle temporal artery
 - (e) Anterior auricular artery
 - 6) Branches from external carotid artery
 - (a) Occipital artery
 - (b) Posterior auricular artery
 - 7) Branches from internal carotid artery
 - (a) Supraorbital artery
 - (b) Infraorbital artery
- M) Veins of head, face, and neck
 - 1) Internal jugular
 - 2) External jugular
- N) Blood supply for arm and hand

- 1) Ulnar arteries
- 2) Radial arteries
- O) Blood supply for foot and leg
 - 1) Popliteal artery
 - 2) Anterior tibial
 - 3) Dorsalis pedis

X) ENDOCRINE SYSTEM (GLANDS)

- A) Exocrine or duct glands
- B) Endocrine or ductless glands

XI) DIGESTIVE SYSTEM

- A) Digestion
- B) Digestive enzymes

XII) EXCRETORY SYSTEM

- A) Kidneys
- B) Liver
- C) Skin
- D) Large intestine
- E) Lungs

XIII) RESPIRATORY SYSTEM

- A) Diaphragm
- B) Lungs

XIV) INTEGUMENTARY SYSTEM