INTRODUCTION TO ANATOMY AND PHYSIOLOGY WORKSHEETS - KEY

Anatomy

1 Define anatomy. Anatomy is the study of structure and structural relationships of the body and / or its parts.
2 Define cellular anatomy. Cellular anatomy is the study of the structure of the cell.
3 Define cytology. Cytology is the study of the structure, function, pathology, life cycles, and life history of cells.
4 Define developmental anatomy (embryology). Developmental anatomy is the study of the structural development of the embryo.
5 Define gross anatomy. Gross anatomy is the study of structures which can be seen with the unaided eye.
6 Define histological anatomy. Histological anatomy is the study of the structure of tissues.
7 Define histology. Histology is the study of the structure, as seen microscopically, and function of tissues.
8 Define microscopic anatomy. Microscopic anatomy is the study of structures with the aid of a microscope.
9 Define regional anatomy. Regional anatomy is the study of specific portions of the body (regions).
10 Define systemic anatomy. Systemic anatomy is the study of the structure of the body's systems.
11 Define surface anatomy. Surface anatomy is the study of the structure of the body's surface.

Physiology

12 Define physiology. Physiology is the study function of the living body and/or its parts.
13 Define cell physiology. Cell physiology is the study of the function of cells (a branch of cytology).
14 Define pathology. Pathology is the study of disordered functions or disease.
15 Define systemic physiology. Systemic physiology is the study of the function of the body's systems.
16 Define special (organ) physiology. Special (organ) physiology is the study of specific organs of the body.

Complementarity

17 What does complementarity of anatomy and physiology refer to? Complementarity refers to the interrelationship of structure (anatomy) and function (physiology).

Organizational Levels

18 List in sequence (lowest first) the six hierarchical levels of anatomy and physiology.
(1) Chemical level
(2) Cellular level
(3) Tissue level
(4) Organ level
(5) Organ system level
(6) Organism level
19 How does the chemical level (atoms, molecules, and their interactions) relate to cells? Chemical interactions play an essential role in the structural and functional aspects of the cell.
20 Cells are built on the chemical level and are organized into the tissue level.
21 What are the three components of the cell theory?
(1) all living things are made of cells
(2) cells are the basic units of life
(3) cells come only from preexisting cells
22 Tissues are built on the cellular level and are organized into the organ level.
23 What are the four fundamental groups of tissues?
(1) epithelial tissue
(2) connective tissue
(3) muscular tissue
(4) neural tissue
24 Organs are built on the tissue level and are organized into the organ system level.
25 Organ systems are built on the organ level and are organized into the organism level.
26 Match the following systems with their components:

Cardiovascular system	Muscular system
Digestive system	Nervous system
Endocrine system	Respiratory system
Female reproductive system	Skeletal system
Integumentary system	Urinary system
Lymphatic system	
Male reproductive system	

Nervous system	Brain, spinal cord, nerves, and receptors
Cardiovascular	Heart, blood vessels, and blood
Urinary system	Kidneys, ureters, urinary bladder, and urethra
Lymphatic system	Lymph nodes, lymphatic vessels and their fluid called lymph, tonsils, spleen, and thymus
Digestive system	Mouth, esophagus, stomach, small intestine, large intestine, anus, and accessory
Respiratory system	Nasal cavity, voice box (larynx), windpipe (trachea), and lungs
Digestive system	Organs such as salivary gland, pancreas, liver and gallbladder
Endocrine system	Organs which produce hormones (chemical messengers) which include pituitary, testes, ovaries, thymus, thyroid
Female reproductive	Ovaries, fallopian tubes, uterus, and vagina
Muscular system	Skeletal muscles
Skeletal system	Skeleton
Integumentary system	Skin, hair, nails, sweat glands and oil glands
Male reproductive	Testes, ductus (vas) deferens, prostate, seminal vesicles, and penis

27 Match the following systems with their functions:

Cardiovascular system
Digestive system
Endocrine system
Female reproductive system
Integumentary system
Lymphatic system
Male reproductive system
Muscular system
Nervous system
Respiratory system
Skeletal system
Urinary system

Respiratory system	Delivery of air to lungs for oxygen and carbon dioxide exchange between air and blood
Nervous system	Immediate control of systems, personality, emotions, etc.
Urinary system	Includes the production, storage, and elimination of urine, which involves regulation of water, electrolytes, and blood pH.
Skeletal system	Includes the skeleton which supports, protects, provides for storage of calcium, and serves as a site of blood cell production
Endocrine system	Long-term regulation of systems by production and release of hormones
Muscular system	Movement of the body and involved in body temperature regulation
Digestive system	Processing and absorption of nutrients
Female reproductive	Production of egg, implantation and development
Lymphatic system	Production of lymphocytes for immunity, and collects, filters, and transports fluid (lymph)
Male reproductive	Production of sperm
Integumentary system	Protection (by skin, hair, etc.), site of sensory receptors, involved in body temperature control, etc.
Cardiovascular	Transport of blood; including cells, nutrients, wastes, gases, hormones, etc.

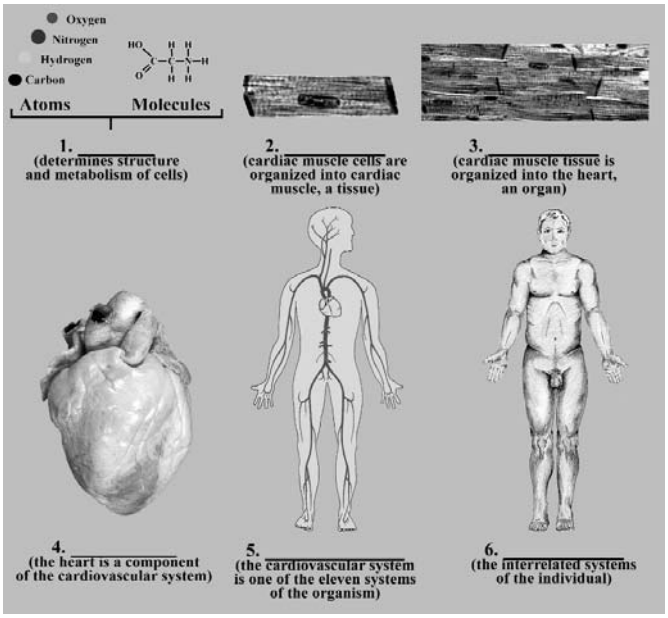

Figure 1.1

28 In reference to **Figure 1.1**, identify levels #1 - #6.

1 Chemical level
2 Cellular level
3 Tissue level
Organ level
5 Organ system level
6 Organism level

Characteristics of Human Life

29 Define metabolism. Metabolism is generally defined as the sum of all the physical and chemical processes that pertain to the body's chemistry.

30 What are the two major divisions of metabolism?
(1) Catabolism (2) Anabolism

31 Define catabolism. Catabolism is the destructive phase of metabolism.

32 Define anabolism. Anabolism is the constructive phase of metabolism.

33 What are three ways growth may occur?
(1) Increase in the number of cells
(2) Increase in the size of the cells
(3) Increase in the amount of extracellular material

34 Define differentiation. Differentiation is the process where cells acquire an individual identity that results from progressive diversification.

35 Define responsiveness. Responsiveness is the ability to react and depends upon irritability, a response to a stimulus.

36 Motion begins with controlled molecular actions within the cell.

37 List five areas where movements are seen.
(1) Movements within the cell
(2) Movements of the cell
(3) Movements of a tissue
(4) Movements of an organ
(5) Movements of the body

38 What are two processes of cell reproduction?
(1) Mitosis
(2) Meiosis

39 What does meiosis give rise to? Meiosis produces gametes