BIOS 251 Anatomy & Physiology I with Lab (Bachelor of Nursing, First Year) Advanced Multiple-Choice Practice Questions with Answers (Graded A+) 2025/2026 100 % Guaranteed pass.

Module 1: Introduction to A&P, Chemistry, and Cells

1. A patient presents with a severe cough. Using a stethoscope, you listen to the lung fields located in the thoracic cavity. This cavity is lined by which serous membrane?
   a) Pericardium
   b) Peritoneum
   c) Pleura
   d) Meninges
   Answer: c) Pleura

2. During a trauma assessment, a nurse palpates the abdomen. The quadrant that contains the appendix is the:
   a) Right Upper Quadrant (RUQ)
   b) Left Upper Quadrant (LUQ)
   c) Right Lower Quadrant (RLQ)
   d) Left Lower Quadrant (LLQ)
   Answer: c) Right Lower Quadrant (RLQ)

3. The principle of complementarity of structure and function is best exemplified by:
   a) The thick, muscular walls of the heart ventricles enabling them to pump blood.
   b) The presence of enzymes in saliva.
   c) The skin's ability to produce vitamin D.
   d) The flexibility of ear cartilage.
   Answer: a) The thick, muscular walls of the heart ventricles enabling them to pump blood.

4. Homeostatic imbalance is most accurately described as:
   a) A state of dynamic constancy within the body's internal environment.
   b) A disturbance in the stable internal conditions maintained by the body.
   c) The primary mechanism of positive feedback loops.
   d) The process of maintaining blood pH at 7.4.
   Answer: b) A disturbance in the stable internal conditions maintained by the body.

5. In a negative feedback loop, the role of the effector is to:
   a) Monitor the value of a variable (e.g., body temperature).
   b) Determine the set point for a variable.
   c) Provide the means for the control center to respond (e.g., sweat glands).
   d) Compare the sensor's input with the set point.
   Answer: c) Provide the means for the control center to respond (e.g., sweat glands).

6. Childbirth is a classic example of a positive feedback loop because it:
   a) Returns the body to a set point.
   b) Involves the hypothalamus.
   c) Amplifies the original stimulus to complete a process.
   d) Regulates body temperature.
   Answer: c) Amplifies the original stimulus to complete a process.

7. A solution with a pH of 4 is considered _____ and has _____ the concentration of H+ ions compared to a solution with a pH of 6.
   a) acidic; 100 times
   b) basic; 100 times
   c) acidic; 2 times

d) basic; 2 times

Answer: a) acidic; 100 times

8. The primary function of ATP in a cell is to:
   a) Store genetic information.
   b) Act as a structural component of the plasma membrane.
   c) Provide energy for cellular work.
   d) Function as an enzyme.
   Answer: c) Provide energy for cellular work.

9. The organelle responsible for packaging proteins into vesicles for secretion from the cell is the:
   a) Rough Endoplasmic Reticulum
   b) Golgi Apparatus
   c) Mitochondria
   d) Lysosome
   Answer: b) Golgi Apparatus

10. Peroxisomes are critical organelles in certain cells because they:
    a) Synthesize phospholipids and detoxify drugs.
    b) Neutralize dangerous free radicals and detoxify substances like alcohol.
    c) Are the site of ATP production.
    d) Digest worn-out organelles.
    Answer: b) Neutralize dangerous free radicals and detoxify substances like alcohol.

11. A patient has a genetic disorder that disrupts the function of dynein motor proteins. Which cellular process would be most directly impaired?
    a) ATP synthesis
    b) Organelle movement along microtubules
    c) Protein synthesis
    d) Phagocytosis
    Answer: b) Organelle movement along microtubules

12. The sodium-potassium pump (Na+/K+ ATPase) is a crucial example of:
a) Simple diffusion
b) Facilitated diffusion
c) Primary active transport
d) Secondary active transport
Answer: c) Primary active transport

13. If a red blood cell (RBC) is placed in a hypertonic solution, it will:
a) Swell and potentially burst (lyse).
b) Shrivel and crenate.
c) Maintain its normal shape.
d) First swell, then shrink.
Answer: b) Shrivel and crenate.

14. During which phase of the cell cycle does DNA replication occur?
a) G1 phase
b) S phase
c) G2 phase
d) Mitotic phase
Answer: b) S phase

15. The process by which a cell ingests a large particle, such as a bacterium, is called:
a) Pinocytosis
b) Phagocytosis
c) Exocytosis
d) Receptor-mediated endocytosis
Answer: b) Phagocytosis

Module 2: Histology (Tissues)

16. The four primary tissue types found in the human body are:
a) Skeletal, cardiac, smooth, and nervous