

### ATI TEAS 7 Science Questions with Answers

1. Which of the following structures in the male reproductive system secretes a fluid that nourishes and protects sperm?

- A) Urethra
- B) Prostate gland**
- C) Vas deferens
- D) Epididymis

2. Which of the following parts of the central nervous system releases chemicals that regulate the pituitary gland?

- A) Cerebellum
- B) Hypothalamus**
- C) Spinal cord
- D) Thalamus

3. Which of the following body systems is the primary system involved in preventing an infection when a cut in the skin allows bacteria to enter the body ?

- A) The immune system**
- B) The endocrine system
- C) The excretory system
- D) The circulatory system

4. Which of the following skin layers contains dead cells?

- A) Papillary layer
- B) Stratum basale
- C) Stratum corneum**
- D) Reticular layer

5. Which of the following statements describes how bile salts aid during digestion?

- A) Decrease the size of starches to aid in digestion
- B) Increase the size of fat droplets to aid in digestion
- C) Increase the size of starches to aid in digestion
- D) Decrease the size of fat droplets to aid in digestion**

6. When experimental results seem to only partly support a hypothesis, a researcher should consider which of the following?

- A) Formulating a scientific law
- B) Manipulating the data
- C) Exploring alternative explanations
- D) Accounting for other researchers ' biases**

7. Which of the following stem cells can differentiate into the largest number of different cell types?

- A) Somatic
- B) Unipotent
- C) Oligopotent
- D) Pluripotent**

8. Scientists rely on which of the following to provide critical feedback when revising scientific explanation?

- A) Peer review**
- B) Null hypothesis
- C) Dogma
- D)Opinion

9. Which of the following organs releases bicarbonate as response to the release of secretin by the duodenum?

A) Gallbladder

B) Spleen

**C) Pancreas**

D) Liver

10. emphysema caused by damage to alveoli from toxins and pollutants is likely to result in the body having difficulty performing which of the following actions ?

A) Releasing histamine and acetylcholine

B) Producing enzymes

C) Absorbing food

**D) Exchanging oxygen and carbon dioxide**

11. Which of the following properties of water explains its solvent abilities for certain substances?

A) High surface tension

B) Kinetic energy of liquid water molecules

C) High specific heat

**D) Polarity of water molecules**

12. Which of the following pathways best represents the expected flow of blood from the human heart to an organ?

A) Blood pumped from the heart first enters arterioles that then merge to form arteries that deliver blood to the organ

**B) Blood pumped from the heart first enters arteries that then narrow to form arterioles that deliver blood to capillaries of the organ**

C) Blood pumped from the heart first enters veins that then narrow to form venules that deliver blood to arteries of the organ

D) Blood pumped from the heart first enters arteries that then narrow to form veins that deliver blood to the organ

13. Using the equation  $\text{pH} = -\log [\text{H}^+]$ , a solution with a  $[\text{H}^+] = 10^{-9} \text{ M}$  has a pH of which of the following?

A) 1

B) 5

C) 10

**D) 9**

14. Which of the following types of bonds link base pair nucleotides within a double strand of DNA?

A) Covalent

B) Peptide

C) Ionic

**D) Hydrogen**

15. Metabolism is known as which of the following types of respiration?

A) Pulmonary

B) External

**C) Cellular**

D) Internal

16. Which of the following regions of the body are the tibia and fibula?

A) Tarsal

B) Antecubital

**C) Crural**

D) Coxal

17. Which of the following digestive system structures releases sodium bicarbonate into the small intestine, resulting in a change in the pH of chyme from acidic to basic?

A) Gallbladder

**B) Pancreas**

C) Liver

D) Appendix

18. A cell is placed in a hypertonic solution. Which of the following describes the resulting osmosis?

A) There is a net flow of water into the cell

B) The net flow of water into and out of the cell is zero .

C) There is no flow of water.

**D) There is a net flow of water out of the cell.**

19. Which of the following elements has the smallest atomic radius?

A) Si

**B) C**

C) Ge

D) Sn

20. An efficient way to block protein synthesis is by inhibiting which of the following?

**A) Ribosomes**

B) Glyoxysomes

C) Apoplasts

D) Lysosomes

21. A student conducts an experiment in which he dissolves 1.0 grams () each of several substances in 50 millimeters (mL) of water. He has 12 identical plastic cups of water. He places 1.0 g of salt into three of the cups, 1.0 g of sugar into three of the cups, and 1.0 g of baking soda into three of the cups. The three remaining cups contain only water. He places all the cups in a freezer and records the temperature of the water in each cup every 15 minutes for 4 hours .

Which of the following questions is the student most likely investigating?

- A) How does the volume of water affect the rate at which it cools ?
- B) What effect does cooling have on the solubility of different solutes ?
- C) How is the cooling rate of water affected by different solutes ?**
- D) What effect do different concentrations of solute have on the freezing point of water ?

22. In a plant in which fuzzy leaves (F) are dominant smooth leaves (f), which of following crosses will produce only offspring with smooth leaves?

- A) FF X FF
- B) Ff X Ff
- C) ff X ff**
- D) Ff X ff

23. Which of the following is a function of the circulatory system?

- A) To manufacture antibodies**
- B) To break down toxins
- C) To produce insulin
- D) To transport hormones

24. In a double circulation system, which of the following describes a possible pathway of blood flow through the pulmonary circulatory system?

- A) **Oxygenated blood flows toward the heart from the lungs.**
- B) Deoxygenated blood flows from organs and tissues of the body to the heart.
- C) Oxygenated blood flows throughout the body .
- D) Deoxygenated blood flows from the lungs to the heart

25. A doctor explains that a patient has pulled a muscle in his back. Which of the following could injured in a patient's back?

- A) **Latissimus dorsi**
- B) Zygomaticus
- C) Adductor magnus
- D) Gastrocnemius

26. Which of the following hormones increases the heart rate in response to stress?

- A) **Epinephrine**
- B) Insulin
- C) Testosterone
- D) Glutamate

27. Histones are proteins associated with which of the following?

- A) Sperm cells
- B) **DNA**
- C) Hair follicles
- D) Blood

28. Which of the following cellular organelles releases the energy contained in food?

- A) Golgi apparatus
- B) **Mitochondria**
- C) Ribosomes
- D) Centrioles

29. Which of the following describes a process that occurs along the proximal tubules of a nephron?

- A) **Glucose , lactate , and amino acids are reabsorbed .**
- B) Toxins in the filtrate are detoxified .
- C) Urea is actively reabsorbed .
- D) Altered filtrate leaves the urinary system and the body .

30. Which of the following is a function of the integumentary system?

- A) **Storage of fat**
- B) Release of minerals
- C) Production of antibodies
- D) Absorption of water

31. A study found two processes , Process A and Process B, to be correlated . Which of the following is true for these processes ?

- A) The study cannot indicate whether Process A and B have a negative relationship.
- B) The study indicates that Process A causes Process B.
- C) **The study does not indicate a causal relationship between the processes .**
- D) The study cannot indicate whether Process A and B have a positive relationship

32. Which of the following types of cells suppress immune responses ?

- A) **Regulatory T-cells**
- B) Neutrophils
- C) Plasma cells
- D) Macrophages

33. Which of the following are the two major parts of the nervous system ?

- A) Autonomic nervous system and central nervous system

B) Peripheral nervous system and somatic nervous system

C) Autonomic nervous system and somatic nervous system

**D) Peripheral nervous system and central nervous system**

34. Which of the following substances is excreted by sweat glands in response to the breakdown of proteins and the formation of ammonia?

**A) Urea**

B) Lysozymes

C) Sebum

D) Water

35. A student investigating the importance of wavelengths above and below the visible spectrum for photosynthesis sets up an over a 2-month period, all with illumination at 1 meter distance from plants grown with the same soil and watering conditions.

3 Arabidopsis plants exposed to ultraviolet light (UV)

3 Arabidopsis plants exposed to infrared light (IR)

3 Arabidopsis plants exposed to white light

At the end of the experiment, she finds that the IR treated plants are scorched, the UV treated plants have, the plants are growing normally.

Which of the following statements is most likely to be correct?

A) Three plants do not provide sufficient replications to draw a conclusion.

B) Infrared light contains more energy than the other wavelengths.

**C) Wavelength of light is the only variable that has been changed between groups**

D) The wavelength of light does not affect photosynthesis.

36. Which of the following hormones is responsible for regulating sodium reabsorption in the kidneys?

A) Thyroxine