

XPertSTEM Natural Science Sample Test Division 3 for Grade 7 & 8

1. Female gametes are made in the__.
- ovaries
 - testes
 - uterus
 - vagina

2. Which process allows a mammal to continue to grow in size?
- meiosis of body cells
 - mitosis of body cells
 - cells growing in size
 - decomposition of cells

3. Which statement describes the process of plant fertilization?
- A seed grows into a plant when buried.
 - Pollen grains land on a plant's flower.
 - A flower turns into the fruit of a plant.

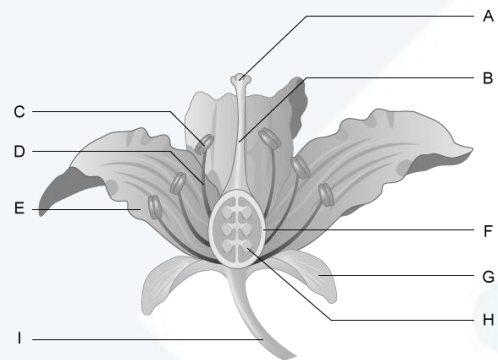


- d. A plant's egg joins with the sperm.
4. A behaviour in which an animal learns to stop responding to a particular stimulus over time is called_____.
- habituation
 - imprinting
 - operant conditioning
 - classical conditioning

5. Many flowers open when the sun comes up. This reaction is called _____.
- gravitropism
 - phototropism
 - touch response
 - circadian rhythm

6. What does the vascular tissue phloem do?
- It consists of dead tubular cells.
 - It transports sugar from leaves to all parts of the plant.
 - It makes up tissue only found in stems.
 - It transports water from roots to leaves.

For the following two questions use the diagram below:



7. Identify the part of the flower represented by letter B.

Which statement best classifies A and B?

- Sepal
- Stigma
- Style
- Stalk

8. Which letter represents the Anther.

- A
- B
- C
- D

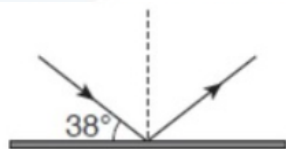
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9. Most cell membranes consist mainly of _____ .
- DNA and ATP
 - chitin and starch
 - proteins and lipids**
 - nucleotides and amino acids

10. Why does osmosis cause an animal cell to burst when it is placed in a freshwater environment?
- Osmosis leads to water moving into the cell.**
 - Osmosis leads to water moving out of the cell.
 - Osmosis leads to solutes moving into the cell.
 - Osmosis leads to solutes moving out of the cell.

11. The reflection of light off a rough surface is _____.
- diffuse reflection**
 - regular reflection
 - irregular reflection
 - none of the above

12. The diagram below shows an incident ray on a plane mirror. What is the angle of reflection?
- 38°
 - 52°**
 - 128°
 - 142°

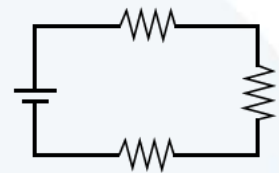


13. A sound wave is an example of a__.
- transverse wave.
 - longitudinal wave.**
 - primary wave.
 - ocean wave.

14. Which is the best description of the nature of light?
- Light always behaves like waves.
 - Light always behaves like particles.
 - Light sometimes behaves like waves and at other times like particles.**
 - Light never behaves like either waves or particles.

15. Which object has such a strong surface gravity that light cannot escape it?
- black hole**
 - black dwarf
 - red giant
 - white dwarf

16. Look at the drawing. If each resistor is 2 Ohms, what is the total resistance of the circuit?
- 3 Ohms
 - 0 Ohms
 - 1 Ohm
 - 6 Ohms**



17. Telephones use electromagnets to change _____ .
- electric currents to light waves
 - electric currents to sound waves**
 - magnetism to light waves
 - magnetism to sound waves

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18. If the velocity remains constant, which of the following increases as the wavelength decreases?
- a. **Frequency**
 - b. Amplitude
 - c. Speed
 - d. Time
19. A galaxy that is moving toward Earth will show _____.
- a. a decrease in brightness
 - b. an increase in light years
 - c. **a blueshift in the spectrum**
 - d. a redshift in the spectrum
20. Which electromagnetic waves are the longest?
- a. **radio**
 - b. violet
 - c. gamma
 - d. ultraviolet
21. Horizontal rows on the periodic table are called _____.
- a. genome
 - b. groups
 - c. **periods**
 - d. families
22. What is the element symbol for iron?
- a. I
 - b. **Fe**
 - c. Au
 - d. Ir
23. A chlorine atom attains an octet by _____.
- a. **gaining one electron**
 - b. gaining three electrons
 - c. losing one electron
 - d. losing five electrons
24. Cations and anions are examples of what type of elemental compound?
- a. **Ionic compounds that are either negative or positive**
 - b. Polyatomic atoms
 - c. Diatomic atoms
 - d. None of the above
25. Which particles make up atoms?
- a. **protons, neutrons, electrons**
 - b. protons, electrons, nuclei
 - c. electrons, neutrons, ions
 - d. neutrons, electrons, molecules
26. A(n) _____ is made of two or more atoms joined together in a fixed ratio (like toothpicks and marshmallows).
- a. atom
 - b. mixture
 - c. solution
 - d. **compound**
27. Atoms become positively charged when it _____.
- a. shares electrons
 - b. loses electrons
 - c. loses protons
 - d. **gains electrons**

28. An atom has two distinct regions:
the _____ and the _____.

- a. nucleus; proton cloud
- b. proton; neutron region
- c. electron cloud; electrons
- d. **electron cloud; nucleus**

29. A substance with a pH of 0 is a _____.

- a. **neutral**
- b. strong acid
- c. strong base
- d. metal

30. Which one of the following substances will float in water? The density of water is 1.0 g/cm³.

- a. density of gold = 19.3 g/cm³
- b. density of milk = 1.03 g/cm³
- c. **density of oil = 0.8 g/cm³**
- d. density of blood = 1.06 g/cm³