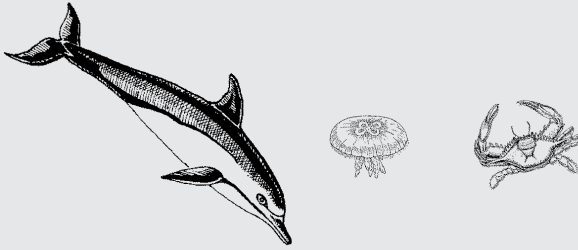


DIRECTIONS

Read each question carefully and choose the best answer. Then mark the space in the answer booklet for the answer you have chosen.

SAMPLE



These animals are grouped together because all of them —

- A live in the water
- B are fish
- C are warm-blooded
- D lay eggs

1 Which of these uses the force of gravity to make it move?

- A A sailboat moving across a lake
- B A car making a right turn
- C A snow sled going downhill
- D A bicycle rolling to a stop

2 The presence of permafrost is a characteristic of which major biome?

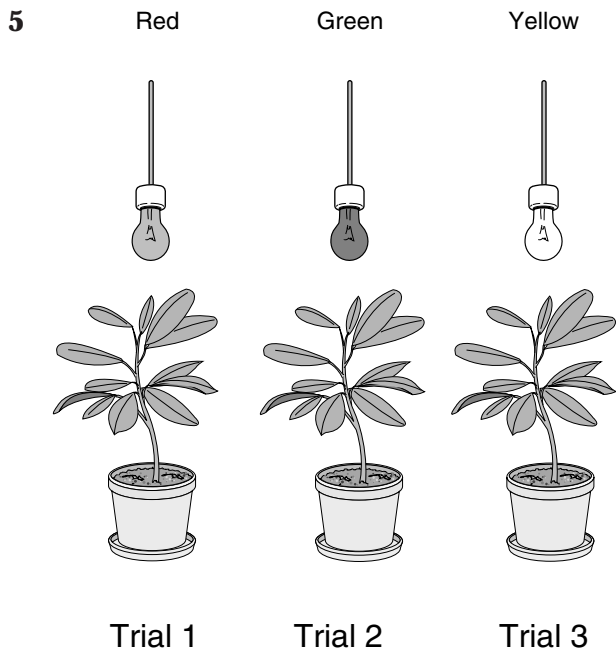
- A Tundra
- B Taiga
- C Temperate forest
- S Grasslands

3 Plants release oxygen into the air as a result of photosynthesis. Which of these do plants need for photosynthesis?

- A Carbon dioxide
- B Nitrogen
- C Methane
- D Hydrogen

4 A student wanted to test the hypothesis that adding antifreeze to water lowers the freezing point of water. The student found that pure water froze at 0°C, while the water/antifreeze mixture froze at -20°C. In order to confirm the results, the student should repeat the experiment using —

- A a container of a different size
- B a different amount of antifreeze
- C a different amount of water
- D exactly the same set-up as the first experiment



This experiment was set up to test the hypothesis that plants grow faster in green light. What is the independent variable in this experiment?

- A Type of plant
- B Amount of water
- C Color of light
- D Size of pot

6

Period																																			
Group		1		2												13		14		15		16		17		18									
1	1	H																										2		He					
2	3	Li	4	Be											5	6	7	8	9	10							Ne								
3	11	Na	12	Mg	3											13	14	15	16	17	18							Ar							
4	19	K	20	Ca	21	Sc											29	30	31	32	33	34	35	36							Kr				
5	37	Rb	38	Sr	39	Y	4											47	48	49	50	51	52	53	54							Xe			
6	55	Cs	56	Ba	*											79	80	81	82	83	84	85	86							Rn					
7	87	Fr	88	Ra	†																														

alkali metals

alkaline earth metals

halogens

noble gases

Which of the following elements has 16 protons?

- A Oxygen
- B Chlorine
- C Sulfur
- D Germanium

7 The amount of gravitational attraction between the Earth and an object depends on the object's distance from the Earth and the object's —

- A shape
- B mass
- C state of matter
- D size

8 Of the following, which is the correct progression in the food chain?

- A Producers → herbivores → carnivores
- B Herbivores → producers → carnivores
- C Producers → carnivores → herbivores
- D Carnivores → herbivores → producers

9 Which of these are found in plant cells but *not* in animal cells?

- A Mitochondria
- B Chloroplasts
- C Cell membranes
- D Endoplasmic reticulum

10 A student predicts that more sugar will dissolve in warm water than in cold water. She puts some water in a container, adds sugar, and then stirs. The amount of undissolved sugar is then observed. When this student repeats the experiment to verify her prediction, the only thing that should change is the —

- A amount of water used
- B temperature of the water
- C amount of sugar used
- D amount of time stirring

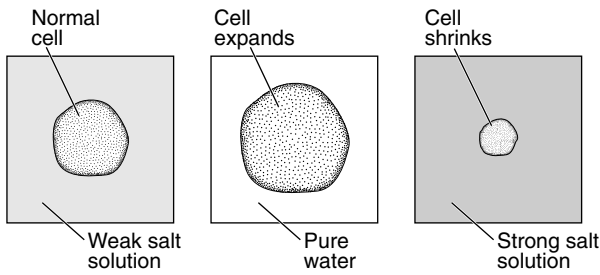
11 Which of the following molecules does *not* contain three atoms?

- A O₃
- B N₂
- C H₂O
- D CO₂

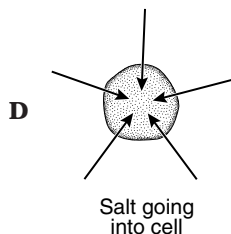
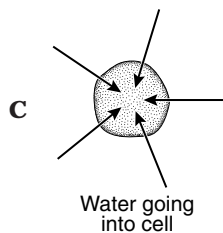
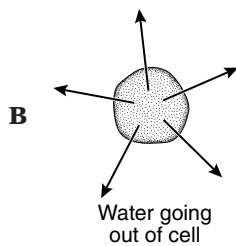
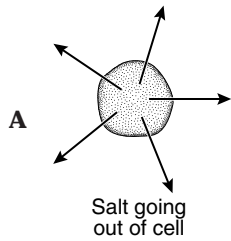
12 The function of a cell nucleus is to —

- A direct the activities of the cell
- B help the cell expel waste
- C digest foreign substances
- D transport substances around the cell

13



Which of these best shows what is happening to the cell in pure water?



14 Which of these processes in the water cycle causes dew to form in the morning?

- A Condensation
- B Evaporation
- C Transpiration
- D Precipitation

15 A student conducted an experiment on plant growth that required adding about one cupful of liquid fertilizer to several plants each week. In order to accurately measure the fertilizer given to each plant, the fertilizer volume should be measured in —

- A cubic meters
- B milliliters
- C cubic feet
- D kiloliters

16 Early space flights were unmanned because —

- A humans had no interest in space exploration
- B reliable life-support systems were not yet developed
- C rockets flew too fast for human survival
- D humans could not withstand the force of takeoff

17 One way plants and animals are alike is that they both —

- A move to get their food
- B make their own food
- C use carbon dioxide
- D use oxygen

18 Consumers of electrical energy are billed according to how much energy they use. The unit most commonly used for measuring electrical energy consumption is the —

- A millivolt
- B ohmmeter
- C newton-meter
- D kilowatt-hour

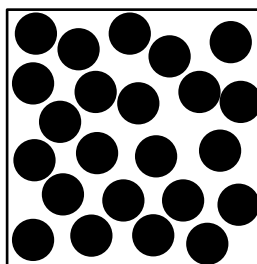
19 Which of these *cannot* be separated into its parts by an ordinary chemical or physical process?

- A A mixture of salts (NaCl, KI)
- B A compound of nitrogen (NH_3)
- C An atom of carbon (C)
- D An acid of chlorine (HCl)

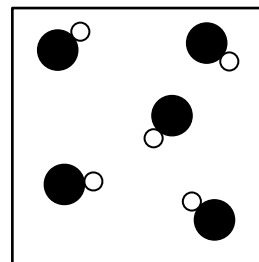
20 A student determined the mass and volume of a gold ring. What physical property of the gold can be determined using these two measurements?

- A Its reactivity
- B Its expansion rate
- C Its density
- D Its melting point

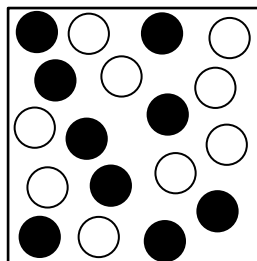
21 Which of these *best* shows particles in a mixture?



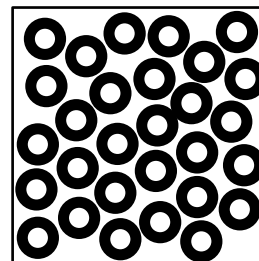
A



C



B



D