

UNIT 1

1. Which of the following statements does *not* describe fluids?
 - A) they take up space
 - B) they may be poured
 - C) they level out flat when they are poured
 - D) they always take on the shape of their container

2. An oil tanker has hit an iceberg in the Arctic Ocean. This collision has resulted in oil being spilled into the water. The oil settles on top of the water, thus separating this mixture into two distinct parts. What are these two parts called?
 - A) solutions
 - B) phases
 - C) sections
 - D) suspensions

3. What can be done to remove the salt from seawater?
 - A) desalinate the water
 - B) allow the Sun to perform the process of evaporation
 - C) continue to add more and more water until the salt content is so minimal that it cannot be detected
 - D) filter the solution so the salt is trapped in the filter

4. Viscosity varies from liquid to liquid. How could you determine which of two liquids had greater viscosity?
 - A) volume
 - B) particle size
 - C) resistance to flow
 - D) resistance to evaporation

5. Which of the following best explains why oil floats on water?
 - A) The attractive forces of water are not strong enough to support the oil.
 - B) The attractive forces of oil are stronger than the attractive forces of water.
 - C) Water has a lower density than oil.
 - D) Oil has a lower density than water.

6. Wearing a life jacket while on a boat can help to save your life if you fall into the water. Why is this the case?
 - A) The life jacket lowers your average density.
 - B) The life jacket raises your average density so it is less than that of water.
 - C) The life jacket is made of high-density materials.
 - D) The life jacket stabilizes your density.

7. Pascal was the first person to discover which of the following facts?
 - A) Pressure in a fluid is exerted in all directions.
 - B) 1 N/m^2 is equal to 1 Pa.
 - C) When a force is increased, the pressure is increased.
 - D) Fluids can be effective in the operation of large mechanical systems.

8. What is hydraulics?
 - A) the study of the compressibility of fluids
 - B) the study of the compressibility of liquids
 - C) the study of pressure in fluids
 - D) the study of pressure in liquids

UNIT 2

1. What is the name of the process of making food using carbon dioxide, water, and energy from the Sun?
 - A) photosynthesis
 - B) regeneration
 - C) respiration
 - D) digestion
 2. Compound light microscopes offer a greater power of magnification than the early microscopes. This power of magnification may be attributed to which of the following?
 - A) the condenser lens
 - B) the fine-adjustment abilities
 - C) the two lenses
 - D) the coarse-adjustment knob
 3. The interior of a cell can be, in some ways, compared to the environment in which an unborn baby lives. The baby in the womb lives in and is cushioned by amniotic fluid. Which part of a cell could be compared to amniotic fluid?
 - A) vacuole
 - B) cell membrane
 - C) cytoplasm
 - D) cell wall
 4. What kind of membrane lets every particle pass through it?
 - A) selectively permeable
 - B) permeable
 - C) impermeable
 - D) nucleus
 5. A human being is able to function as a result of messages being sent between the brain and other body parts. What kind of tissue performs this task?
 - A) nerve
 - B) connective
 - C) epithelial
 - D) epidermal
 6. The function of veins is to transport blood throughout the body. Within the vein are special structures called valves. What is the function of these valves?
 - A) to regulate the amount of blood travelling through the body
 - B) to diffuse the blood through to the capillaries
 - C) to prevent blood from flowing backward
 - D) to move gases back and forth from the alveoli and the blood vessels
 7. All of our body systems must be working properly for optimum health. When one system is disrupted, the entire body may be affected. Malfunctioning of which of the following systems most often leads to hospitalization of Canadians?
 - A) respiratory system
 - B) digestive system
 - C) circulatory system
 - D) excretory system
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UNIT 3

1. Which of the following is evidence that light travels in straight lines?
 - A) Glass is transparent.
 - B) Shadows form.
 - C) Candles give off light.
 - D) Car headlights point forward.
2. On a smooth plane mirror, if the angle of incidence is 30° then the angle of reflection is
 - A) 30°
 - B) 60°
 - C) 90°
 - D) none of the above
3. Refraction ...
 - A) can be transformed into chemical energy, electrical energy, or thermal energy
 - B) is the bending of light as it passes from one medium to another
 - C) allows no light to pass through it
 - D) occurs when light bounces off a surface
4. Name the opening of your eye through which light enters.
 - A) retina
 - B) optic nerve
 - C) pupil
 - D) iris
5. Which of the following do *not* use lenses?
 - A) microscopes
 - B) windows
 - C) telescopes
 - D) magnifying glasses
6. The difference between incoherent light and coherent light is demonstrated by a laser. The laser, which is used for many purposes gives off coherent light, which are ...
 - A) waves with multiple frequencies
 - B) waves with only one frequency
 - C) waves with variable wavelengths
 - D) waves with a variable amplitude
7. The best representation of wavelengths moving **fastest to slowest** is:
 - A) Gamma, Microwaves, Radiowaves, X-rays
 - B) Gamma, Radiowaves, UV, X-rays
 - C) Visible light, Infra Red, Microwaves, Radiowaves
 - D) UV, Visible Light, Infra Red, Gamma

UNIT 4

1. A slanted surface used to raise an object is _____.
 - A) an efficiency board
 - B) an effort ramp
 - C) an inclined plane
 - D) a screw

2. When two or more simple machines work together, they are called a(n)

- A) compound machine
- B) effort machine
- C) screw
- D) simple machine

3. How should you calculate the speed advantage of a pair of gears?

- A) Add the number of driver teeth to the number of driven teeth.
- B) Subtract the number of driver teeth from the number of driven teeth.
- C) Multiply the number of driver teeth by the number of driven teeth.
- D) Divide the number of driver teeth by the number of driven teeth.

4. What must you do to calculate pressure?

- A) divide area by force
- B) divide force by distance
- C) divide area by newtons
- D) divide force by area

5. How does a hovercraft transport people, cars, and equipment over land or water?

- A) Air pressure is created below the craft.
- B) Air pressure is created behind the craft.
- C) Air pressure is created on top of the craft.
- D) Hydraulic pressure is created on the water below the craft.

6. What type of lever is a human arm?

- A) Class 1
- B) Class 2
- C) Class 3
- D) Class 4

7. In 1879, people in the prairies relied on several modes of transport to move materials, farm equipment, and themselves. What types of transport did they use?

- A) steam boats on the rivers and steam engine trains on land
- B) trains only, because prairies are landlocked and no ships can travel there
- C) steam boats only, because the railway was not yet complete
- D) neither steam boats or trains

8. What is the main body of research responsible for improvements in wheelchair design?

- A) agronomic research
- B) ergological research
- C) economic research
- D) ergonomic research

UNIT 5

1. What drives the water cycle?

- A) the Sun
- B) the Moon
- C) tides
- D) climate

2. Icebergs are formed when large chunks of ice break loose from continental glaciers.

What do glaciologists call this process?

- A) flowing
- B) birthing
- C) icefall
- D) calving

3. One source of the ocean's salts is _____ .

- A) groundwater
- B) clouds
- C) animals
- D) plants

4. When the Moon, Earth, and the Sun are in line, the tidal range is

_____ .

- A) unchanged
- B) unpredictable
- C) lowest
- D) greatest

5. Lake and pond creatures include ...

- A) beavers, turtles, and sea lions
- B) fish, frogs, and ducks
- C) sea urchins, frogs, and muskrat
- D) kelp, octopus, and sharks

6. Water pollutants include _____ .

- A) bacteria
- B) radioactive materials
- C) run-off from mines
- D) all of the above

UNIT 1

- 1
Ans: C
2
Ans: B
3
Ans: A
4
Ans: C
5
Ans: D
6
Ans: A
7
Ans: A
8
Ans: D

UNIT 2

- 1
Ans: A
2
Ans: C
3
Ans: C
4
Ans: B
5
Ans: A
6
Ans: C
7
Ans: C

UNIT 3

- 1
Ans: B
2
Ans: A
3
Ans: B
4
Ans: C
5
Ans: B
6
Ans: B
7
Ans: C

UNIT 4

- 1
Ans: C
2
Ans: A
3
Ans: D
4
Ans: D
5
Ans: A
6
Ans: C
7
Ans: A
8
Ans: D

UNIT 5

- 1
Ans: A
2
Ans: D
3
Ans: A
4
Ans: D
5
Ans: B
6
Ans: D