

The following Indiana Standards were used to develop questions for the contest.

5.1.2

5.1.6

6.1.5

5.2.4

5.2.5

5.2.7

5.2.8

6.2.2

6.2.5

6.2.6

6.2.9

7.2.1

7.2.4

7.2.6

5.3.4

5.3.5

5.3.11

5.3.12

6.3.9

6.3.17

6.3.18

6.3.19

6.3.20

7.3.5

7.3.12

7.3.14

5.5.1

6.5.4

5.6.4

Practice Questions:

1. The water cycle involves energy changes. True or False
  
2. The highest temperature reached when a cup of boiling water was poured into a cup was  $98^{\circ}\text{C}$ . After 20 minutes the temperature, was  $66^{\circ}\text{C}$ . What was the average temperature of the water during the 20 minute time period?
  - a)  $16^{\circ}\text{C}$
  - b)  $32^{\circ}\text{C}$
  - c)  $78^{\circ}\text{C}$
  - d)  $82^{\circ}\text{C}$
  
3. An ocean current moving from the equator toward the North Pole or South Pole is
  - a) Warm
  - b) Cold
  - c) Cold in the Northern Hemisphere and warm in the Southern Hemisphere
  - d) Warm in the Northern Hemisphere and cold in the Southern Hemisphere
  
4. All matter has density because
  - a) All matter has mass
  - b) All matter has volume
  - c) Both a and b are correct
  - d) Neither a nor b is correct

5. How does an increase in temperature of a liquid affect the density of the liquid?
- The density increases
  - The density decreases
  - The density is not affected by a change in temperature.
6. What is the source of surface currents in the oceans?
- Melting icebergs
  - Mixing of water masses of differing temperature
  - Wind blowing across the surface
  - The Coriolis effect
7. The density of copper is  $8.96 \text{ g/cm}^3$ . A sample of a metal has a mass of  $40.0 \text{ g}$  and a volume of  $6.0 \text{ cm}^3$ . What can you determine about the sample?
- The sample is definitely copper.
  - The sample is definitely NOT copper.
  - The sample may be copper.
  - There is not enough information to determine the identity of the sample.
8. A pyrite rock has a density of  $5.02 \text{ g/cm}^3$ . What will happen when the rock is placed in a beaker of mercury which has a density of  $13.6 \text{ g/cm}^3$ ?
- It will float
  - It will sink
  - It will neither float nor sink but remain suspended
9. The density of alcohol is  $0.80 \text{ g/cm}^3$ . What is true about the mass of  $10 \text{ cm}^3$  of alcohol compared to the mass of  $10 \text{ cm}^3$  of water which has a density of  $1.0 \text{ g/cm}^3$  ?
- Greater
  - Less
  - The same

## 2010 Science Bowl Practice Question Answers

1. True (because evaporation requires heat energy)
2. D (because  $98 + 32 = 164$ ;  $164 / 2 = 82$ )
3. A
4. C
5. B
6. C
7. B
8. A
9. B