Name _____

8th Grade Science Blizzard Bag DAY 3

Please try your BEST and answer ALL of the questions. You can print the question pages and mark your answers on them or simply write your answers on a separate sheet of paper.

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1. A geologist studying rocks in a desert found a special kind of deposit called varves. Varves are thin, alternating layers of dark and light sediment that typically form in glacial lakes.

Because she knows that there are no glacial lakes in her hot, dry field area today, the geologist determines that there was likely a glacial lake there in the past. Based on this drastic change in surface features, what can be determined about the local climate history?

- **A.** No local climate changes have occurred in this area.
- **B.** The local climate was likely hotter and drier in the past.
- **C.** The local climate was likely hotter and wetter in the past.
- **D.** The local climate was likely colder and wetter in the past.

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2. In the Southwestern U.S., tectonic forces have pushed rocks upward over millions of years to form the Colorado Plateau. As the plateau has risen during this time, the Colorado River has been cutting down through the plateau to form the Grand Canyon.

Development of the Grand Canyon through the uplift of the plateau and erosion by the Colorado River illustrates that

- **A.** landforms result from a combination of constructive and destructive forces.
- **B.** landforms result from neither constructive nor destructive forces.
- **C.** landforms result from destructive forces only.
- **D.** landforms result from constructive forces only.

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3. Mildred collects a sample of fossilized plant material. She takes it back to her lab to run some tests on it. Mildred is able to measure the amount of carbon-14 in her sample and compare this to the amount of carbon-12 in it. She uses this information to calculate that the fossil is 4,500 years old.

The process that Mildred used is known as _____.

- **A.** faulting
- **B.** radiocarbon dating
- **C.** indexing
- **D.** superposition

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4. Suppose a bicycle was coasting on a level surface, and there was no friction. What would happen to the bicycle's speed?

- **A.** The speed would decrease until you finally came to a stop.
- **B.** The speed would increase since there is no friction.
- **C.** The speed would remain constant.
- **D.** The speed would decrease but you would never stop.

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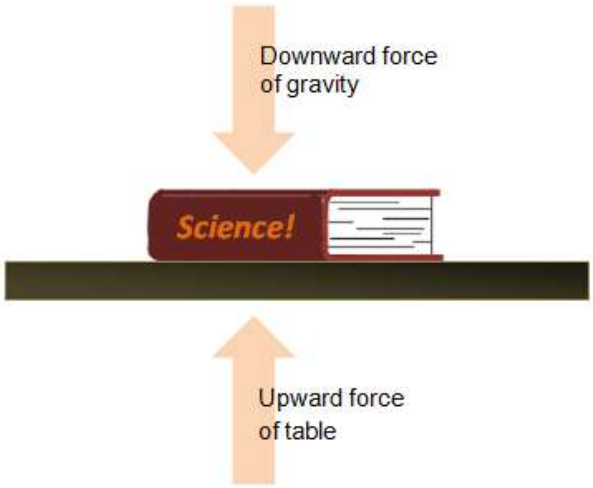
5. Which of the following is true about volcanic eruptions?

- **A.** Volcanic eruptions act as constructive forces when they blast away the sides of volcanoes.
- **B.** Volcanic eruptions act as constructive forces when volcanic gases cause acid rain that weathers rocks.
- **C.** Volcanic eruptions never act as constructive forces because they do not build up landforms.
- **D.** Volcanic eruptions act as constructive forces when lava builds up to form volcanoes and plateaus.



6.

How would the forces on the book best be described?

- **A.** The forces on the book are balanced.
- **B.** The forces on the book do not cancel each other out.
- **C.** The forces on the book cause a change in the book's motion.
- **D.** The forces on the book are unbalanced.

7. A hockey puck slides across an ice rink more easily than it does across a rough concrete surface. Why is this?

- **A.** There is more friction on the ice rink.
- **B.** There is more gravity on the ice rink.
- **C.** There is less friction on the ice rink.
- **D.** There is less gravity on the ice rink.

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8. A train is speeding down a railroad track at a speed of 50 miles per hour. From whose reference point is the train not moving?

- **A.** a person sitting on the tracks 1 mile in front of the train
- **B.** a person sitting on the train
- **C.** a person sitting on the tracks 1 mile behind the train
- **D.** a person standing to the side of the railroad tracks

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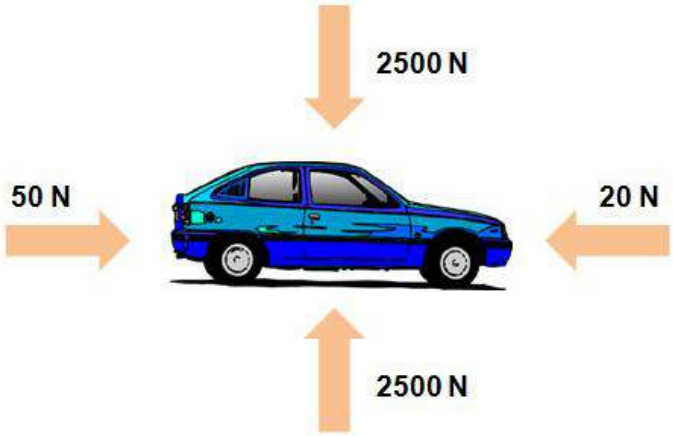
9. Which statement is true about the gravitational force?

- **A.** It acts on all objects all of the time.
- **B.** It only acts on objects that are close to each other.
- **C.** It only acts on objects that are moving apart.
- **D.** It only acts on objects that are in contact.



10.

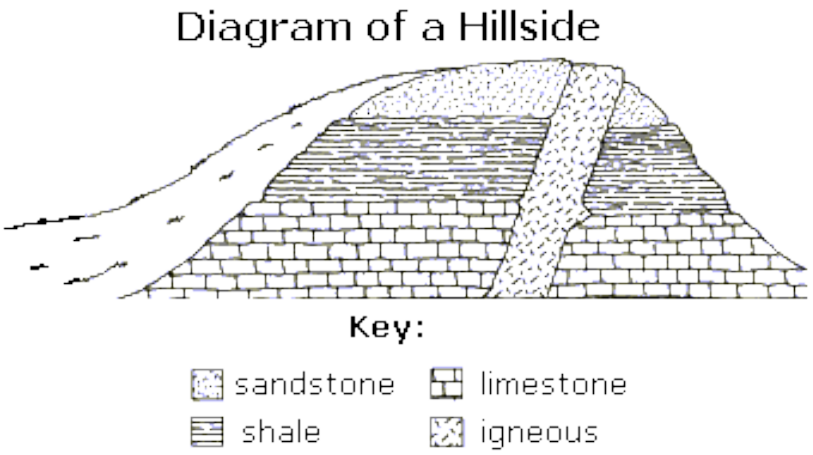
What is the magnitude (size) and direction of the cumulative force acting on the car shown in the picture above?

- **A.** 2500 N up
- **B.** 2500 N down
- **C.** 30 N to the left
- **D.** 30 N to the right

11. An object's _____ depends on gravity, but an object's _____ does not.

- **A.** density; volume
- **B.** volume; density
- **C.** weight; mass
- **D.** mass; weight

12.



The diagram above shows a cross section of a hillside. Four rock units are shown in the cross section. Which of these units is the **youngest**?

- **A.** limestone unit
- **B.** igneous unit
- **C.** shale unit
- **D.** sandstone unit

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13. John and Daniel are playing tug-of-war together. John is exerting 10 N of force. Daniel is exerting 12 N of force. What is their net force?

- **A.** 22 N in Daniel's direction
- **B.** 2 N in John's direction
- **C.** 2 N in Daniel's direction
- **D.** 22 N in John's direction

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14. Newton's first law of motion states that an object will keep a constant speed and direction unless acted upon by an unbalanced force.

To test this statement, Martin rolled a ball on a long, level street. The ball did not bump into any object, but it eventually came to a stop. How is this possible?

- **A.** The unbalanced force that caused the ball to stop was friction.
- **B.** Martin did not roll the ball hard enough, which caused the ball to eventually stop rolling.
- **C.** Every moving object must come to a stop because energy cannot be destroyed.
- **D.** Newton's first law of motion only holds true in space, not on Earth.

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15. Charles rolled a ball across the floor and noticed that it stopped before reaching the other side of the room. A force applied to the ball in the opposite direction in which it was rolling caused this to happen.

What is the name of this force?

- **A.** friction
- **B.** gravity
- **C.** electricity
- **D.** magnetism

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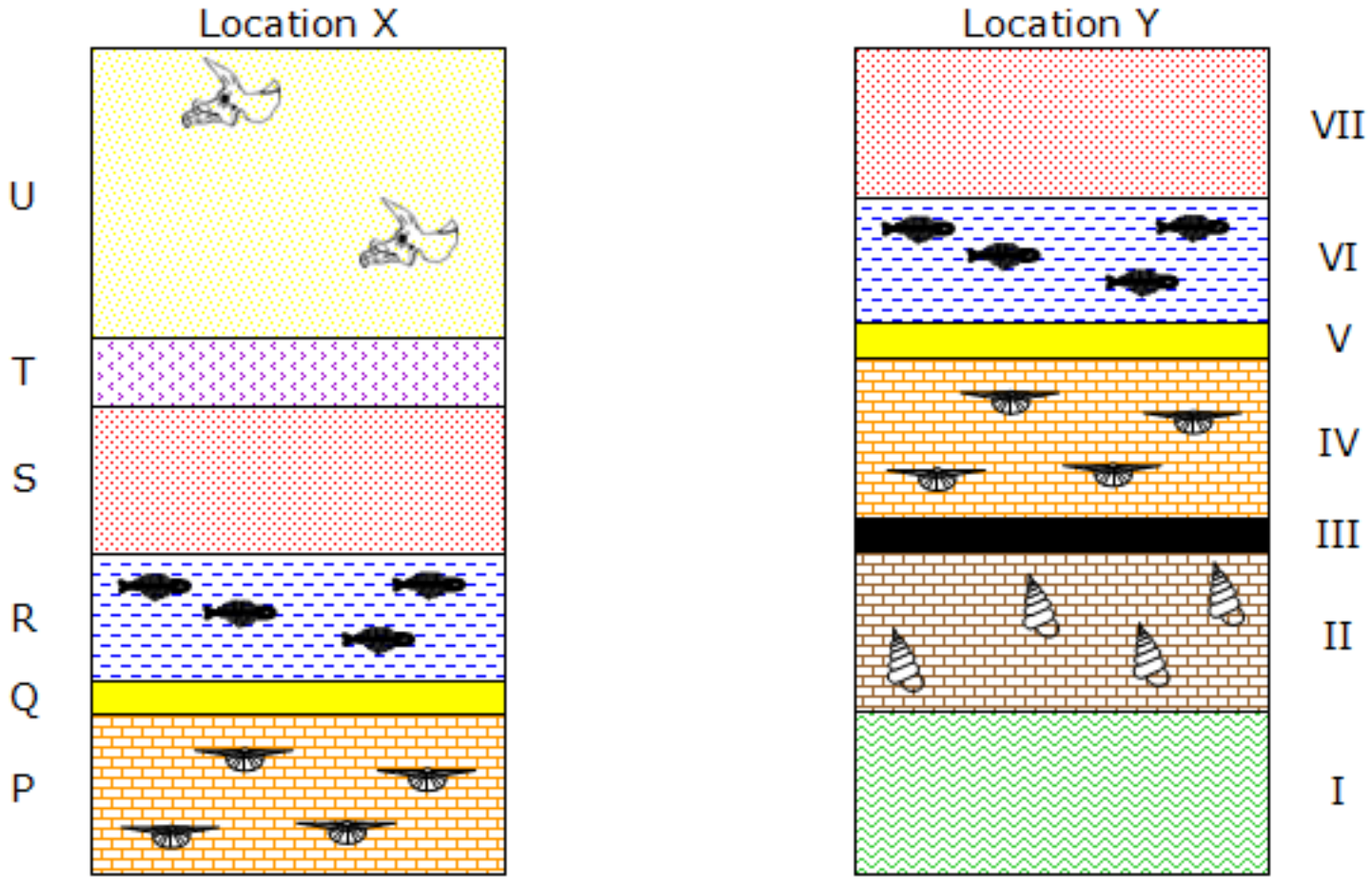
16. The diagrams below represent rock layers found in two different locations by two different scientists. The scientist at Location X used letters to label his rock layers, while the scientist at Location Y used roman numerals to label her layers. Examine these diagrams, and then answer the question that follows.



The scientists both used the same colors and patterns to represent different types of rocks. They also used the same set of black-and-white symbols to represent specific types of fossils in the layers. By correlating layers based on fossils and rock types, the two scientists have discovered that certain rock layers are present in both locations.

Which layers are the same?

- **A.** Layers T and U are the same as layers I and II.
- **B.** Layers P, Q, R, and S are the same as layers I, II, III, and IV.
- **C.** Layers T and U are the same as layers VI and VII.
- **D.** Layers P, Q, R, and S are the same as layers IV, V, VI, and VII.

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17. A rock is sitting on a hill and gravity should make the rock slide down the hill. What force is acting to balance gravity, keeping the rock in place?

- **A.** centripetal force
- **B.** momentum
- **C.** gravity
- **D.** friction

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18. Tony weighs 180 pounds on the surface of the Earth. If Tony travels to the Moon, his weight will be about 30 pounds.

Judging from this information, which of the following would be a good general definition of "weight"?

- **A.** Weight is a measure of the mass of objects.
- **B.** Weight is a measure of electromagnetic attraction between objects.
- **C.** Weight is a measure of the volume of objects.
- **D.** Weight is a measure of the force of gravity on objects.

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19. Which of the following can be destructive to Earth's surface?

- **A.** rainstorm
- **B.** hurricane
- **C.** volcanic eruption
- **D.** all of these

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20. Which of the following situations demonstrates balanced forces?

- **A.** a child on a moving seesaw
- **B.** a clock's pendulum in motion
- **C.** a rock thrown upward, being acted on by gravity
- **D.** a car driving on a straight freeway at 60 miles per hour