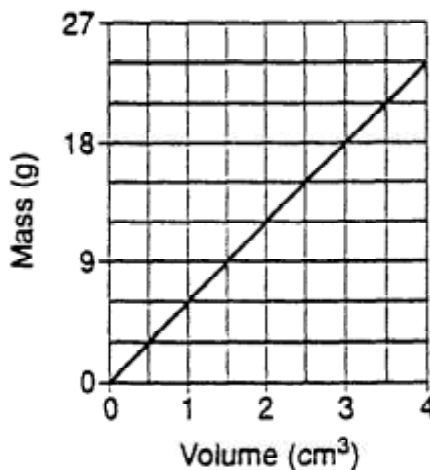


Name _____

Date _____

Topic 1 Review Exam

1. The graph to the right shows the relationship between mass and volume of a mineral.



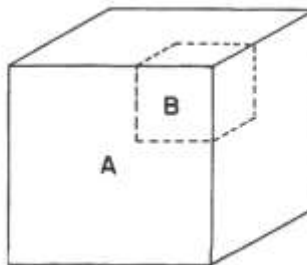
What is the mass of a sample of a 2cm³ sample of this mineral?

- (1) 1.0 g
- (2) 12.0 g
- (3) 3.0 g
- (4) 6.0 g

Base your answers to **questions 2-3** on your knowledge of Earth Science, the *Earth Science Reference Tables*, and the diagram below. Object A is a solid made of uniform material having a mass of 65 grams and has a volume of 40.6 cm³.

2. The density of object A is approximately

- (1) 0.6 g/cm³
- (2) 1.6 g/cm³
- (3) 6.2 g/cm³
- (4) 24.9 g/cm³



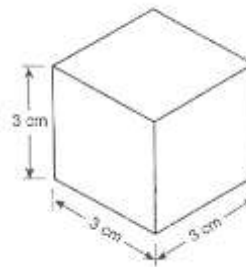
3. If one were to cut cube B and remove it from cube A, the density of cube A will

- (1) increase
- (2) decrease
- (3) remain the same

4. The material shown to the right has a density of 4 g/cm³

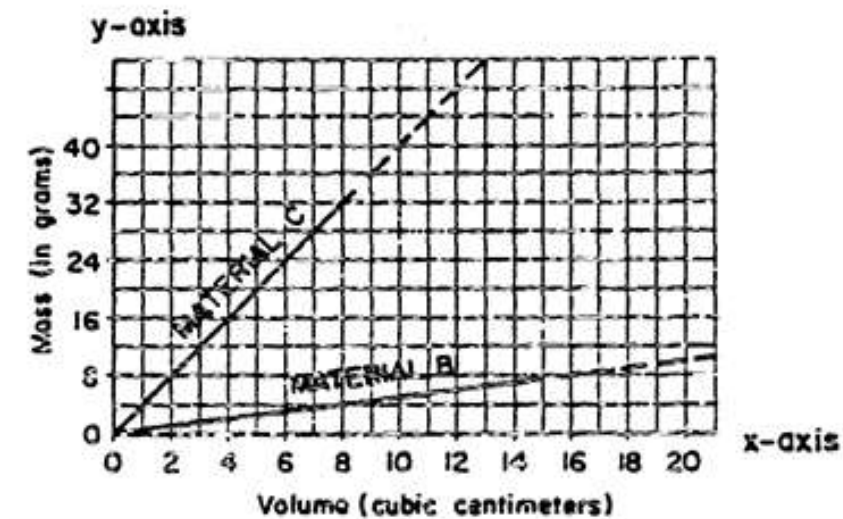
What is the material's mass?

- (1) 9 g
- (2) 12 g
- (3) 54 g
- (4) 108 g



5. As liquid water evaporates and becomes a gas (water vapor), its density
- (1) increases because water molecules move closer together
 - (2) decreases because water molecules move closer together
 - (3) increases because water molecules spread farther apart
 - (4) decreases because water molecules spread farther apart

Base your answers to **questions 6-7** on the graph below. The graph indicates the relationship between the mass and volume of materials B and C.



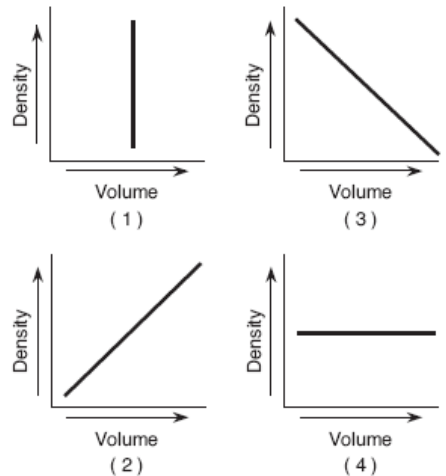
6. What is the density of material C?
- (1) 0.25 g/cm³
 - (2) 14 g/cm³
 - (3) 56 g/cm³
 - (4) 4.0 g/cm³
7. If material B and material C were placed in a bowl of liquid water
- (1) both materials would float
 - (2) both materials would sink
 - (3) material C would sink, but material B would float
 - (4) material B would sink, but material C would float
8. Which of the following statements is true of an astronaut standing on the surface of the Moon?
- (1) The astronaut's mass is the same as it was on Earth, but he weighs considerably less because the Moon has a smaller core.
 - (2) The astronaut's mass and weight are considerably less because he is farther from the Earth's core.
 - (3) The astronaut's mass is the same as it was on Earth, but he weighs considerably less because the Moon has no gravity.
 - (4) The astronaut's mass and weight are considerably more because the Moon has more gravity.

The data table below shows the mass and volume of three samples of the same mineral.
 [The density column is provided for student use.]

Data Table

Sample	Mass (g)	Volume (cm ³)	Density (g/cm ³)
A	50	25	
B	100	50	
C	150	75	

9. Which graph best represents the relationship between the density and the volume of these mineral samples?



10. Hot air

- (1) rises because it is more dense (molecules spread farther apart)
- (2) sinks because it is more dense (molecules are closer together)
- (3) rises because it is less dense (molecules spread farther apart)
- (4) rises because it is less dense (molecules are closer together)

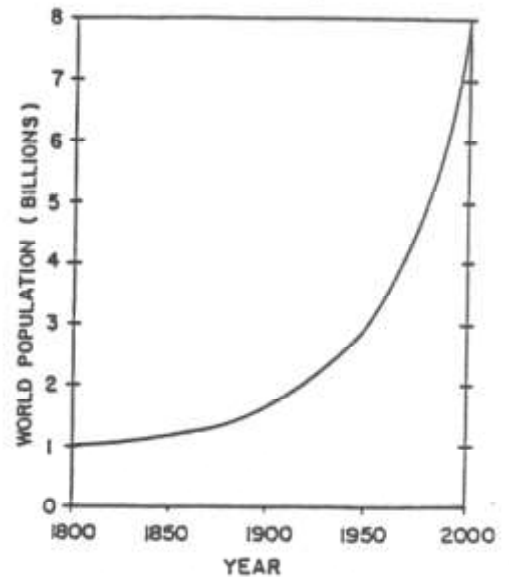
11. At 7:00am, the air pressure was 1,004mb. By 11:00am, the air pressure had risen to 1,012mb.
 What was the rate of change in the air pressure?

- (1) 8 mb/hr
- (2) 2 mb/hr
- (3) 16 mb/hr
- (4) 4 mb/hr

12. Which of the following is a noncyclic event?

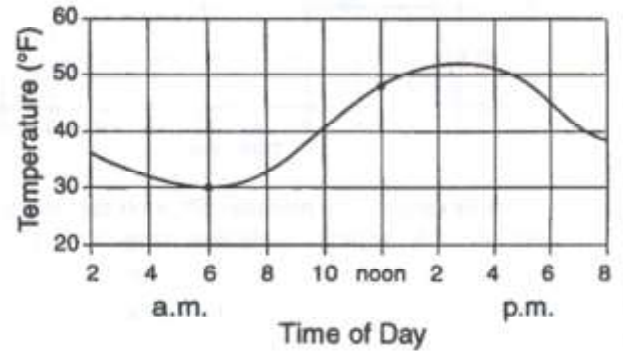
- (1) an earthquake in California
- (2) sunrise as viewed in Hawaii
- (3) seasonal changes on Long Island
- (4) a phase of the Moon as viewed in Albany

13. The graph to the right shows the world population beginning in the year 1800 and projected to the year 2000.



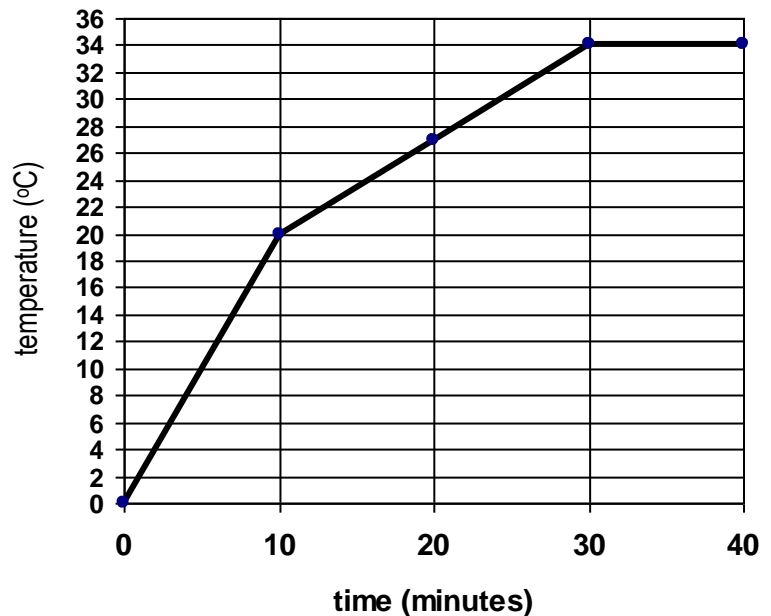
- The graph shows the fastest increase in population between
- (1) 1825 and 1850 (3) 1925 and 1950
 (2) 1875 and 1900 (4) 1975 and 2000

14. During which time period did only a direct relationship exist between temperature and time?
- (1) 2a.m. to 6a.m.
 (2) 2a.m. to 10a.m.
 (3) 6a.m. to 12p.m.
 (4) 12p.m. to 8p.m.



15. As altitude increases in the troposphere, the air temperature decreases. This is an example of a(n)
- (1) direct relationship (3) unaffected relationship
 (2) inverse relationship (4) cyclic relationship

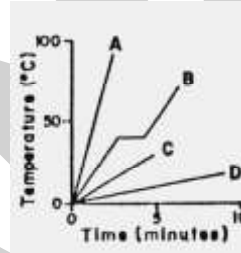
16. What is the rate of temperature change that occurred between 10 and 30 minutes?
- (1) 1.7°C/min
 (2) 0.7°C/min
 (3) 1.43°C/min
 (4) 0.47°C/min



17. If a gas was put under extreme pressure, which would probably occur?
- (1) The volume would decrease and the density would increase.
 - (2) The volume would decrease and the density would decrease.
 - (3) The volume would increase and the density would increase.
 - (4) The volume would increase and the density would decrease.

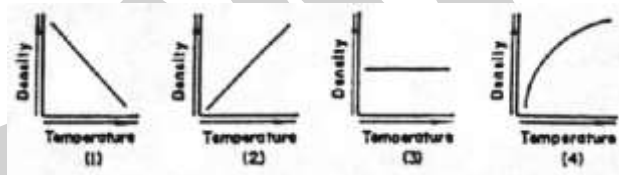
18. Which is true of ice and liquid water?
- (1) Ice is less dense than liquid water and will float when placed in it.
 - (2) Ice is more dense than liquid water and will float when placed in it.
 - (3) Ice is less dense than liquid water and will sink when placed in it.
 - (4) Ice is more dense than liquid water and will sink when placed in it.

19. The graph to the right represents the relationships between temperature and time as heat is added at a constant rate to equal masses of four substances labeled A, B, C, and D. The temperature of which substance increased most gradually?

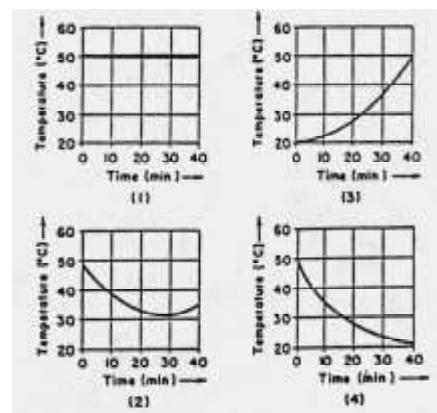


- (1) A
- (2) B
- (3) C
- (4) D

20. Which graph best represents the effect that heating has on air density in the atmosphere?



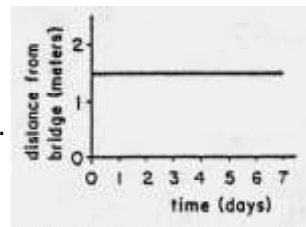
21. A beaker of water at 50°C is placed in a room where the air temperature is 20°C. Which graph best represents the change in the water temperature?



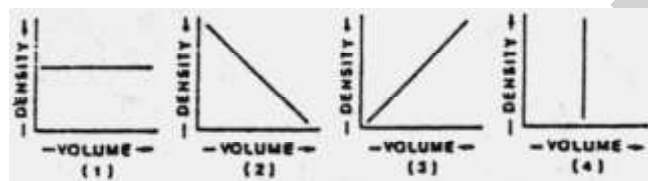
22. As viewed from the Earth, the Moon's phases have shown which type of changes over the past 50 years?
- (1) noncyclic and predictable
 - (2) noncyclic and unpredictable
 - (3) cyclic and predictable
 - (4) cyclic and unpredictable

23. A student measures the distance from a bridge to a rock every day for a week. What is indicated by the graph of these measurements as shown below?

- (1) No change in time or distance took place.
- (2) As distance decreased, time increased.
- (3) As distance increased, time decreased.
- (4) As time increased, distance remained the same.



24. A student calculates the densities of five different pieces of aluminum, each having a different volume. Which graph best represents this relationship?



25. Future changes in the environment can best be predicted from data that is

- (1) random and collected over short periods of time
- (2) random and collected over long periods of time
- (3) cyclic and collected over short periods of time
- (4) cyclic and collected over long periods of time

26. During a ten-year period, which is a noncyclic change?

- (1) the Moon's phases as seen from Earth
- (2) the Earth's orbital velocity around the Sun
- (3) the apparent path of the Sun as seen from the Earth
- (4) the impact of a meteorite on the Earth

27. Which event would be the most predictable one year in advance of the event?

- | | |
|---------------------------------|----------------------------------|
| (1) a hurricane in Florida | (3) a volcanic eruption in Japan |
| (2) an earthquake in California | (4) an eclipse of the Sun |

28. Ocean tides are examples of

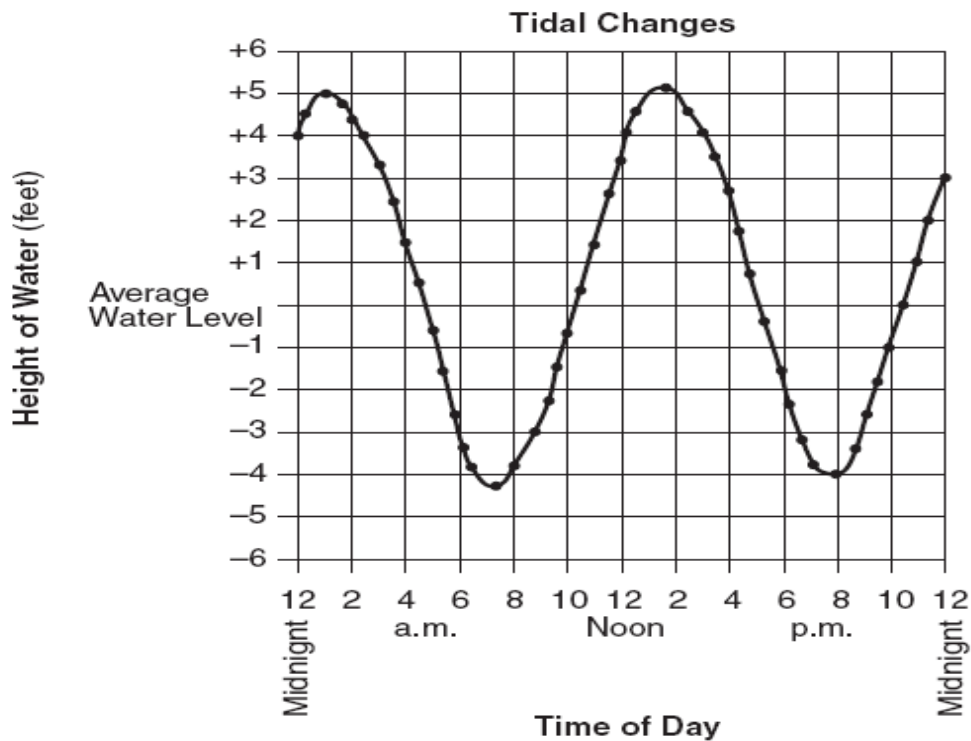
- | | |
|-------------------------|----------------------|
| (1) noncyclic events | (3) unrelated events |
| (2) predictable changes | (4) random events |

29. Which factor can be predicted most accurately from day to day?

- | | |
|-------------------------------------|-----------------------------|
| (1) time of sunrise | (3) direction of wind |
| (2) time of an earthquake occurring | (4) chance of precipitation |

30. Which statement best explains why some cyclic Earth changes may *not* appear to be cyclic?
- (1) Most Earth changes are caused by human activities.
 - (2) Most Earth changes are caused by the occurrence of a major catastrophe.
 - (3) Many Earth changes occur over such a long period of time that they are difficult to measure.
 - (4) No Earth changes can be observed because the Earth is always in equilibrium.

Base your answers to **questions 31-33** on the graph below. The graph shows the recorded change in water level (ocean tides) at a coastal city in the northeastern United States during 1 day.



31. Which conclusion about tides is best made from this graph?
- (1) The hourly rate of tidal change is always the same.
 - (2) The rate of tidal change is greatest at high tide.
 - (3) The tidal change is a random event.
 - (4) The tidal change is cyclic.
32. According to the pattern shown on the graph, the next high tide will occur on the following day at approximately
- (1) 12:30 a.m.
 - (2) 2:00 a.m.
 - (3) 3:15 a.m.
 - (4) 1:30 a.m.
33. Which of the following statements is supported by the graph?
- (1) there are 4 times of maxima
 - (2) at 4 a.m. the water height was 1.5 feet above average
 - (3) at 7:30 a.m. the water height was 5.8 feet above average
 - (4) the highest tide was recorded at 1 a.m.