

Name _____

FINAL REVIEW – General Science Grade 8

Scientific Method-Measurement:

1. The measure of the amount of matter in an object is its _____
2. As the pull of gravity on an object increases, there is always an increase in the objects _____
3. An instrument used to measure mass is the _____
4. The amount of space an object takes up is _____
5. For an object to float on water, the object's density must be _____
6. What is the correct unit label for the mass of a regular solid? _____
7. What instrument would be the most accurate tool to measure the VOLUME of liquids?

8. When reading a graduated cylinder, one must read the _____ of the meniscus.
9. The density of an object can be found by measuring its _____ and volume.
10. An ice cube has a density _____ than water.
11. If a bar of gold is cut in half, its density _____
12. Water displacement is a method used to measure the volume of an _____ solid.
13. _____ never changes as you travel from one place to another.

ANSWER THE QUESTIONS AND SHOW ALL CALCULATIONS WHERE NECESSARY.

14. What is the volume of a cube if the following measurements were taken: **SHOW FORMULA AND MATH**
Length = 5.0 cm
Width = 5.0 cm
Height = 5.0 cm
 15. If the mass of the object in the above question is 5g, what is the density of the object?
SHOW FORMULA, MATH, AND UNITS _____
-

16. Define the following:

Observation: _____

Hypothesis: _____

Control _____

Independent Variable: _____

Dependent Variable: _____

Conclusion: _____

Rocks and Minerals:

- 1. Magma in the Earth's crust that has risen to the surface and cools and solidifies. **A. Magma**
- 2. Rock that is forced downward and is altered due to heat and pressure. **B. Sediments**
- 3. Rocks that are partially or completely melted **C. Igneous Rock**
- 4. Formed from fragments of rock that have been broken or weathered and cemented together **D. Sedimentary Rock**
- 5. A naturally occurring solid mixture of one or more minerals or organic matter is called _____ **E. Metamorphic Rock**
- 6. What factors that can affect the texture of an igneous rock?

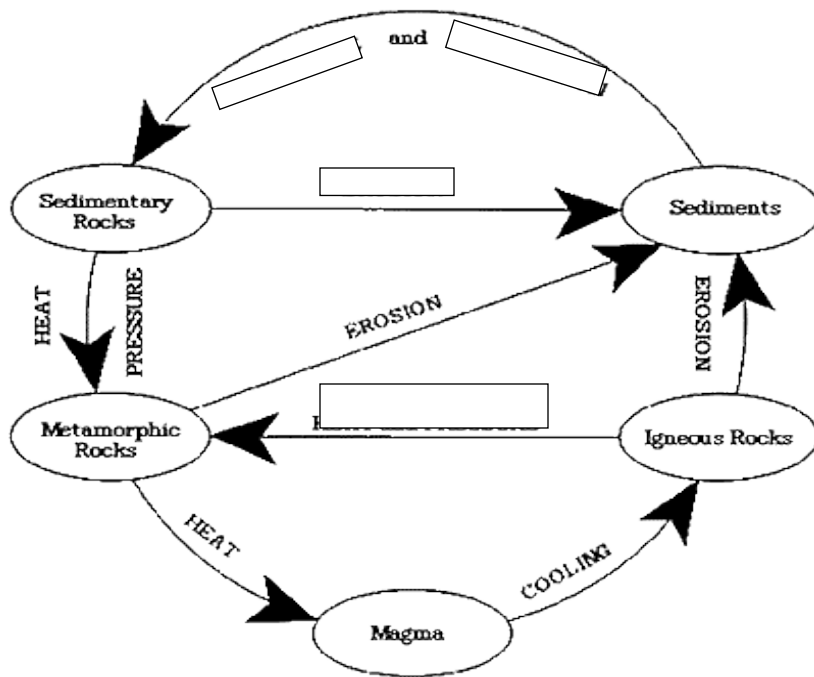
- 7. The continual process by which new rock forms from old rock is called _____
- 8. A rock deep underground is primarily affected by forces of _____
- 9. What are the markings on sedimentary rocks that record the wave motion of wind or water called?

- 10. What force or forces can create metamorphic rock? _____
- 11. What is the name for the trace or remains of an organism that lived long ago, often found in rocks?

- 12. Erosion is one of the major causes of the missing rock layers known as _____
- 13. Most fossils are preserved in _____ rock because

14. Which rock's name comes from the Latin word that means "fire"? _____
15. What factors can affect the texture of a sedimentary rock? _____
16. Fossils used to date surrounding rock layers is called a(n) _____
17. The phrase "younger over older" could be used to remember the principle of _____
18. The process in which water ,wind, ice and heat break down rock is called _____
19. Sedimentary rocks form at or near the Earth's _____.
20. Over time, grains of sand may be compacted and cemented together to form a rock called _____.
21. _____ is the movement of sediments from one place to another.

Label the missing parts of the rock cycle.



Dynamic Earth:

1. The layer of rock and sediment on the Earth's surface is the _____
2. The hydrosphere is mostly _____
3. Innermost layer of the Earth is _____

Base your answers to questions 4-6 on the diagram below.

The diagram shows how scientists think some of the continents were connected in the past.



4. _____ What evidence suggests that the continents were once joined?
 - 1) shapes of the continents appear to fit together
 - 2) same fossils of plants and animals found on all of the continents
 - 3) same rock structures (mountains) exist where continents would have been joined
 - 4) all of these are evidence for continental joining
5. _____ For the past 250 million years, Africa and South America have
 - 1) rotated around each other
 - 2) moved further apart
 - 3) moved closer together
6. The *Theory of Plate Tectonics* suggests that the continents move because of _____

7. The layers of the Earth from the outermost to innermost are:

8. The part of the Earth that is made up of liquid molten rock is _____
9. The Earth's interior is made of mostly _____
10. The largest layer of the Earth's interior is _____
11. The solid portion of the Earth's interior is _____
12. The upper portion of the mantle, where the crust floats is known as the _____
13. Pangea is _____

14. Alfred Wegener was the scientist who stated _____

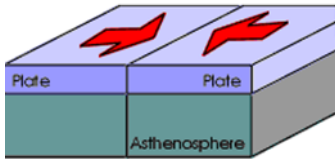
15. The supercontinent Pangaea began to break apart about 220 million years ago. State 3 pieces of evidence that support the inference that Pangaea existed.

A) _____

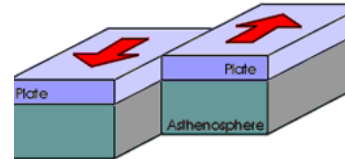
B) _____

C) _____

16. Identify the following Plate Boundaries based on the picture given

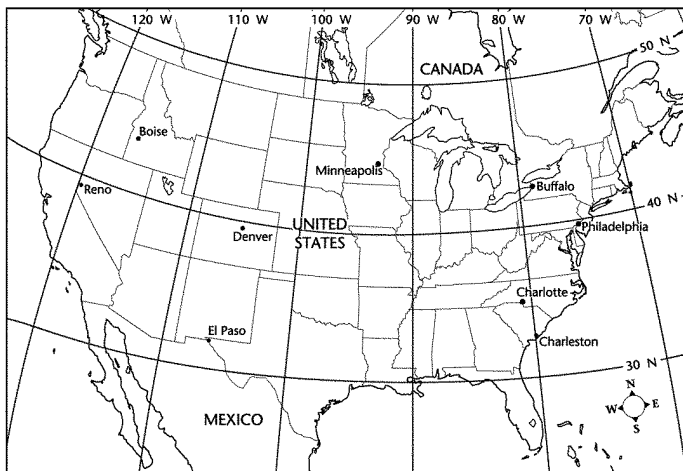


A) _____



B) _____

Use the map below to answer the following questions.



16. How many cities on the map are located west of the 110°W longitude? _____

17. What **connects** points of **equal elevation** on a topographic map? _____

18. Tectonic plates consist of _____

19. A vent or a hole in the Earth's surface through which magma and gases are expelled is called a _____

Complete each statement by filling in the correct word from the list below:

Lava Magma Prime Meridian Focus Elevation Equator

Epicenter Latitude Longitude Contour Lines Pangaea Reference Point

20. Once magma flows onto the **Earth's surface**, it is called _____.
21. The **imaginary circle** halfway between the poles is the _____.
22. People use a _____ to describe location and direction.
23. The **height** of an object **above sea level** is its _____.
24. The **molten rock inside** a volcano is called _____.

Weather:

1. Name the layers of the atmosphere from Earth to space:

_____, _____, _____, _____

2. Where would the exosphere be located? _____

3. Where is the ozone layer located? _____

4. What is the purpose/function of the ozone layer

5. _____

6. Name 3 ways that the earth is heated:

_____, _____, and _____

7. _____: the transfer of energy from the sun through space.

8. _____: the transfer of heat by direct contact.

9. _____: transfer of heat through air or a gas.

10. There are 4 things that affect weather:

Air Pressure: _____

Wind: _____

Humidity: _____

Precipitation: _____

2. Air pressure is measured using a _____ in units called _____

3. A _____ Pressure system brings weather that is fair and clear.

4. A _____ Pressure system brings cloudy, unstable weather with possible precipitation.

5. Earth is warms the air (atmosphere) by _____ currents.

6. Warm air _____ while cold air _____ because it is less dense.

7. Wind direction is measured using a _____ and wind speed is measured using an _____

8. Humidity is measured using a _____.

9. Dew Point is:

10. The four types of precipitation are: _____, _____, _____, and _____.

11. _____ measures the amount of precipitation that has fallen.

12. Name the 3 basic types of clouds: _____, _____, and _____

13. How do clouds form? _____

14. _____ are light, feathery looking clouds that are made mainly of _____.

15. _____ are thick, puffy clouds that are associated with fair weather.

16. _____ are layered and grey and associated with or possible precipitation.

17. An _____ is a large volume of air with the **SAME TEMPERATURE AND MOISTURE.**

18. A _____ is a boundary between 2 air masses, warm and cold.

19. A _____ front has **warm air** that slides UP AND OVER COLD air and brings _____ periods of precipitation.

20. A _____ front has **cold air** that PUSHES WARM AIR UPWARD

21. Name the 4 types of severe weather: _____, _____, _____, and _____

22. Draw the symbol for:

Cold Front:

Stationary Front:

Warm Front:

High Pressure:

Low Pressure:

23. What are isolines? _____

24. What do station models show?

25. Draw the station model in the space at the right for the follow conditions.

Partly sunny skies, winds from the south west at 15 mph

26. What is the greenhouse effect? Name the 2 greenhouse gases.

27. What atmospheric layer does weather take place in? _____

28. What 2 main gases make up air? _____ and _____

29. What are the percentages of them? _____ and _____

Astronomy:

1. What makes up the electromagnetic spectrum? _____

2. How long does Earth take to rotate once on its axis?

3. About how long does the moon take to orbit the Earth? _____

4. The color of a star depends on its _____

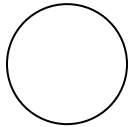
5. What color are the hottest stars? _____

6. The H-R diagram graphs what two things? _____

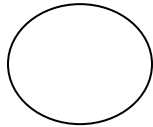
8. Each planet moves around the sun in _____

9. The Sun's position in space is best described as the approximate center of _____

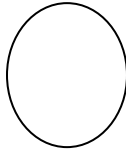
10. Which diagram most accurately shows the shape of the Earth?



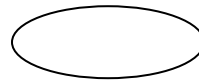
(a)



(b)



(c)



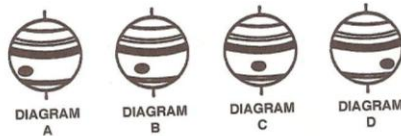
(d)

11. Which force keeps the planets in orbit around the Sun? _____

12. The Moon's gravitational force has greater effect on the ocean tides of the Earth than the Sun's gravitational force. The reason for this is

- a. The Moon has greater mass than the Sun
- b. The Moon is closer to the Earth than the Sun
- c. The Moon's mass is less than the Sun
- d. The Moon is a solid

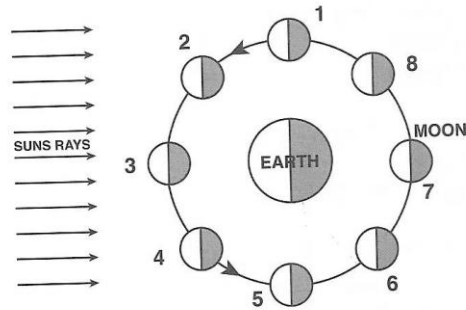
13. A planet is viewed from the Earth for several hours. The diagrams show the planet at four different times.



The best explanation for these observations is that the planet is _____

14. Which motion causes the apparent setting of the Sun each day? _____

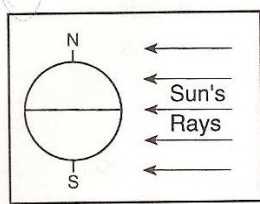
Base your answers to questions 15-16 on the diagram below, which shows eight positions of the Moon as it revolves around the Earth.



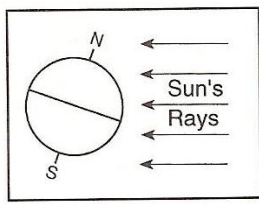
15. At which position would *the Sun be eclipsed* if the Earth, Moon, and Sun were *exactly lined up*? _____

16. At which positions would the *waning phases* be? _____

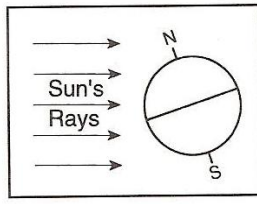
17. Which diagram would represent the first day of winter in the Northern Hemisphere?



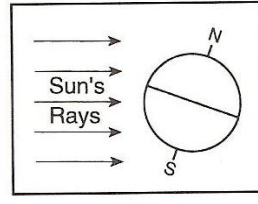
(1)



(2)



(3)



(4)

a. (1)

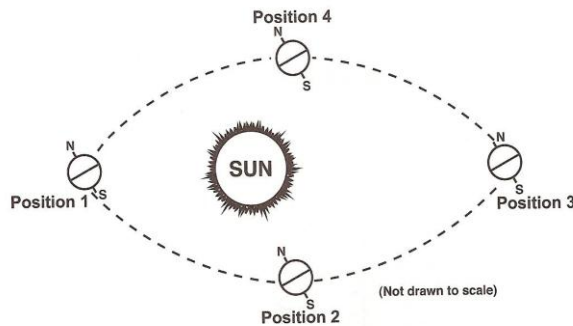
b. (2)

c. (3)

d. (4)

24. Summer days are hotter than winter days in the northern hemisphere because in the summer

Base your answers to questions 25-28 on the diagram below, which shows the four positions of Earth as it revolves around the Sun.



25. What position would represent December 21st in the Northern Hemisphere? _____

26. What position would indicate summer in the Southern Hemisphere? _____

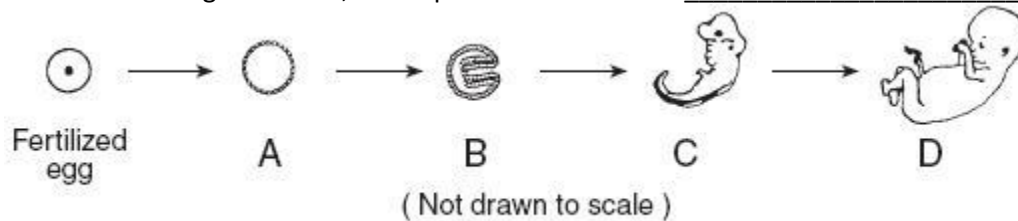
29. What position would the Northern Hemisphere get the *most direct rays* from the Sun? _____

30. The approximate amount of time it takes the Earth to move from *position 1 to 3* is _____

Reproduction:

1. All body cells are reproduced by this process: _____
2. All sex cells are considered this because of the number of chromosomes: _____
3. Which type of cell is NOT reproduced through mitosis? _____
4. When we discuss gametes, we are talking about: _____
5. How many chromosomes do egg cells have? _____
6. Fertilization that occurs inside the female body is called: _____
7. Meiosis occurs in which organs? _____
8. In animal skin tissue, cell division is responsible for _____
9. External fertilization usually occurs in what environment _____
10. A process where an egg is released from the ovary is called: _____
11. A plant produces tiny plants around the edges of its leaves. When these tiny plants fall to the ground, they take root and become new plants. This process is an example of _____

12. Between stages A and D, which process must occur? _____



13. Haploid means that the number of chromosomes in a cell have _____.
(reduced or doubled)
14. In males, both urine and sperm leave the body through the _____.
(urethra or testes)
15. A zygote attaches to the wall of the _____.
(oviducts or uterus)
16. The male hormone that triggers the development of secondary sex traits is _____.
(estrogen or testosterone)

17. The process by which blood and tissue lining leave the uterus is _____
(menstruation or ovulation)
18. What can occur during ovulation? _____
(fertilization or menstruation)
19. During _____ chromosomes line up in the middle of the cell.
(prophase or anaphase)
20. What female structure is also called the "birth canal"? _____
(cervix or vagina)
21. Which male structure produces sperm? _____
(testes or urethra)
22. During _____ an identical daughter cell is made.
(mitosis or meiosis)
23. Organisms, such as fish, which reproduce by external fertilization and development usually produce a _____ number of eggs.
(very large or very small)
24. Budding is an example of _____ reproduction.
(sexual or asexual)
25. The menstrual cycle occurs about every _____ days.
(28 or 48)
26. _____ is the joining of sperm and egg.
(Ovulation or Fertilization)
27. The offspring from asexual reproduction are genetically _____ from the parent.
(identical or different)

Choose the number that best answers the question.

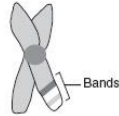
28. If a human has 46 chromosomes, how many chromosomes are found in a human sperm cell? (46, 28, 23, 4, 2)
29. How many daughter cells are produced by meiosis? (46, 28, 23, 14, 4, 2)
30. How many daughter cells are produced by mitosis? (46, 28, 23, 14, 4, 2)
-

Genetics:

1. An organism is born with a genetic abnormality not present in any of its ancestors. This abnormality is most likely the result of _____

2. What are genes composed of? _____

3. The drawing below represents a pair of chromosomes. The area labeled "bands" shows the location of _____



4. What advantage does a species that reproduces sexually have over a species that reproduces asexually?

- 1) There is greater variation among the offspring.
- 2) The offspring are identical to the parents.
- 3) Only one parent is necessary for reproduction.
- 4) No sex cells are needed for reproduction.

5. In humans a trait can be determined by one or many pairs of _____

6. What model is used to show how a trait is passed on from one generation to the next in a family _____

7. In a cross between a pure and a hybrid yellow seeded pea plant ($YY \times Yy$), the percentage of offspring showing the dominant trait will be _____

8. The percentage of offspring with the dominant trait if both parents are pure recessive is _____%

9. In most organisms, the male sex cell _____

10. Human females produce egg cells with the chromosomes _____

11. An organism that has both a dominant and recessive gene for a trait is _____

15. A trait that prevents another trait from showing is _____

Color blindness is a sex linked trait. Assume there is a couple whose sex chromosomes are XY and XXc. Make a Punnett Square on the answer sheet and then answer the questions below. C = gene for colorblindness

16. The father is represented by **(XY or XXc)**.
17. The father is **(normal or color blind)**.
18. The mother is **(not colorblind or color blind)**.
19. Of the two male children, **(both or only one)** are/is normal.
20. Of the two female children, **(both or only one)** are/is normal.
21. Of the two female children, **(both or only one)** are/is hybrid.
22. A sex linked trait will show up more often in **(males or females)**.

Matching: Select the correct letter for each statement that best matches.

- | | |
|--|-----------------|
| 23. A specific location on a chromosome | A) Homozygous |
| 24. The genotype is the same letter | B) Heterozygous |
| 25. A dominant and recessive trait | C) Probability |
| 26. Possible Outcomes | D) DNA |
| 27. Chemical code that directs cell activities | E) Gene |

28. Two pea plants with green pods, Gg × GG, were crossed. Complete the Punnett square below to show the results of this cross.

	G	g
G		
G		

29. What percentage of the offspring produced by this cross will most likely have green pods?
 _____%

30. Show the genetic makeup of two parent pea plants whose offspring would all have yellow pods.

_____ x _____

Evolution:

1. Differences between members of the same species are called _____
 2. A type of organism that no longer exists on Earth is said to be _____
 3. The Paleozoic, Mesozoic, and Cenozoic are divisions in the geologic time scale called _____
 4. Which term refers to similar structures that related species have inherited from a common ancestor?

 5. The geologic time scale is a record of _____
 6. What theory agrees with fossils records to show no intermediate life forms for long periods of time then a sudden change? _____
 7. A trait that helps an organism survive and reproduce is called a(n) _____
 8. What did Darwin observe about finches in the Galapagos Islands? _____
 9. Why do scientists think related species have similar body structures and development patterns?

 10. If two organisms look very similar during their early stages, this is evidence that the organisms

 11. What theory states that species evolve during short periods of rapid change? _____
 12. The process by which all the different kinds of living things have changed over long periods of time is called _____
 13. Which term refers to a species creating more offspring than can possibly survive? _____
 14. Which term refers to the process by which organisms that are better adapted to their environment are more likely to survive and reproduce? _____
 15. What theory states that evolution occurs steadily in tiny changes over long periods of time?

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