

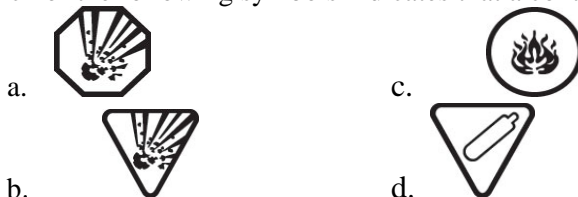
## Science 10 Practice Final

1. The following WHMIS symbols appear on a container of solvent.



These two symbols indicate that the solvent is

- biohazardous infectious material and poisonous and infectious material causing immediate and serious toxic effects
  - poisonous and infectious material causing other toxic effects and corrosive material
  - poisonous and infectious material causing immediate and serious toxic effects and corrosive material
  - poisonous and infectious material causing other toxic effects and dangerously reactive material.
2. Which of the following symbols indicates that a container is explosive?



3. Two solutions are mixed together and a cloudy opaque material forms. From your observations you conclude that
- A gas is forming
  - A precipitate is forming
  - The temperature is rising
  - No reaction is occurring

4.

5. Which column in the periodic table contains elements with two electrons in their valence energy levels?
- The first column on the left
  - The first column on the right
  - The second column on the left
  - The second column on the right

6. An atom of oxygen has 8 protons, 9 neutrons, and 8 electrons. Its mass number is
- |      |       |
|------|-------|
| a. 8 | c. 16 |
| b. 9 | d. 17 |

7. In the formula  $\text{Na}_3\text{PO}_{4(s)}$ , the charge on the polyatomic ion is
- |       |       |
|-------|-------|
| a. 3- | c. 4- |
| b. 3+ | d. 4+ |

8. The correct IUPAC name for  $\text{N}_2\text{O}_{3(s)}$  is
- nitrous oxide
  - nitrogen oxide
  - nitrogen trioxide
  - dinitrogen trioxide
9. The following are some properties of substances.
- soluble in water
  - solid at room temperature
  - conducts electricity as a solid
- Which of the properties are true for ionic compounds?
- I and III
  - I and II
  - II and III
  - I, II, and III
10. Which of the following compounds is only slightly soluble in water?
- $\text{K}_2\text{SO}_4$
  - $\text{AgCl}$
  - $\text{Ba}(\text{OH})_2$
  - $\text{KClO}_4$

11. Which of the following are general properties of acids?
- has no reaction with metal
  - tastes sour
  - conducts electricity
- I and III
  - I and II
  - II and III
  - I, II and III

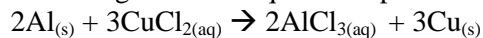
12. Which of the following is a base?
- $\text{K}_3\text{PO}_4$
  - $\text{HCOOH}$
  - $\text{HNO}_3$
  - $\text{NH}_4\text{OH}$

13. An example of an endothermic reaction is
- Combustion
  - Cellular respiration
  - The reaction in a cold pack
  - The reaction in a hot pack

14. The balanced equation for the reaction of oxygen with methane is
- $\text{O}_{2(g)} + \text{CH}_{4(g)} \rightarrow \text{CO}_{2(g)} + \text{H}_2\text{O}_{(g)}$
  - $\text{O}_{2(g)} + \text{CH}_{4(g)} \rightarrow \text{CO}_{2(g)} + 2\text{H}_2\text{O}_{(g)}$
  - $2\text{O}_{2(g)} + \text{CH}_{4(g)} \rightarrow \text{CO}_{2(g)} + 2\text{H}_2\text{O}_{(g)}$
  - $2\text{O}_{2(g)} + \text{CH}_{4(g)} \rightarrow \text{CO}_{2(g)} + \text{H}_2\text{O}_{(g)}$

15. Lithium metal reacts with nitrogen gas to form a solid white powder. The coefficient of the formula for the product is
- 1
  - 2
  - 3
  - 4

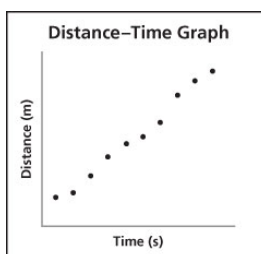
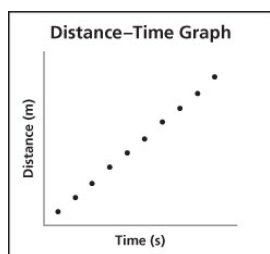
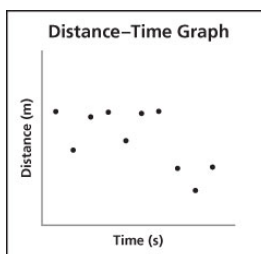
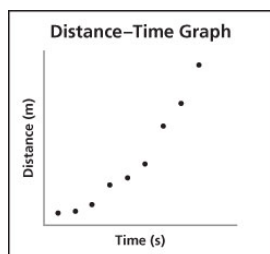
16. The following balanced equation represents the reaction of aluminum with copper(II) chloride.



This is an example of:

- formation reaction
- combustion reaction
- single replacement reaction
- double replacement reaction

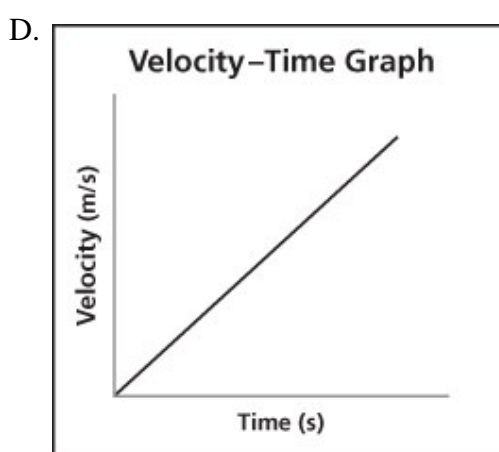
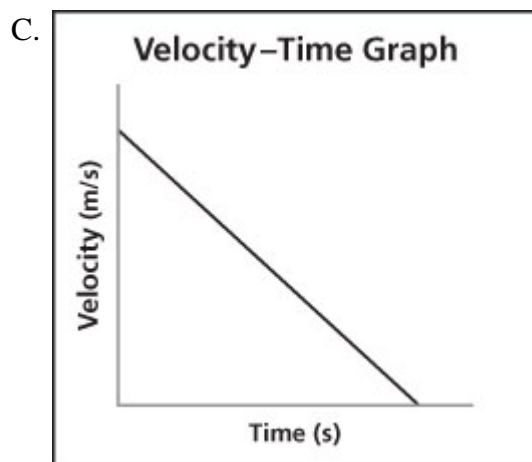
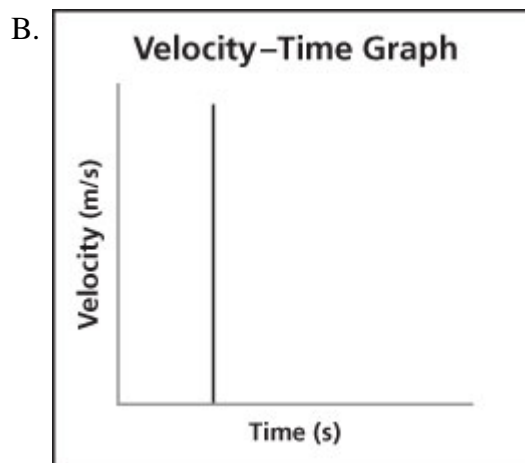
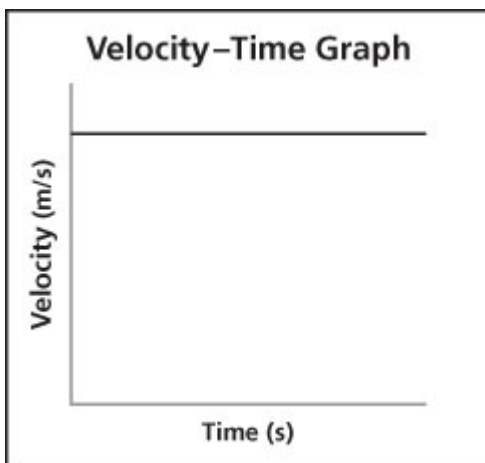
17. The products of the reaction of aqueous sodium iodide,  $\text{NaI}_{(\text{aq})}$ , and aqueous lead(II) nitrate,  $\text{Pb}(\text{NO}_3)_{2(\text{aq})}$ , are
- $\text{NaPb}_{(\text{s})} + \text{I}_2\text{NO}_{3(\text{aq})}$
  - $\text{Na}_{(\text{s})} + \text{I}_2\text{NO}_{3(\text{aq})}$
  - $\text{NaNO}_{3(\text{aq})} + \text{PbI}_{(\text{s})}$
  - $\text{NaNO}_{3(\text{aq})} + \text{PbI}_{2(\text{s})}$
18. The molar mass of aluminum hydroxide is
- 43.99 g/mol
  - 78.01 g/mol
  - 87.98 g/mol
  - 97.95 g/mol
19. In the balanced chemical equation,  $\text{Cu}_{(\text{s})} + 2\text{AgNO}_{3(\text{aq})} \rightarrow \text{Cu}(\text{NO}_3)_{2(\text{aq})} + 2\text{Ag}_{(\text{s})}$ , one mole of copper and two moles of silver nitrate will produce
- One mole of  $\text{Cu}(\text{NO}_3)_{2(\text{aq})}$ , and one mole of  $\text{Ag}_{(\text{s})}$
  - One mole of  $\text{Cu}(\text{NO}_3)_{2(\text{aq})}$  and two moles of  $\text{Ag}_{(\text{s})}$
  - Two moles of  $\text{Cu}(\text{NO}_3)_{2(\text{aq})}$  and one mole of  $\text{Ag}_{(\text{s})}$
  - Two moles of  $\text{Cu}(\text{NO}_3)_{2(\text{aq})}$  and two moles of  $\text{Ag}_{(\text{s})}$
20. Which describes an object with uniform motion?
- The object moves with constant speed along a straight path
  - The object moves with constant speed along a curved path
  - The object moves so that an imaginary line segment from the object to a reference point changes in length
  - The object moves so that an imaginary line from the object to a reference point changes direction
21. A tsunami, a great ocean wave, travels a distance of  $7.2 \times 10^6 \text{ m}$  in  $2.88 \times 10^4 \text{ s}$ . What is the average speed of the tsunami?
- $4.0 \times 10^1 \text{ m/s}$
  - $2.5 \times 10^2 \text{ m/s}$
  - $9.0 \times 10^2 \text{ m/s}$
  - $2.1 \times 10^3 \text{ m/s}$
22. Which of the following distance-time graphs most closely describes uniform motion?



23. A group of students considered the following statements about scalar quantities and vector quantities.
- I. A scalar quantity indicates how much and what direction
  - II. A scalar quantity indicates how much and no direction
  - III. A vector quantity indicates how much and direction
  - IV. A vector quantity indicates how much and no direction

Which of these statements is/are correct?

- a. I only
  - b. I and IV
  - c. II and III
  - d. IV only
24. Which velocity-time graph indicates positive acceleration?



25. The velocity of a falling object changed as is indicated by the following data. Based on the data in the table, what is the acceleration of the object as it falls?

<b>Time (s)</b>	0.0	2.0	4.0	6.0
<b>Velocity (m/s)</b>	0.00	19.6	39.2	58.9

- a.  $2.0 \text{ m/s}^2$  up
- b.  $9.8 \text{ m/s}^2$  down
- c.  $20 \text{ m/s}^2$  down
- d.  $59 \text{ m/s}^2$  up

26. Madison applied a force of 150 N in a horizontal direction to a sleigh. Meanwhile the sleigh slid 30.0 m across a level surface of snow. What is the work done on the sleigh by Madison?
- a.  $2.00 \times 10^{-1} \text{ J}$
  - b. 5.00 J
  - c.  $5.00 \times 10^1 \text{ J}$
  - d.  $4.50 \times 10^3 \text{ J}$
27. What is the gravitational potential energy of an object?
- a. Energy due to only the motion of an object
  - b. Potential energy stored in the nuclei of the object's atoms
  - c. Energy due only to the height of the object above the Earth's surface
  - d. Energy due to the motion and position of the object above the Earth's surface
28. Manuel placed his 1.42 kg science textbook on the shelf at the top of his locker. The shelf supported the textbook at a height of 1.78 m. At this height, what is the gravitational potential energy of the textbook?
- a. 1.26 J
  - b. 2.53 J
  - c. 12.4 J
  - d. 24.8 J
29. A car with a mass of 1800 kg is travelling at a speed of 16.0 m/s. What is the kinetic energy of the car?
- a.  $4.61 \times 10^5 \text{ J}$
  - b.  $5.76 \times 10^4 \text{ J}$
  - c.  $2.30 \times 10^5 \text{ J}$
  - d.  $2.88 \times 10^4 \text{ J}$
30. A rock having mass of 1.25 kg is dropped from the edge of a cliff to the surface of the water 35.0 m below. With what speed does the rock strike the surface of the water?
- a. 20.7 m/s
  - b. 26.2 m/s
  - c. 172 m/s
  - d. 442 m/s
- 31.
- 32.
33. A construction crane is used to lift a load of materials. The crane performs  $7.2 \times 10^3 \text{ J}$  of output work while its input energy is  $1.2 \times 10^4 \text{ J}$ . What is the percent efficiency of the crane?
- a. 16%
  - b. 60%
  - c. 66%
  - d. 167 %
34. The power of the eyepiece of a microscope is 10X and the power of the high-power lens is 120X. The total magnification of a specimen viewed through the high-power lens is
- a. 10X
  - b. 120X
  - c. 1000X
  - d. 1200X

d. transpiration pull caused by the evaporation of water from the leaves

35. Louis Pasteur performed an experiment to disprove the concept of spontaneous generation. In this experiment, Pasteur allowed dust to access one of the flasks, which resulted in the appearance of mould in that flask but not in the other. The growth of the mould is what type of variable?
- a. Controlled variable
  - b. Manipulated variable
  - c. Responding variable
  - d. Spontaneous variable
- 36.
- 37.
- 38.
39. Rod-like structures of the cell where cellular respiration occurs are called
- a. lysosomes
  - b. ribosomes
  - c. Golgi apparatus
  - d. mitochondria
40. The phospholipids bilayer is part of the
- a. chloroplasts
  - b. cell membrane
  - c. endoplasmic reticulum
  - d. Golgi apparatus
41. The direction in which water or solutes move through a cell membrane is determined by
- a. passive transport
  - b. rate of diffusion
  - c. carrier proteins
  - d. concentration gradient
42. An egg that has its shell dissolved in vinegar is then placed in a beaker of distilled water. Which of the following occurs?
- a. The egg swells
  - b. The egg shrinks
  - c. The egg loses mass
  - d. The egg does not change
43. As a cell decreases in size
- a. The surface area increases
  - b. The surface area to volume ratio increases
  - c. The volume of the cell increases
  - d. More molecules need to be transported across its surface
44. The part of the leaf containing the structures that allow carbon dioxide to enter the leaf is
- a. epidermis
  - b. spongy mesophyll
  - c. palisade tissue
  - d. vascular tissue
45. The loss of water through stomata and lenticels is known as
- a. osmosis
  - b. plasmolysis
  - c. transpiration
  - d. perspiration
46. The force that pulls water up from the roots through the xylem in the stem to the leaves is caused by
- a. gravity
  - b. turgor pressure
  - c. a pressure difference in the leaves
  - d. transpiration pull caused by the evaporation of water from the leaves

47.

48. Positive gravitropism is illustrated by

- a. A stem bending towards the light
- b. A stem growing against the force of gravity
- c. A root growing against the force of gravity
- d. A root growing in the direction of gravity

49. Which gases together make up 99% of Earth's atmosphere?

- a. Nitrogen, helium, hydrogen and carbon dioxide
- b. Carbon dioxide and oxygen
- c. Nitrogen and oxygen
- d. Helium and oxygen

50. Earth's lithosphere is best described as the

- a. envelope of the Earth that includes bodies of water and water vapour in the air
- b. layer of Earth that can support life
- c. layer of gases surrounding the Earth
- d. solid outer portion of the Earth

51. Some tropical plants can grow outside Vancouver, BC but are not able to grow outside in Edmonton, AB. Which factor would most likely account for this difference in plant survivability?

- a. Climate
- b. Altitude
- c. Weather
- d. Soil characteristics

52. Which gas in the atmosphere is the main contributor to the Greenhouse effect?

- a. carbon dioxide
- b. nitrous oxide
- c. water vapour
- d. methane

53. Which statement about the net radiation budget is correct?

- a. The outgoing radiation is due to the albedo of Earth's surface
- b. The total of Earth's incoming radiation is less than its outgoing radiation
- c. The total of Earth's incoming radiation and its outgoing radiation is closely balanced
- d. The outgoing radiation is radiation due to the albedo of Earth's surface and reflection from Earth's atmosphere

54.

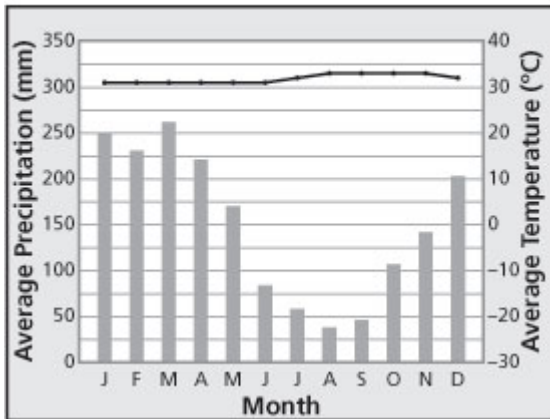
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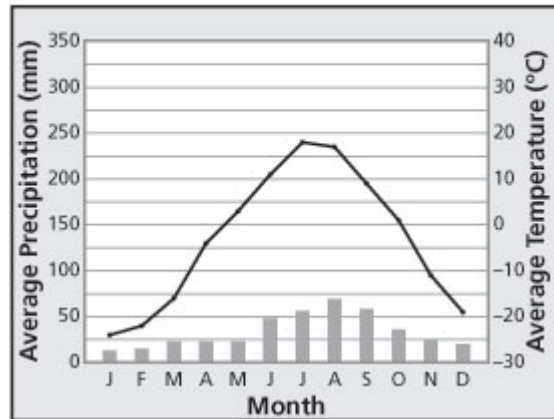
57. Which biome receives the least precipitation?
- taiga
  - tundra
  - grassland
  - rain forest

Use the following climatographs to answer question 58.

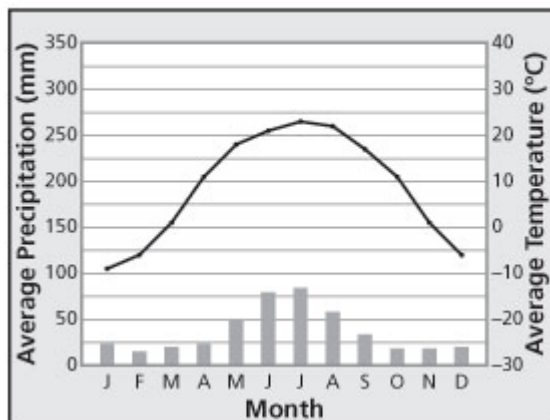
Climatograph I



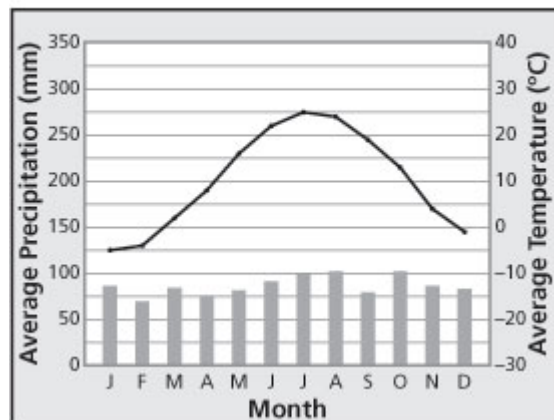
Climatograph II



Climatograph III



Climatograph IV



58. Which climatograph is most likely describing the climate of the deciduous forest biome?
- I
  - II
  - III
  - IV

59. What is a carbon sink?
- A hole or low place in land or rock
  - A process that removes carbon dioxide
  - The observed increase in Earth's temperature
  - The absorption of thermal energy by atmospheric gases

60.

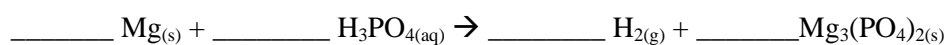


61.

62.

### Written Response

63. Balance the following equation and indicate the reaction type. Name the reactants and the products.



64. Calculate the molar mass of copper(II) chloride

65. List two things you could do to conserve energy in your daily life

66.

67.

68. In paragraph form explain why atmospheric carbon dioxide levels increased after the Industrial Revolution.