BRITISH COLUMBIA

Science 10

2004 Released Examination

Student Instructions

1. Ensure that in addition to this **Student Booklet**, you have a **Response Form** and a **Data Booklet**.
2. This examination is designed to be completed in **two hours**. *Students may, however, take up to 30 minutes of additional time to finish.*
3. **All** answers must be entered on the **Response Form** using a pencil. Answers entered in this **Student Booklet** will not be marked.
4. At the end of the examination, return this **Student Booklet**, the **Response Form** and the **Data Booklet** to the supervisor.
5. **Disqualification** from the examination will result if you bring books (including dictionaries), paper, notes, or unauthorized electronic devices into the examination room.

Suggested Time: 2 hours

INSTRUCTIONS: For each question, select the **best** answer and record your choice on the Response Form provided. Using a pencil, completely fill in the circle that has the letter corresponding to your answer.

You have **Student Booklet Form A**. In the box above #1 on your **Response Form**, fill in the bubble as follows:

Student Booklet	A	B	C	D
	●	Ⓑ	Ⓒ	Ⓓ

LIFE SCIENCE — Cells and Genetics

1. The nucleus of a cell controls cell function.

   A. True
   B. False

2. Molecules diffuse across cell membranes because of gravity.

   A. True
   B. False

Match each Term on the left with the best Descriptor on the right.
Each Descriptor may be used as often as necessary.
Reminder: Record your answers on the Response Form.

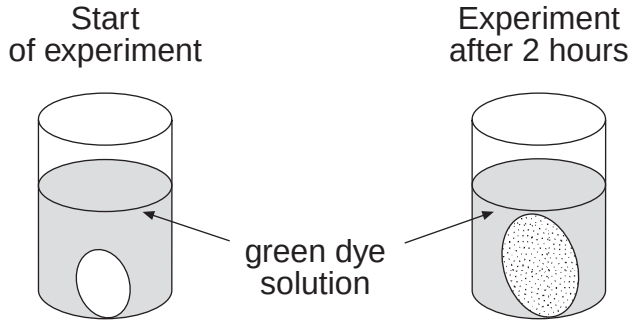
Term	Descriptor
3. cell membrane	A. causes movement of cells
4. mitochondria	B. related to osmosis in cells
	C. provides support for plant cells
	D. the site of the origin of spindle fibres
	E. sugar + oxygen → carbon dioxide + water + energy

Match each Term on the left with the best Descriptor on the right.
Each Descriptor may be used as often as necessary.
Reminder: Record your answers on the Response Form.

Term	Descriptor
5. chloroplast	A. causes movement of cells
6. centriole	B. related to osmosis in cells
	C. site of oxygen production
	D. the site of the origin of spindle fibres
	E. sugar + oxygen $\rightarrow$ carbon dioxide + water + energy

Use the following diagram to answer question 7.

The hard shell of an egg was dissolved with a mild acid leaving the cell membrane undamaged. An experiment was then performed on the egg, as shown below.



One drop of green dye was added to a beaker of water. An egg was placed in the green solution. After two hours the egg was larger and it became green.

7. Why did the egg become larger?

   A. Water left the egg by osmosis.
   B. Water entered the egg by osmosis.
   C. The green dye entered the egg by diffusion.
   D. Water left the egg by osmosis and the green dye entered the egg by diffusion.

8. Which of the following cellular structures is found in a leaf cell, but not in a muscle cell?

   A. nucleus
   B. chloroplast
   C. mitochondria
   D. cell membrane

9. Air plants such as orchids, often grow on tree branches with their roots exposed to the air. Which of the following processes would allow the roots to provide nutrients to the plant?

   A. osmosis
   B. diffusion
   C. interphase
   D. cytokinesis

10. Which of the following cellular structures is found in a brain cell, but not in an ivy leaf cell?

    A. centrioles
    B. chloroplast
    C. mitochondria
    D. cell membrane

11. Which of the following describes the surface area to volume ratio of a growing cell?

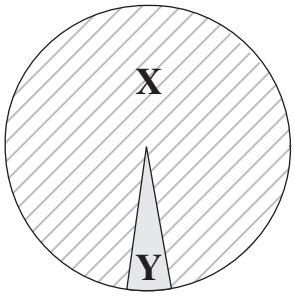
    A. increasing
    B. decreasing
    C. remaining the same
    D. increasing then decreasing

12. Which of the following can be infected by viruses?

I	bacteria
II	plant cells
III	animal cells

    A. I only
    B. I and II only
    C. II and III only
    D. I, II and III

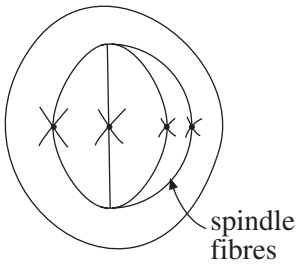
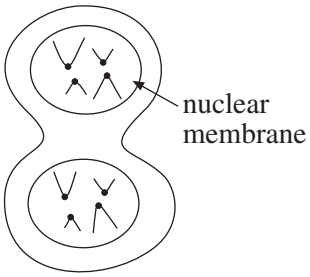
Use the following diagram showing the relative time taken for a cell's development to answer question 13.



13. Mitosis occurs in X.

    A. True
    B. False

Use the following diagrams of stages of mitosis to answer question 14.

Cell A	Cell B
	

14. Which of the following comparisons is correct?

    A. Both cells are at the same stage in mitosis.
    B. Cell A is further along in mitosis than Cell B.
    C. Cell B is further along in mitosis than Cell A.
    D. Cell A is the stage immediately following Cell B.

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15. Which one of the following statements is true?

    A. Sexual and asexual reproduction do not require any parents.
    B. Sexual and asexual reproduction require the same number of parents.
    C. Asexual reproduction requires more parents than sexual reproduction.
    D. Sexual reproduction requires more parents than asexual reproduction.

16. Which of the following are advantages of asexual reproduction?

I	two parents required
II	greater genetic variety
III	only one parent required
IV	larger numbers of offspring produced

A. I and II only
B. I and IV only
C. II and III only
D. III and IV only

17. What is the term given to an organism's genetic makeup?

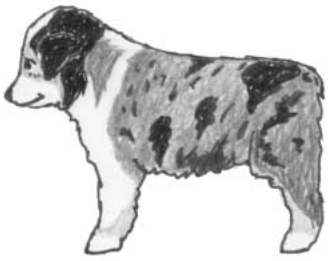
A. mutation
B. variation
C. genotype
D. phenotype

Use the following information to answer question 18.

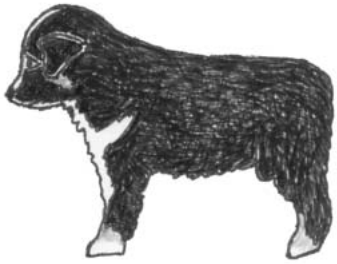
Australian Shepherd dogs

Australian Shepherd dogs have white coats, merled coats or tricolour coats. Homozygous dominant dogs are white and have serious eye disorders.

white (MM)
with serious eye disorders



merle (Mm)
with normal eyes



tricolour (mm)
with normal eyes

18. If a homozygous white is crossed to a heterozygous merle, what is the probability of the offspring being white and having serious eye disorders?

A. 0%
B. 25%
C. 50%
D. 75%

19. Having a widow's peak (P) is dominant and having a straight hairline (p) is recessive. If there is a 100% chance that a particular individual will have a widow's peak, which of the following are the genotypes of the parents?

A. pp x pp
B. Pp x Pp
C. PP x pp
D. Pp x pp

Use the following information to answer question 20.

In pea plants, when seeds are formed, the regular allele, R, is dominant over the wrinkled allele, r.

Regular Seed Appearance

Wrinkled Seed Appearance

20. Which of the following diagrams shows the results of a cross between a heterozygous regular seed plant and a homozygous wrinkled seed plant?

A.

	R	r
r		
r		

B.

	R	r
r		
r		

C.

	R	r
r		
r		

D.

	R	r
r		
r		

21. Which of the following is true of a dominant allele?

I	It will mask the recessive allele.
II	It is more likely to be passed onto the next generation than the recessive allele.
III	It will express the same phenotype when it appears in a homozygous or heterozygous condition.

A. I and II only
B. I and III only
C. II and III only
D. I, II and III

22. The hairy toe allele is dominant (H) and the smooth toe allele (h) is recessive. The genotype for a homozygous individual is Hh.

A. True
B. False

23. Which of the following describes phenotype?

I	TT
II	brown eyes
III	the genes for a particular trait
IV	the physical appearance of an organism

A. I and II only
B. I and IV only
C. II and III only
D. II and IV only

24. Which of the following crosses would result in only heterozygous offspring?

A. tt x tt
B. Tt x tt
C. Tt x Tt
D. TT x tt

25. What will produce a white flower with a red trim when a white flower is crossed with a red flower?

A. mutation
B. dominance
C. codominance
D. incomplete dominance

Use the following information to answer question 26.

I	$Hh \times Hh$
II	$Hh \times hh$
III	$HH \times Hh$
IV	$HH \times hh$

H = hairy toes

h = smooth toes

26. The hairy toe allele is dominant and the smooth toe allele is recessive. Which of the following crosses have equal chances of producing heterozygous hairy toed individuals?

A. I, II and III only
B. I, II and IV only
C. I, III and IV only
D. I, II, III and IV

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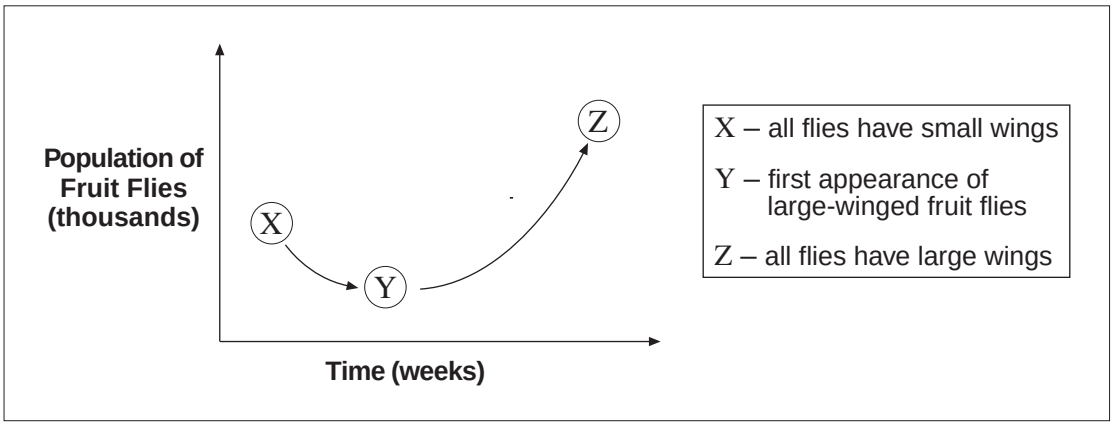
27. Mutation may be neutral for an organism.

A. True
B. False

Use the following graph of the effect of a mutation on a fruit fly population to answer question 28.



28. The mutation increasing the size of wings in fruit flies was positive for this fruit fly population.

    A. True
    B. False

PHYSICAL SCIENCE — Chemicals and Reactions

REFER TO DATA BOOKLET

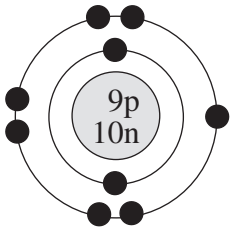
For this section of the examination, refer to:

- **Names, Formulæ and Charges of Some Common Ions on page 1**
- **the Alphabetical Listing of the Elements on page 2**
- **the Periodic Table of the Elements on page 3**

29. Which atom has 28 protons?

    A. nickel
    B. silicon
    C. fluorine
    D. chromium

30. Consider the following diagram.



This element has a mass number of 19.

A. True
B. False

31. Which atom will produce an ion with 33 protons, 42 neutrons and 36 electrons?

A. arsenic
B. krypton
C. rhenium
D. molybdenum

32. Which neutral atom has 6 neutrons and 6 electrons?

A. boron
B. carbon
C. helium
D. magnesium

Use the following information to answer question 33.

9 ? 4	? represents the symbol of the element

33. Which of the following describes a neutral atom of the element?

	Element	Sub-Atomic Particles
A.	Beryllium	9 electrons, 4 protons
B.	Beryllium	4 electrons, 5 neutrons
C.	Fluorine	4 electrons, 4 protons
D.	Fluorine	9 neutrons, 9 protons

Use the following information to answer question 34.

A new element Xn has recently been discovered. It forms compounds with the following formulae:

Xn_3PO_4, $XnCl_2$, $Xn(MnO_4)_2$

34. Xn has more than one ion charge (combining capacity).

A. This statement is supported by the information.
B. This statement is refuted by the information.
C. This statement is neither supported nor refuted by the information.

35. A neutral atom has the same number of protons as electrons.

A. True
B. False

36. How many electrons are in the outer shell of an argon atom?

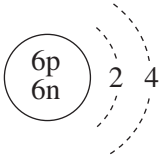
A. 1
B. 2
C. 7
D. 8

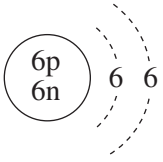
37. Which of the following statements about Cl^{-1} are true?

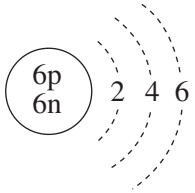
I	It symbolizes an ion.
II	It symbolizes an atom.
III	Chlorine has lost one electron.
IV	Chlorine has gained one electron.

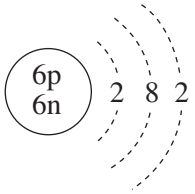
A. I and III only
B. I and IV only
C. II and III only
D. II and IV only

38. Which of the following represents the Bohr model for a carbon atom?

A.


B.


C.


D.


39. The formula S_8 represents a diatomic molecule.

A. True
B. False

40. The formula ClO_3^{-1} represents an ion.

A. True
B. False

41. Which of the following is the formula for the compound formed by potassium and phosphorus?

A. KP
B. K_2P
C. KP_3
D. K_3P

$(NH_4)_2SO_4$

For the chemical compound ammonium sulphate, match the Element on the left with the Number of Atoms on the right. Numbers of Atoms may be used as often as necessary. Reminder: Record your answers on the Response Form.

Element	Number of Atoms
42. hydrogen	A. 1
43. oxygen	B. 2
	C. 4
	D. 8

44. The formula $MgCl_2$ represents an ionic compound.

A. True
B. False

45. Which of the following is the formula for the compound formed by calcium and bromine?

A. $CaBr$
B. Ca_2Br
C. $CaBr_2$
D. Ca_2Br_2

46. Which one of the following chemical equations is balanced?

A. $2Al + O_2 \rightarrow Al_2O_3$
B. $3Al + O_3 \rightarrow Al_2O_3$
C. $3Al + 3O_2 \rightarrow Al_2O_3$
D. $4Al + 3O_2 \rightarrow 2Al_2O_3$

47. Which of the following equations are balanced?

I	$2Ca + O_2 \rightarrow 2CaO$
II	$2CO + O_2 \rightarrow 2CO_2$
III	$H_2 + Cl_2 \rightarrow 2HCl$

A. I and II only
B. I and III only
C. II and III only
D. I, II and III

48. In what type of chemical reaction does an element take the place of one of the elements in a compound?

A. synthesis
B. neutralization
C. decomposition
D. single replacement

49. Which of the following represents a decomposition reaction?

A. $S + O_2 \rightarrow SO_2$
B. $2Fe_2O_3 \rightarrow 4Fe + 3O_2$
C. $FeS + 2HCl \rightarrow FeCl_2 + H_2S$
D. $2Al + Fe_2O_3 \rightarrow Al_2O_3 + 2Fe$

Match each Chemical Reaction on the left with the best Name of the Reaction on the right.
Each Name of the Reaction may be used as often as necessary.
Reminder: Record your answers on the Response Form.

Chemical Reaction	Name of the Reaction
50. $4K + O_2 \rightarrow 2K_2O$	A. synthesis
51. $BaS + 2HBr \rightarrow BaBr_2 + H_2S$	B. neutralization
	C. decomposition
	D. single replacement
	E. double replacement

Use the following information to answer question 52.

$$H_2SO_4 + 2NaOH \rightarrow Na_2SO_4 + 2H_20$$

52. Which of the following statements are true?

I	H_2SO_4 is an acid.
II	Na_2SO_4 is a base.
III	This is a neutralization reaction.
IV	The products of this reaction are a salt and water.

A. I, II and III only
B. I, II and IV only
C. I, III and IV only
D. II, III and IV only

REFER TO DATA BOOKLET	**For this section of the examination, refer to:** • **Units and Abbreviations on page 4** • **Formulæ on page 4** • **The Electromagnetic Spectrum on page 6**

53. Neutral objects are attracted to positive charges, but are repelled by negative charges.

    A. True
    B. False

Use the following information to answer questions 54 and 55.

> A student walks across a thick carpet wearing socks on her feet. The air in the room is dry. As she reaches for a doorknob, she immediately experiences an electric shock in her hand. On a wet day she does not get a shock.

54. The condition of air in the room probably contributed to the shock.

    A. This statement is supported by the information.
    B. This statement is refuted by the information.
    C. This statement is neither supported nor refuted by the information.

55. The speed she was walking affected the shock.

    A. This statement is supported by the information.
    B. This statement is refuted by the information.
    C. This statement is neither supported nor refuted by the information.

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56. A parallel circuit has only one conducting pathway for the current.

    A. True
    B. False

57. Which of the following describes static electricity?

A. stationary atoms
B. movement of atoms
C. movement of charged particles
D. an excess of charge on an object

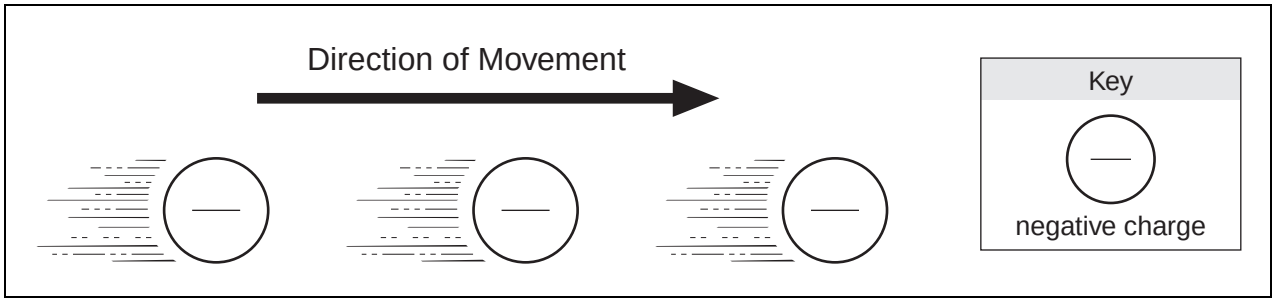
58. Which of the following is the best electrical insulator?

A. iron
B. dry air
C. copper
D. salt water

59. A battery of two cells connected in parallel has less voltage than a battery of the same two cells connected in series.

A. True
B. False

Use the following diagram to answer question 60.



60. The diagram illustrates static electricity.

A. True
B. False

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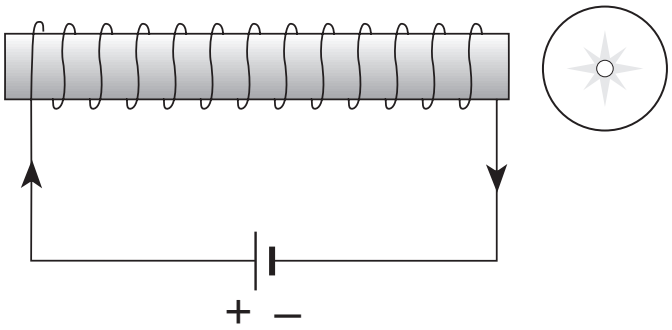
61. Increasing the current through a solenoid will increase the strength of the magnetic field.

A. True
B. False

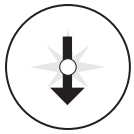
Use the following circuit diagram to answer question 62.



62. Which direction will the needle point if a compass is placed beside the coil as shown?

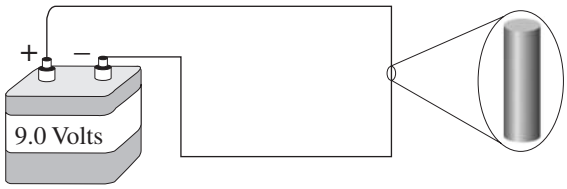
A. 

B. 

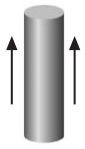
C. 

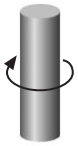
D. 

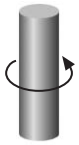
Use the following diagram of a simple circuit to answer question 63.

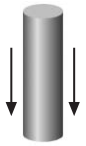


63. What is the direction of the magnetic field at the point indicated on the diagram?

A. 

B. 

C. 

D. 

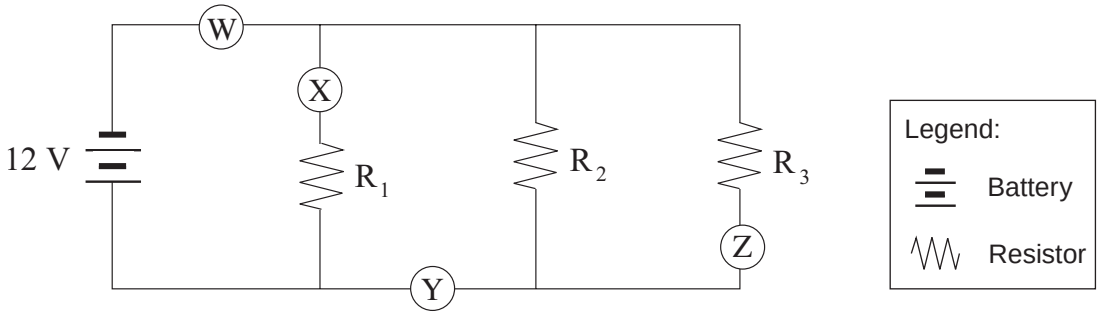
64. Which of the following is an advantage of connecting cells in series?

A. The voltage will stay the same.
B. Cells in series take up less space.
C. The voltage in the circuit will be increased.
D. If one cell fails, the current will not change.

65. If a voltmeter and an ammeter are used in a simple circuit, which of the following can be calculated using only the two meter readings?

A. time
B. charge
C. energy
D. resistance

Use the following diagram to answer question 66.



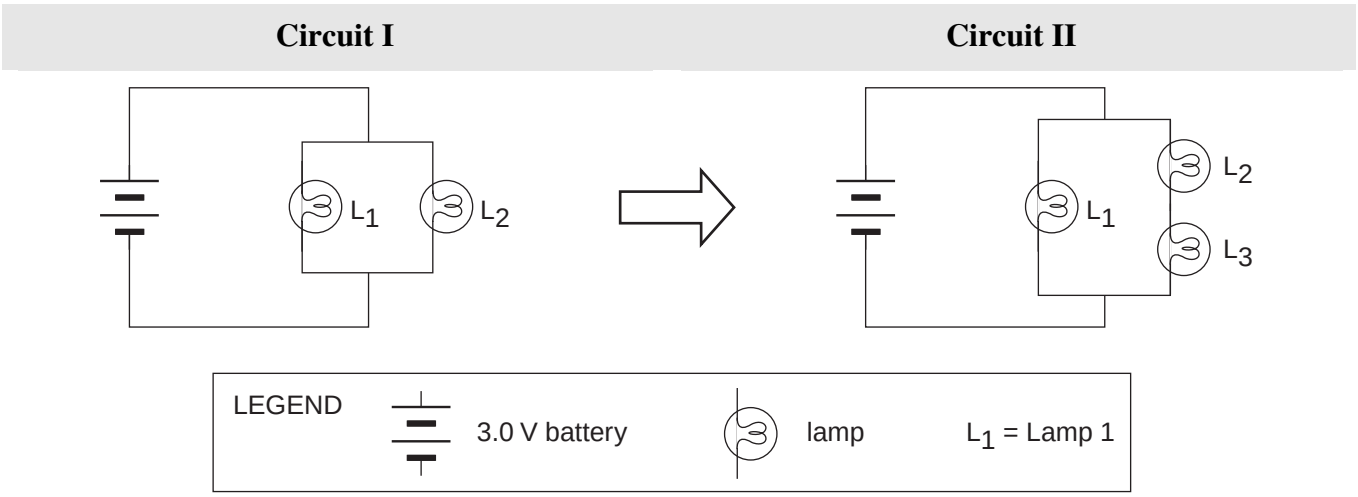
66. At what position should an ammeter be placed to measure the current passing through resistor R_1?

A. W
B. X
C. Y
D. Z

67. Which of the following explains why some flashlight batteries are connected in series?

A. To create a brighter light
B. To evenly distribute the voltage
C. To extend the life of the batteries
D. To protect the bulb from power surges

Use the following circuit diagrams to answer question 68.



68. What will happen to Lamp 1 if Circuit I is changed to Circuit II?

A. Lamp 1 will go out.
B. Lamp 1 will become dimmer.
C. Lamp 1 will become brighter.
D. Lamp 1 will stay the same brightness.

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69. Which of the following is **not** a symbol for a unit of energy?

A. J
B. kJ
C. W
D. kW·h

70. Which of the following is the best estimate of the energy used by a 250 W light bulb that is used to light a yard 12 hours per night for a month?

A. 1 kW·h
B. 10 kW·h
C. 100 kW·h
D. 1000 kW·h

71. Which electrical appliance uses the most energy in 10 minutes of operation?

A. stove
B. stereo
C. computer
D. television

72. What will happen to the current flowing through a table lamp if its 50 W light bulb is replaced with a 100 W light bulb?

A. The current becomes a quarter as much.
B. The current becomes half as much.
C. The current does not change.
D. The current becomes twice as much.

73. A 240 V appliance draws 20 A of current. How much electrical energy does the appliance consume in 2.0 hours?

A. 4 800 J
B. 9 600 J
C. 576 000 J
D. 34 560 000 J

74. A circuit breaker trips to disconnect a circuit. Which of the following should be done first?

A. remove the circuit breaker
B. determine why the breaker tripped
C. replace the circuit breaker with a fuse
D. replace the circuit breaker with a new one

75. Which of the following best describes how a fuse protects electrical devices?

A. A portion of the fuse melts.
B. The fuse bends when heated.
C. The fuse expands when heated.
D. An electromagnet opens the circuit.

76. A step-up transformer is used at a power generating station before transmitting electricity over long distances.

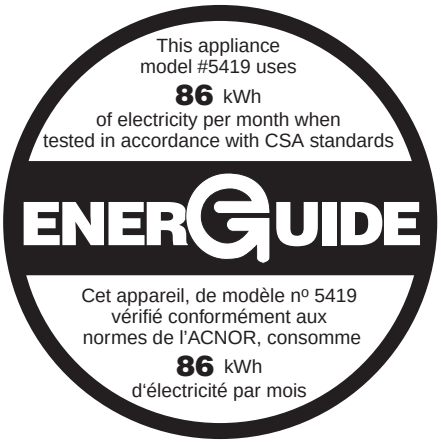
A. True
B. False

77. A toy train operates on 12 V. If the train is powered by household current, which of the following devices makes this possible?

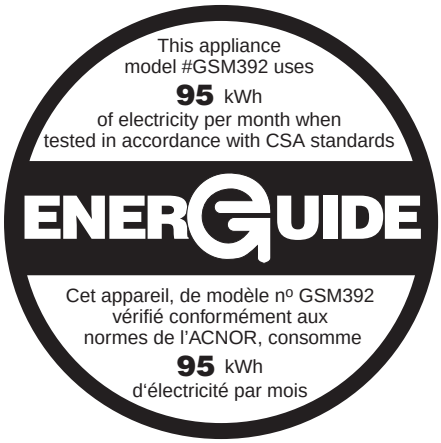
A. a fuse
B. a voltmeter
C. a step-up transformer
D. a step-down transformer

78. Which of the Energuide labels below indicates the highest cost of operation?

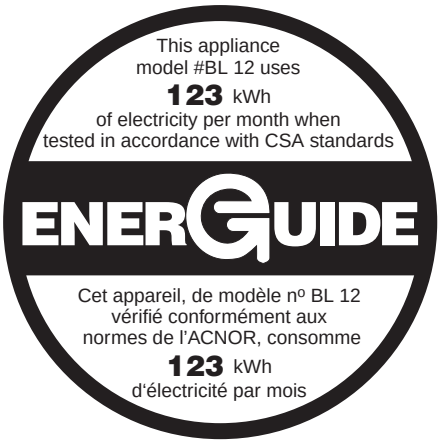
A.



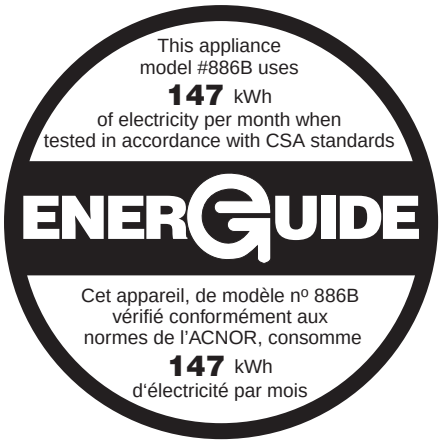
B.



C.



D.



79. If the heat drying cycle of a dishwasher is used, the operating cost is increased. Which of the following best explains this?

A. heat loss is reduced
B. drying time is increased
C. more energy is necessary
D. less hot water is necessary

80. How does a modern high-efficiency 18 W light bulb save energy when compared to an older incandescent 60 W light bulb?

A. The 18 W light bulb draws less current.
B. The 18 W light bulb has less resistance.
C. The 18 W light bulb produces less light.
D. The 18 W light bulb operates at a lower voltage.

PHYSICAL SCIENCE — Radioactivity

REFER TO DATA BOOKLET

For this section of the examination, refer to:

- **the Periodic Table of the Elements on page 3**
- **The Electromagnetic Spectrum on page 6**
- **the Common Isotope Pairs Chart on page 6**

81. Visible light has a longer wavelength than television signals.

A. True
B. False

82. In alpha (α) decay, a nucleus loses 2 protons and 2 neutrons.

A. True
B. False

83. Consider the following nuclear equation.

$$^{7}_{4}\text{Be} + {}^{0}_{-1}\text{e} \rightarrow {}^{7}_{3}\text{Li}$$

The equation shows beryllium undergoing beta decay.

A. True
B. False

84. Which of the following describes the changes that take place in the nucleus of an atom as a result of beta (β) decay?

	number of protons	number of neutrons
A.	decrease by 1	increase by 1
B.	no change	no change
C.	increase by 1	decrease by 1
D.	increase by 2	decrease by 2

85. Which of the following uses or produces nuclear energy?

I	the sun
II	some power plants
III	combustion of methane gas
IV	some new energy-efficient cars

A. I and II only
B. I and III only
C. II and IV only
D. III and IV only

86. Strontium-85 has a half-life of 84 days. How much of a 40 µg sample of Sr-85 will be left after 252 days?

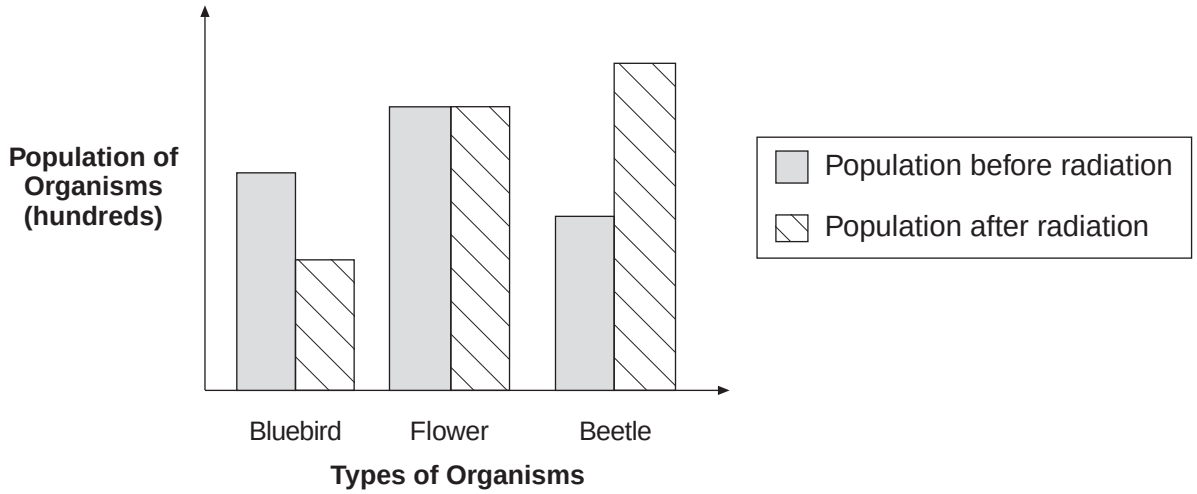
A. 5 µg
B. 10 µg
C. 13.3 µg
D. 20 µg

87. Which of the following are an example of the uses of electromagnetic radiation?

A. paint thinners
B. air conditioners
C. pencil sharpeners
D. microwave ovens

Use the following graph to answer question 88.

The graph below shows populations of different organisms before and after they have been exposed to higher than normal levels of ultraviolet radiation.

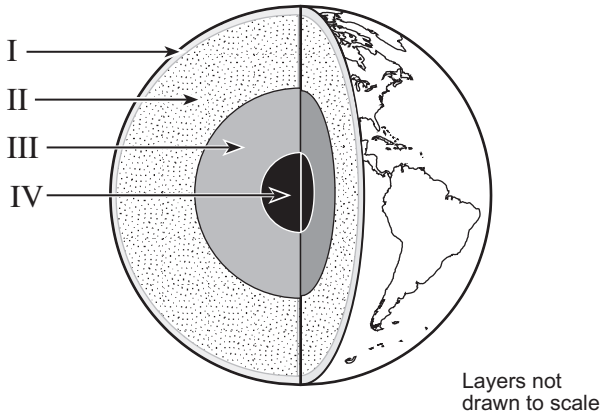


88. The radiation had a negative effect on the beetle population.

A. This statement is supported by the graph.
B. This statement is refuted by the graph.
C. This statement is neither supported nor refuted by the graph.

REFER TO DATA BOOKLET	**For this section of the examination, refer to:** • **the Geological Time Scale on page 5** • **the Common Isotope Pairs Chart on page 6** • **the Tectonic Plate Boundaries Map on page 7** • **the Map of the Pacific Coast of North America on page 8**

Use the cross-sectional diagram of the Earth's layers to answer questions 89 and 90.



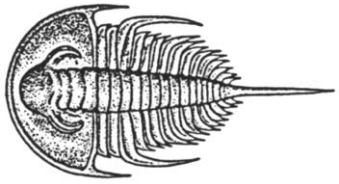
Match each Layer on the left with the best Number from the Diagram on the right.
Reminder: Record your answers on the Response Form.

Layer	Number from Diagram
89. mantle	A. I
90. outer core	B. II
	C. III
	D. IV

91. Surface drilling to identify different layers underground is an application of remote sensing.

A. True
B. False

92. The picture shows a trilobite fossil.



A. True
B. False

Match each Item on the left with the best Era on the right.
Each Era may be used as often as necessary.
Reminder: Record your answers on the Response Form.

Item	Era
93. formation of the Burgess shale 94. oldest mammal fossil	A. Cenozoic B. Mesozoic C. Paleozoic D. Precambrian

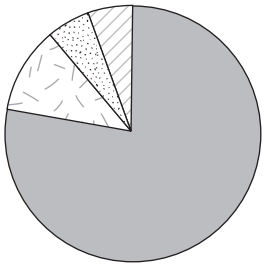
95. Which of the following layers will primary seismic waves (p waves) penetrate?

I	crust
II	mantle
III	outer core
IV	inner core

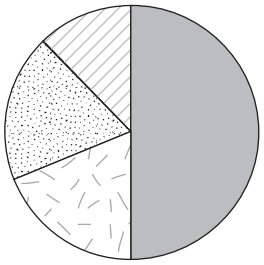
A. I only
B. I and II only
C. I, II and III only
D. I, II, III and IV

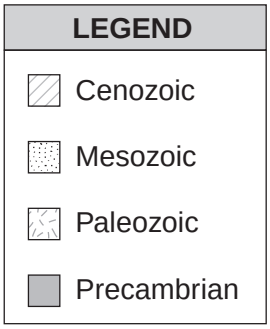
96. Which of the following diagrams best models the relative lengths of the eras of the Geological Time Scale?

A.

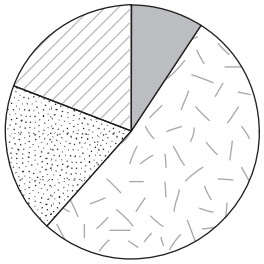


B.

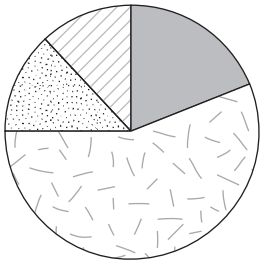




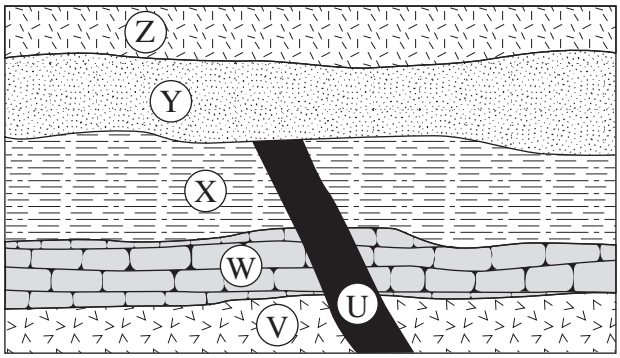
C.



D.



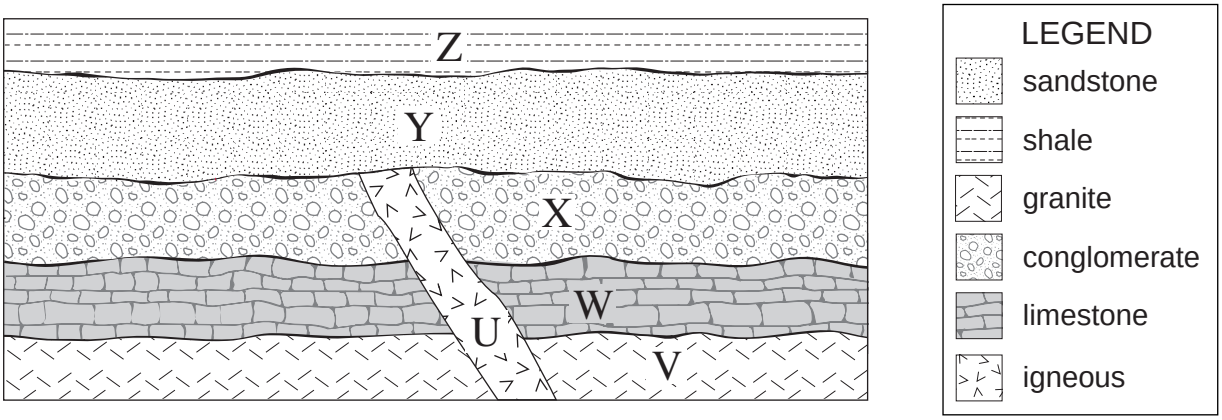
Use the following diagram to answer question 97.



97. The statement "Formation **Y** is younger than formation **X**" is an application of the cross-cutting rule.

A. True
B. False

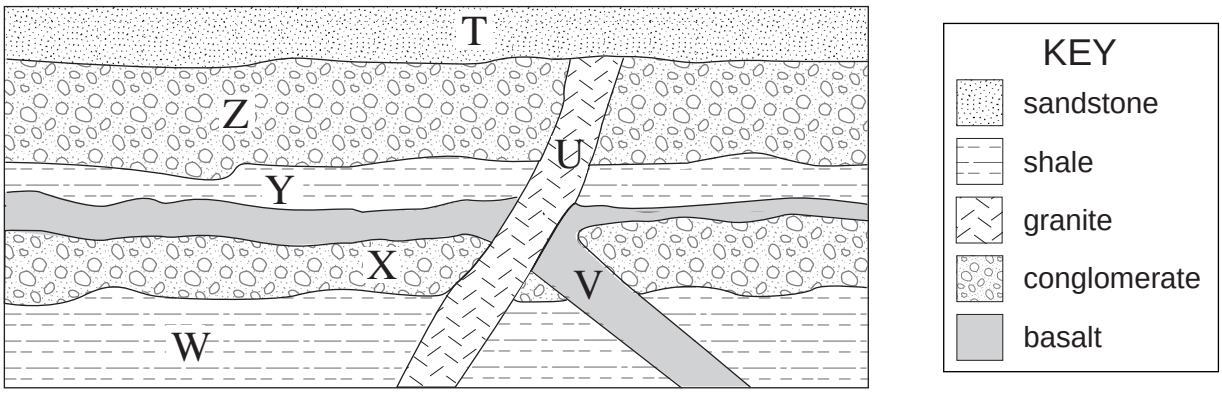
Use the following geological cross-section to answer question 98.



98. What is the sequence of the four oldest features from oldest to youngest?

	oldest →			youngest
A.	V	W	X	U
B.	W	X	Y	Z
C.	Z	Y	U	X
D.	X	U	Y	Z

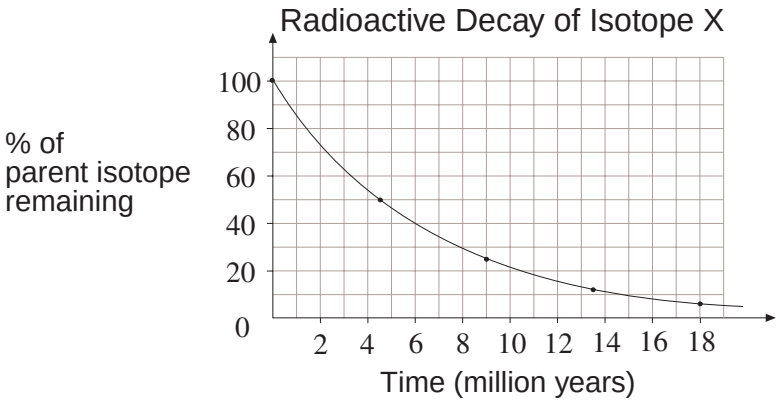
Use the following geological cross-section to answer question 99.



99. Which of the following best describes when the event labelled U occurred?

A. after T
B. before V
C. before Z
D. after Z

Use the following graph to answer question 100.



100. If 30% of the parent isotope remains, how old is the sample?

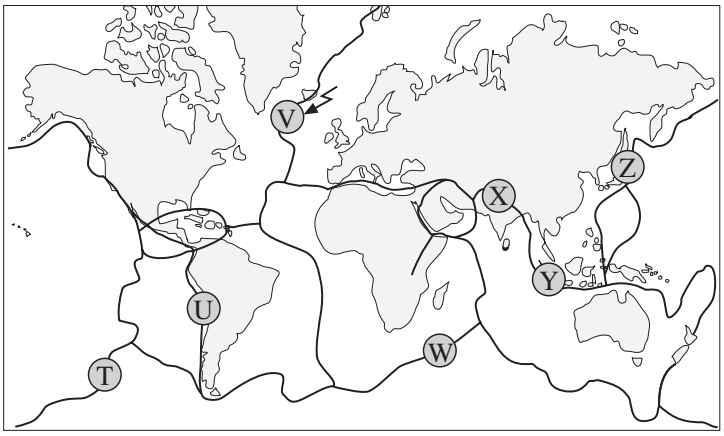
A. 2 million years
B. 4.5 million years
C. 8 million years
D. 10 million years

---

101. A rock sample contains 8 g of a radioactive isotope. If the half-life is twenty years, how much of the decay product would be produced in eighty years?

A. 4.0 g
B. 7.5 g
C. 7.75 g
D. 7.875 g

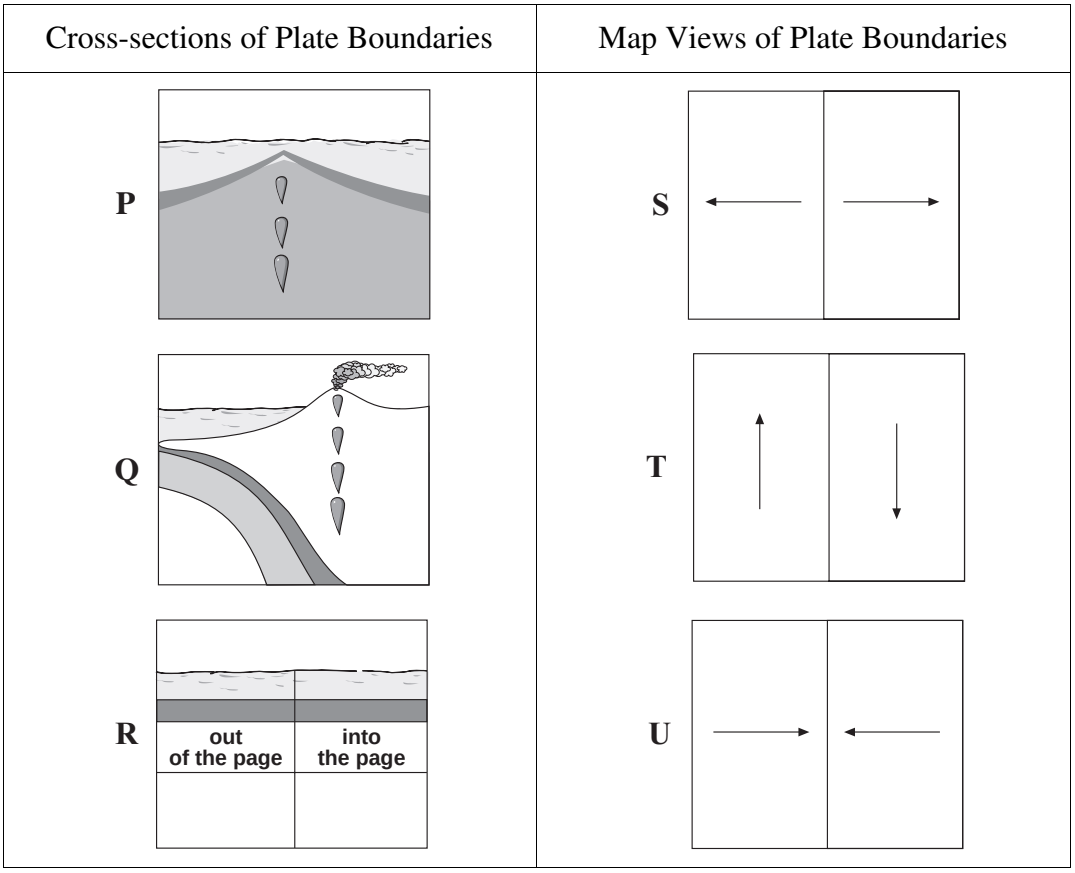
Use the following map to answer question 102.



102. The plate boundary located at V is a transform plate boundary.

A. True
B. False

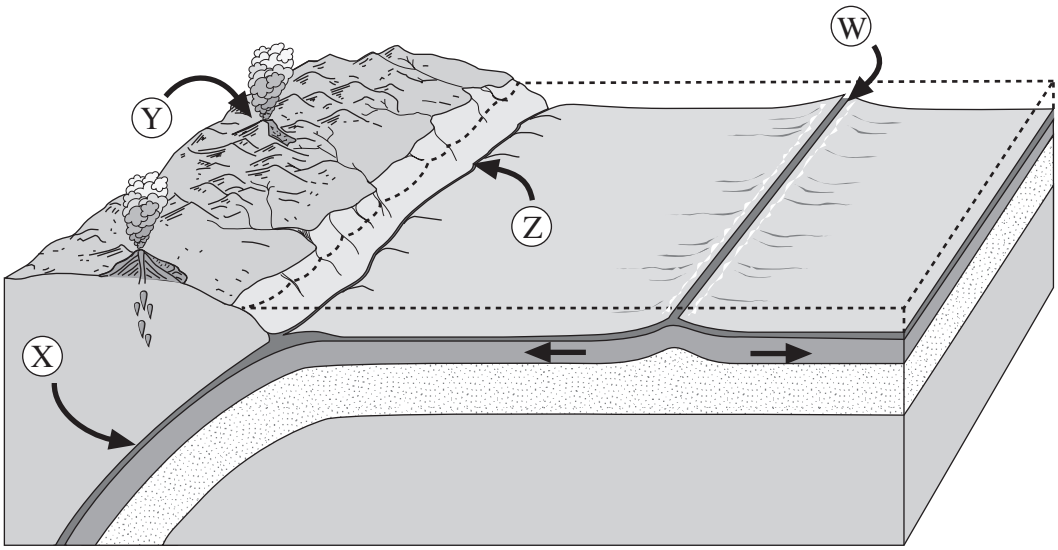
Use the following diagram to answer question 103.



103. Which of the cross-sections and map views illustrate a **divergent** plate boundary?

A. Q and S
B. R and U
C. P and S
D. R and T

Use the following diagram of a cross-section of plate boundaries to answer question 104.



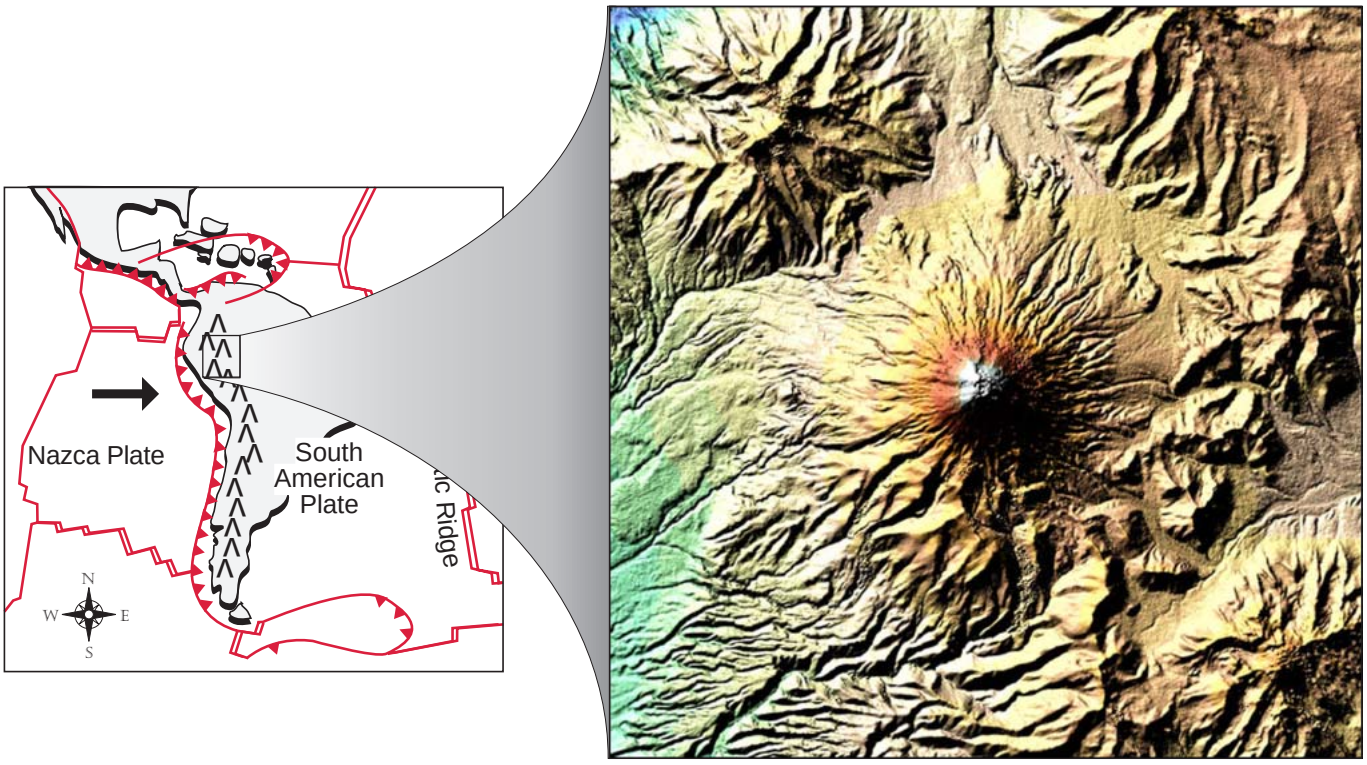
104. What type of plate boundary is Z?

A. diverging
B. transform
C. spreading
D. converging

105. Which of the following is caused by a **convergent** plate boundary along the Pacific Coast of North America?

A. Gorda Ridge
B. Cascade volcanoes
C. Juan de Fuca Ridge
D. Stikine volcanic belt

Use the following map and image of the volcano Cotopaxi in Ecuador to answer questions 106 and 107.



© NASA

106. Which of the following resulted in the volcanic activity at the location?

A. oceanic hot spot
B. convergent subduction zone
C. divergent oceanic-oceanic ridge
D. transform continental-continental fault

107. There have been 50 eruptions of this volcano since 1738. What hazards could harm people living on the slopes of the volcano?

A. ashfalls and lava flows only
B. mudslides and earthquakes only
C. lava flows, mudslides and earthquakes only
D. ashfalls, lava flows, mudslides and earthquakes

108. Which of the following events led scientists to a renewed interest in the theory of continental drift?

A. mapping the ocean floor
B. the Anchorage, Alaska earthquake of 1964
C. determining the highest mountain on Earth
D. the discovery of 225 million-year-old fossils

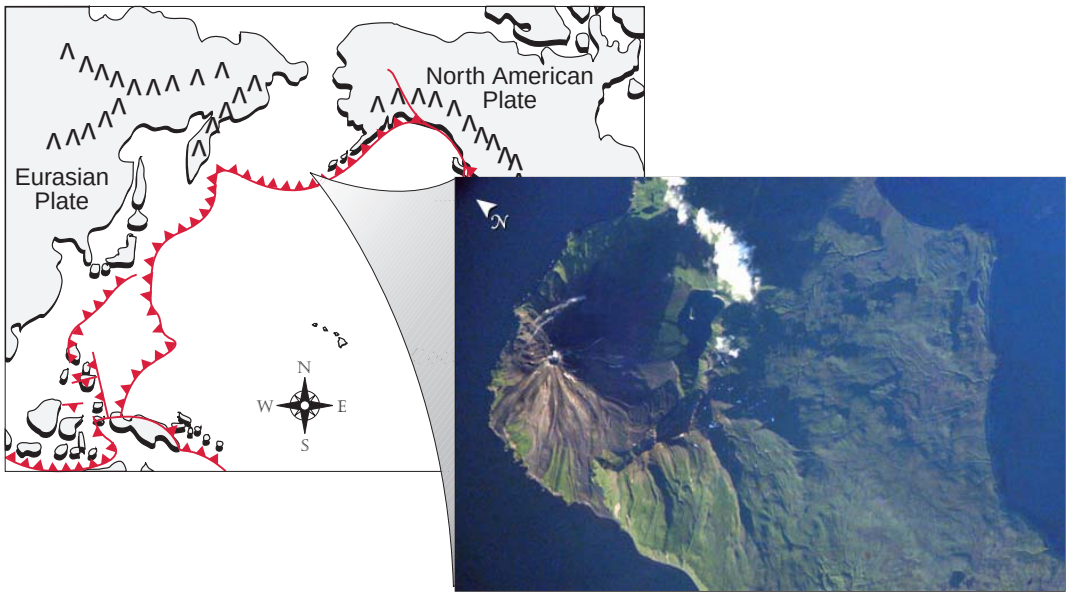
109. Which of the following provided evidence for diverging plate boundaries?

A. the location of ocean trenches
B. magnetic reversal patterns in oceanic crust
C. the temperature of ocean water across the Atlantic
D. hot spots located in the middle of an oceanic plate

110. Which of the following **always** occurs when a volcano erupts?

A. landslides
B. lava flows
C. earthquakes
D. volcanic ash

Use the following map and photograph of Kananga Volcano, Alaska, to answer questions 111 and 112.



© NASA

111. What type of plate boundary is indicated at the location above?

A. oceanic-oceanic divergent
B. oceanic-oceanic convergent
C. oceanic-continental transform
D. oceanic-continental convergent

112. What technique was used to produce the image next to the location map?

A. seismology
B. volcanology
C. remote sensing
D. geological field work

You have **Student Booklet Form A**. In the box near the top of page 2 of your **Response Form**, fill in the bubble as follows:

Student Booklet	A	B	C	D
	●	Ⓑ	Ⓒ	Ⓓ

END OF EXAMINATION