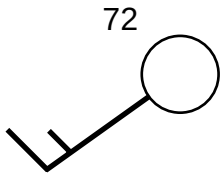
Sample Answer Paper for Parts B and C
Part B

47–48

49



50 _____

51 _____

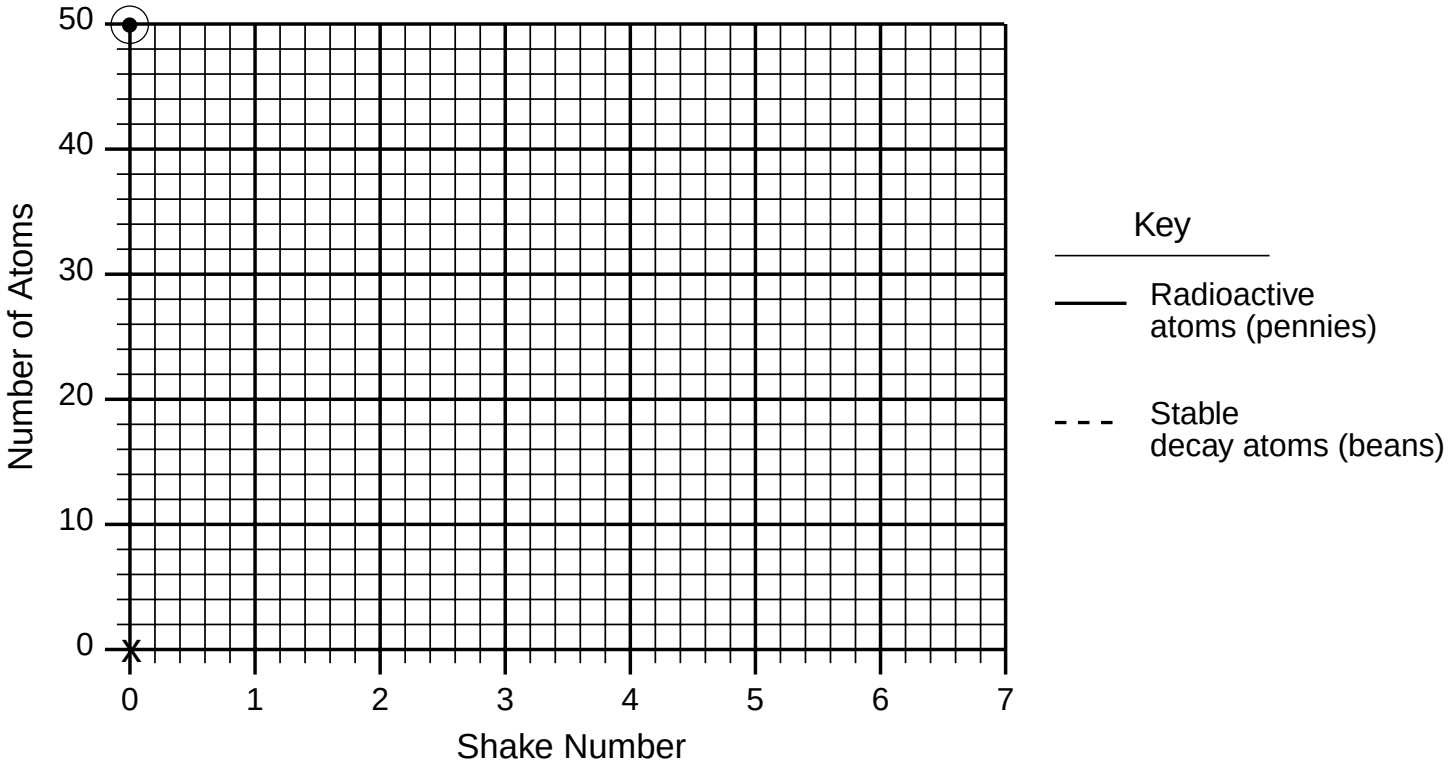
_____

_____

52 _____ and _____

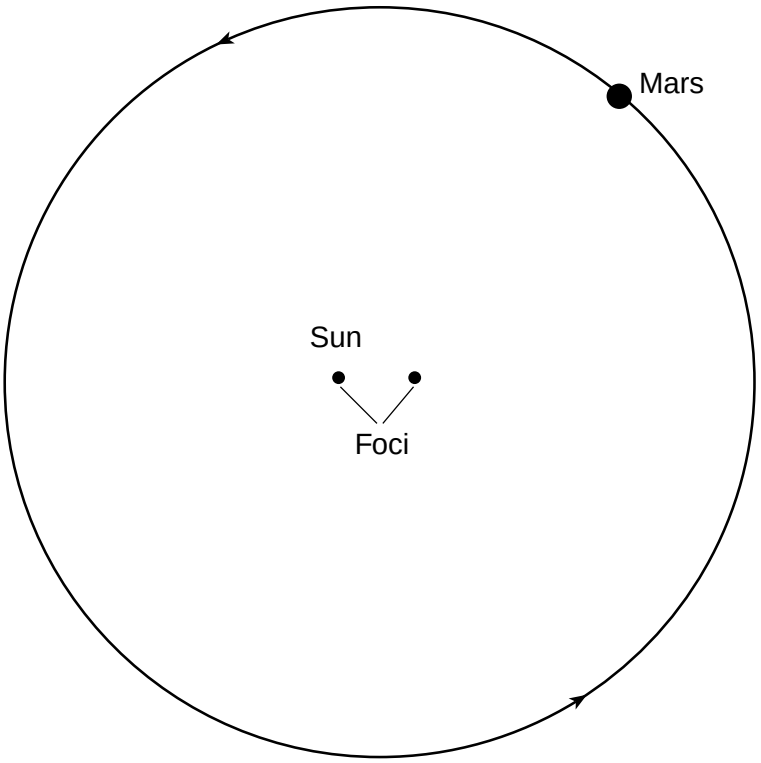
53 _____

54



55 _____ **years**

56



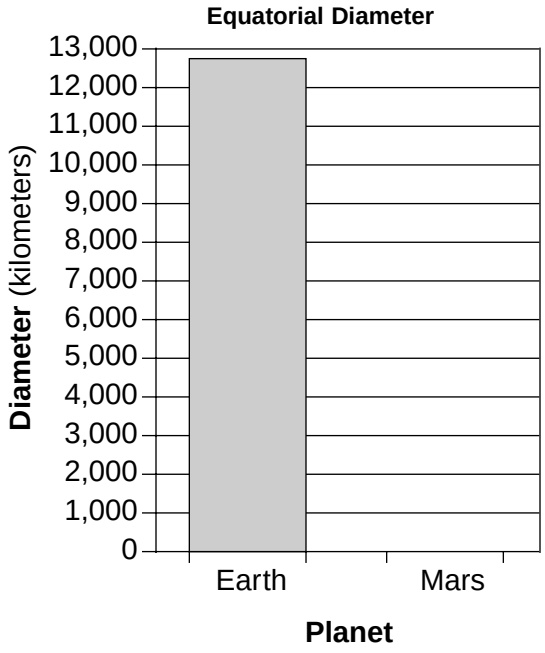
(Not drawn to scale)

57

_____

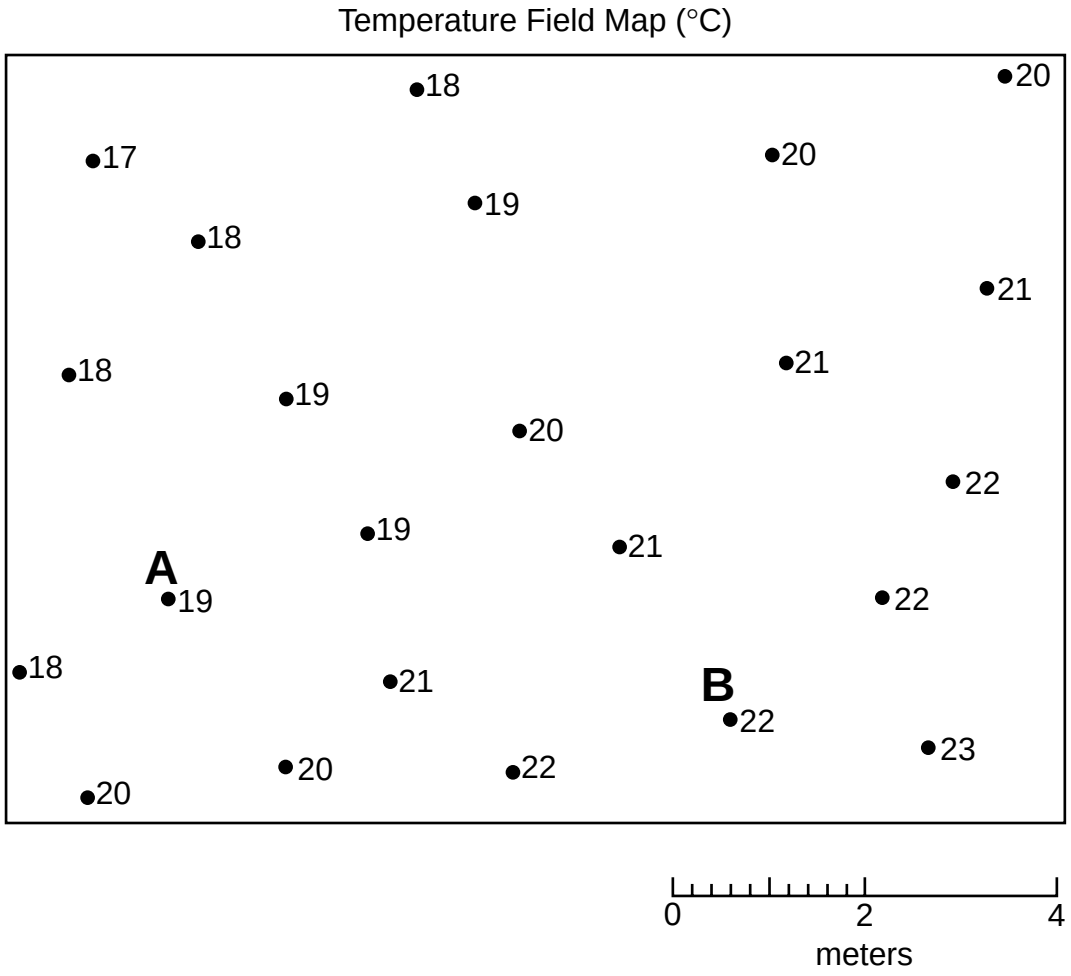
_____

58



Part C

59



60

a
b
c

61 _____ ^{o}F

62 _____

_____

63 _____

64 _____

_____

65 _____

_____

66 _____ Period

67 _____

_____

68 _____

_____

_____

_____

_____

_____

69 _____

70 _____

_____

71 _____

_____

Sample Scoring Materials for Parts A, B, and C

Scoring Key for Multiple-Choice Questions in Parts A and B

Part A

(1) 3	(10) 3	(19) 2	(28) 1
(2) 2	(11) 4	(20) 4	(29) 4
(3) 1	(12) 3	(21) 1	(30) 3
(4) 3	(13) 1	(22) 3	(31) 3
(5) 1	(14) 2	(23) 3	(32) 4
(6) 2	(15) 4	(24) 2	(33) 2
(7) 4	(16) 1	(25) 1	(34) 4
(8) 1	(17) 4	(26) 3	(35) 1
(9) 1	(18) 2	(27) 2	

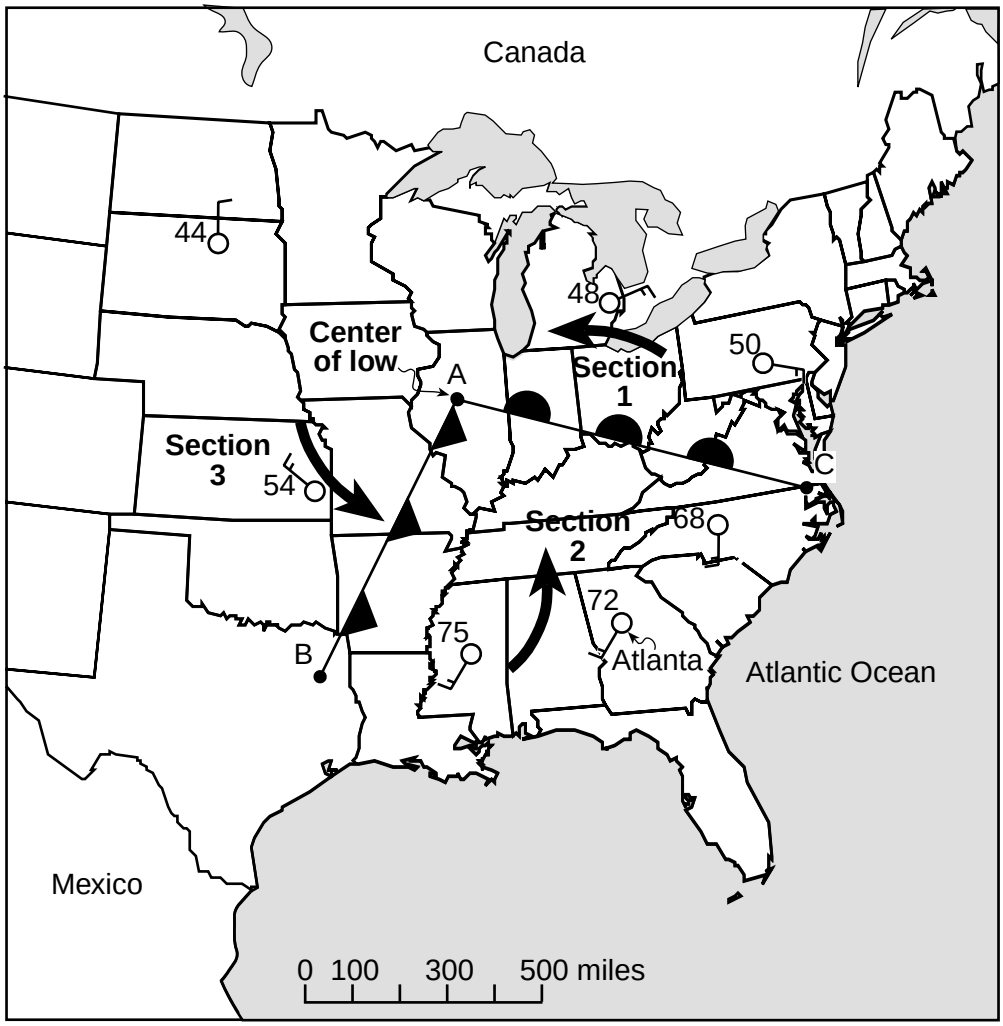
Part B

(36) 2	(40) 3	(44) 1
(37) 4	(41) 4	(45) 1
(38) 1	(42) 2	(46) 2
(39) 1	(43) 3	

Scoring Guide for Constructed-Response Questions in Parts B and C

Part B

47–48



47 [2] Allow 1 credit if both the warm front and cold front symbols are drawn on the correct lines.

and

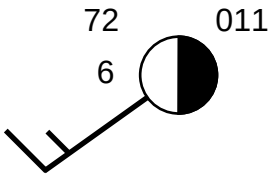
Allow 1 credit for placement of both student symbols on the correct side of the lines.

48 [2] Allow 1 credit for drawing one arrow in each section showing counterclockwise movement around the low-pressure system.

and

Allow 1 credit for showing the arrows curved toward the center of the low.

49 [2]



Allow 2 credits if all three weather measurements are placed correctly.

Allow only 1 credit if only one or two weather measurements are placed correctly. Credit may be allowed if the left half is shaded instead of the right half. (Do *not* accept 6 miles, 100.1, 1001.1, or 01.1.)

50 [1] Allow 1 credit for **barometer**.

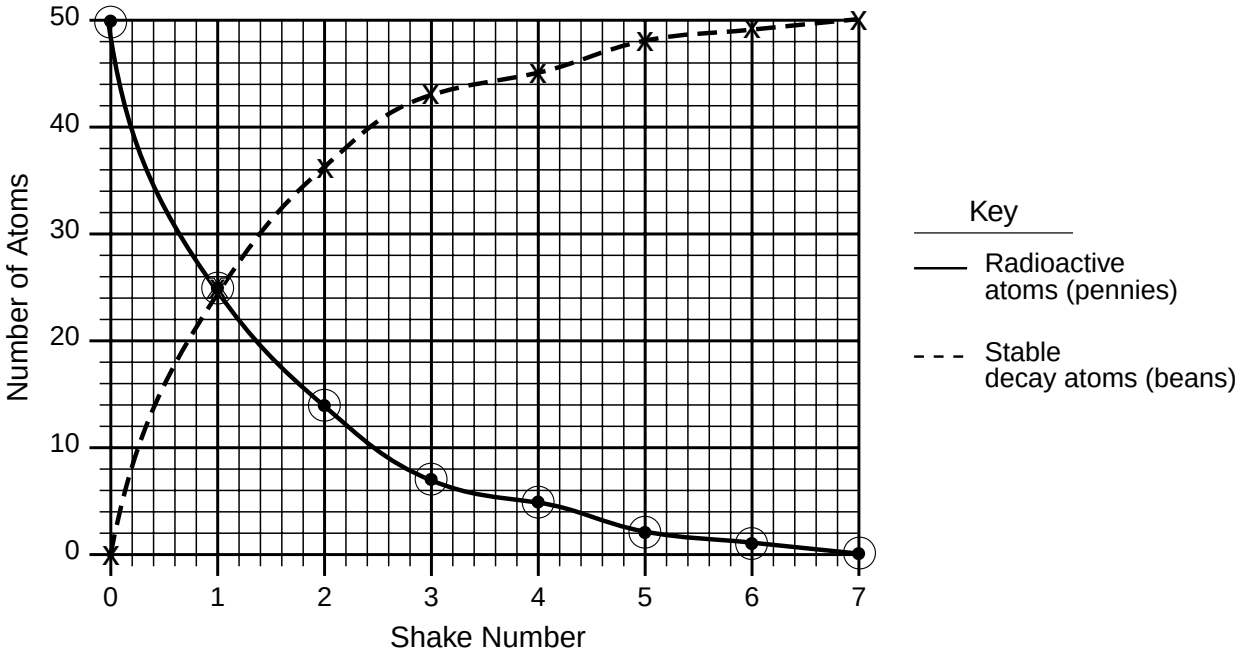
51 [1] Allow 1 credit for a scientifically correct explanation.

Examples: Any smaller-opening screen placed higher would trap particles out of sequence.
Not all particle sizes would be separated.

52 [1] Allow 1 credit for **compaction** (or **burial**) and **cementation.**

53 [1] Allow 1 credit for **sandstone**. (Do *not* allow credit for sand.)

54 [4]

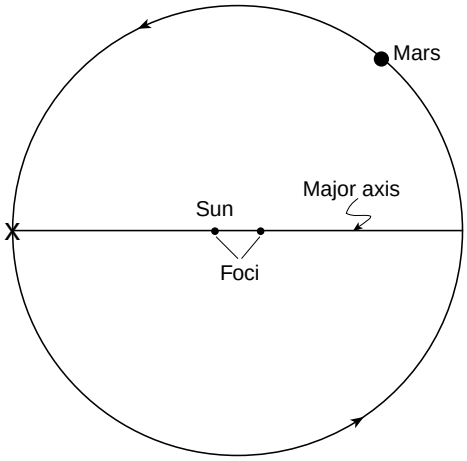


a Allow 1 credit if at least five of the student s points are plotted correctly. (– 1 atom)
b Allow 1 credit for drawing a solid line connecting the student s points.
c Allow 1 credit if at least five of the student s **X** s are placed correctly. (– 1 atom)
d Allow 1 credit for drawing a dashed line connecting the student s **X** s.

(In *a* and *c*, the credit may be allowed even if the student uses the wrong symbol for a correctly positioned ⊙ or **X**.)

55 [1] Allow 1 credit for **100** years. (– 20 years)

56 [2]



(Not drawn to scale)

a Allow 1 credit for a correctly drawn and labeled major axis.

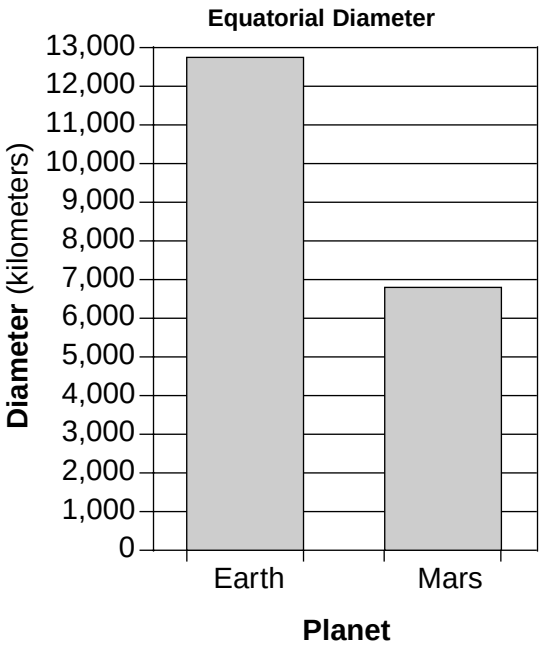
b Allow 1 credit for the correct placement of the **X**.

57 [1] Allow 1 credit for a scientifically correct explanation.

Examples: Earth s orbit is more circular than Mars orbit.
Mars has a more eccentric orbit.

(Do *not* accept explanations that refer only to size.)

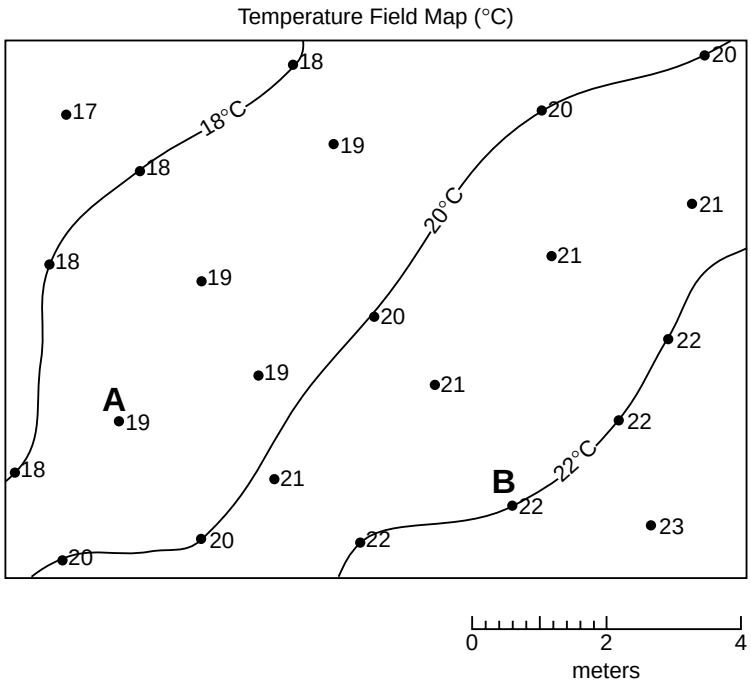
58 [1]



Allow 1 credit for a bar between 6,600 and 6,900 km.

Part C

59 [3]



Allow 2 credits if all three required isotherms are drawn correctly.

Allow only 1 credit if only one or two of the required isotherms are drawn correctly.

(Do *not* allow credit for an isotherm that does not extend to the boundary of the map.)

and

Allow 1 credit if all three required isotherms are labeled correctly.

60 [4] *a* Allow 1 credit for correctly recording the equation. (The student must give the answer in the form of an equation, which must include gradient = or g = .)

Examples: gradient = $\frac{\text{change in field value}}{\text{distance}}$

$g = \frac{\Delta t}{d}$

b Allow 1 credit for substituting both acceptable measurements into the equation given in *a*. (The student need *not* record the units.)

Example: gradient = $\frac{3C^o}{6\ m}$ *or* g = $\frac{22^oC-19^oC}{6\ m}$

(The distance value may be within –0.1m of 6m.)

c Allow 1 credit for correctly calculating the gradient *based on the student s answer in b*.

and

Allow 1 credit for recording the proper units *based on the student s answer in b*.

Examples: 0.5 C¡/m*or* .5 C¡/m *or* 1/2 C^o/m
(Credit may be allowed for the notation ¡C/m.)

61 [1] Allow 1 credit for **66¡**F (– 1¡).

62 [1] Allow 1 credit for a scientifically correct reason.

Examples: Prevailing winds carry pollutants toward the northeast.
The northeast is near the source.

63 [1] Allow 1 credit for a scientifically correct answer.

Examples: Limestone
Marble
(Any rock that contains the mineral calcite)

64 [1] Allow 1 credit for a scientifically correct description.

Examples: Limit the amount of gases emitted by factories and vehicles.
Restrict the use of fossil fuels.

65 [1] Allow 1 credit for a scientifically correct explanation.

Examples: Natural events also produce sulfur dioxide and nitrogen oxides.
Volcanic eruptions and forest fires lead to acid deposition.

66 [1] Allow 1 credit for **Cretaceous** Period.

67 [1] Allow 1 credit for a scientifically correct explanation.

Examples: The basalt is older than 92 million years.
Fossils are not normally found in igneous rock.

68 [3] Allow 1 credit for each of *three* appropriate actions.

Examples:
- ¥ Develop and practice a family disaster plan.
- ¥ Take a basic first aid, CPR, or fire safety course.
- ¥ Accumulate an emergency supply of food, water, and medications.
- ¥ Obtain an emergency radio.
- ¥ Locate gas, water, and electrical shutoffs.
- ¥ Plan an evacuation route.
- ¥ Place hazardous materials in secure locations.
- ¥ Contact local agencies for information.
- ¥ Develop plans for farm animals or pets.
- ¥ List emergency telephone numbers and post them prominently.
- ¥ Learn the locations of emergency shelters and medical care facilities.

69 [1] Allow 1 credit for a scientifically correct answer.

Examples: flooding
wind damage

70 [1] Allow 1 credit for a scientifically correct reason.

Examples: The hurricane lost its source of energy.
Gilbert moved over land.

71 [1] Allow 1 credit for a scientifically correct reason.

Examples: The approaching rainfall will damage the sand castle.
Tides and waves will wash away the sand.

Performance Test (Part D) Description

The performance component of the Physical Setting/Earth Science Regents examination currently consists of tasks set up at six stations as described below. The time allowed for completing the tasks at each station is 6 minutes.

Station 1 . . . *Identification*
Using a mineral identification kit and key, the student will determine the characteristics of two mineral samples and identify each sample by name.

Station 2 . . . *Classification*
Using rock identification charts, the student will classify two rock samples as igneous, sedimentary, or metamorphic and state a reason for each classification.

Station 3 . . . *Angular Measurement*
Using a plastic hemisphere that models the apparent path of the Sun, an external protractor, a ruler, and masking tape, the student will locate the position of the Sun at a given time and measure the distance between that position and a fixed point.

Station 4 . . . *Mass-Density*
Using a decigram balance, a mineral density chart, and a calculator, the student will find the density, determine the mass, and calculate the volume of a given mineral sample.

Station 5 . . . *Settling Time*
Using a column of fluid, three sizes of plastic particles of the same density, a stopwatch, and a calculator, the student will determine the average settling time for each of the three sizes of particles.

Station 6 . . . *Graphing*
Using data obtained from Station 5, the student will construct a line graph of average settling time versus particle diameter and will determine the settling time for another given particle diameter.

Note: Students should be familiar with the skills being assessed. However, they should *not* practice the entire test or any of the individual stations before this performance component is administered. Scores on the performance component should be reported to the principal *before* students take the written components.