

PHYSICAL SETTING EARTH SCIENCE

Thursday, June 18, 2026 — 1:15 to 4:15 p.m., only

The possession or use of any communications device is strictly prohibited when taking this examination. If you have or use any communications device, no matter how briefly, your examination will be invalidated and no score will be calculated for you.

Use your knowledge of Earth science to answer all questions in this examination. Before you begin this examination, you must be provided with the *2011 Edition Reference Tables for Physical Setting/Earth Science*. You will need these reference tables to answer some of the questions.

You are to answer all questions in all parts of this examination. You may use scrap paper to work out the answers to the questions, but be sure to record your answers on your answer sheet and in your answer booklet. A separate answer sheet for Part A and Part B–1 has been provided to you. Follow the instructions from the proctor for completing the student information on your answer sheet. Record your answers to the Part A and Part B–1 multiple-choice questions on this separate answer sheet. Record your answers for the questions in Part B–2 and Part C in your separate answer booklet. Be sure to fill in the heading on the front of your answer booklet.

All answers in your answer booklet should be written in pen, except for graphs and drawings, which should be done in pencil.

When you have completed the examination, you must sign the declaration printed on your separate answer sheet, indicating that you had no unlawful knowledge of the questions or answers prior to the examination and that you have neither given nor received assistance in answering any of the questions during the examination. Your answer sheet and answer booklet cannot be accepted if you fail to sign this declaration.

Notice ...

A four-function or scientific calculator and a copy of the *2011 Edition Reference Tables for Physical Setting/Earth Science* must be available for you to use while taking this examination.

DO NOT OPEN THIS EXAMINATION BOOKLET UNTIL THE SIGNAL IS GIVEN.

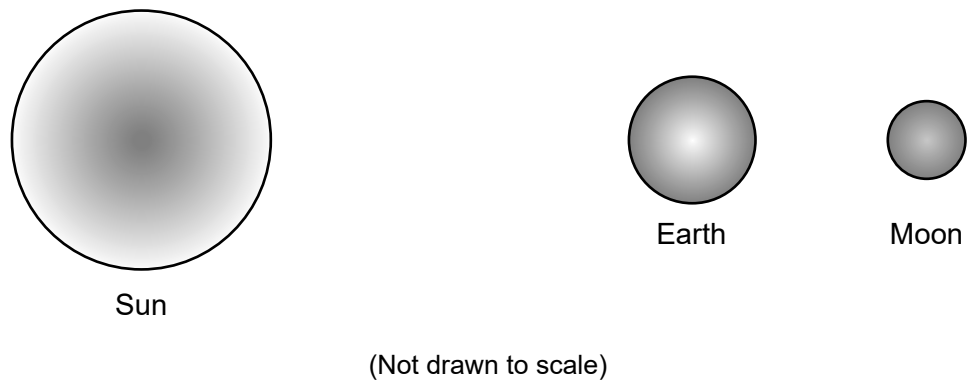
Part A

Answer all questions in this part.

Directions (1–35): For *each* statement or question, choose the word or expression that, of those given, best completes the statement or answers the question. Some questions may require the use of the *2011 Edition Reference Tables for Physical Setting/Earth Science*. Record your answers on your separate answer sheet.

- | | |
|--|---|
| <p>1 By which process do stars convert lighter elements into heavier elements releasing great amounts of energy?</p> <p>(1) conduction (3) radioactive decay
(2) gravitational pull (4) nuclear fusion</p> <p>2 As our solar system was forming, gravity and density differences caused all the planets to become</p> <p>(1) layered with the most dense materials in the core
(2) layered with the least dense materials in the core
(3) gaseous with the most dense gases in the core
(4) gaseous with the least dense gases in the core</p> <p>3 Compared to terrestrial planets, Jovian planets</p> <p>(1) are less massive
(2) are lower in density
(3) have a shorter period of revolution
(4) have a slower rate of rotation</p> <p>4 Planetary winds and ocean currents in the Southern Hemisphere are deflected to the left due to</p> <p>(1) Earth's elliptical orbit
(2) Earth's tilted axis
(3) the Coriolis effect
(4) the Doppler effect</p> <p>5 During which month does the Sun appear to rise the farthest south of due east for an observer in New York State?</p> <p>(1) January (3) July
(2) June (4) December</p> | <p>6 Approximately what percentage of Earth's surface is covered by the hydrosphere?</p> <p>(1) 33% (3) 70%
(2) 50% (4) 94%</p> <p>7 At what rate does Earth revolve around the Sun?</p> <p>(1) 1°/hour (3) 24°/day
(2) 12°/month (4) 360°/year</p> <p>8 What is the approximate latitude and longitude of Buffalo, New York?</p> <p>(1) 42°50' N, 78°50' W
(2) 42°50' N, 79°10' W
(3) 43°10' N, 78°50' W
(4) 43°10' N, 79°50' W</p> <p>9 Which sorted sediment sample will most likely have the greatest permeability?</p> <p>(1) clay (3) sand
(2) silt (4) pebbles</p> <p>10 Clouds form in rising moist air because the air is</p> <p>(1) contracting and cooling to the dew point
(2) contracting and warming to the dew point
(3) expanding and cooling to the dew point
(4) expanding and warming to the dew point</p> <p>11 What is the dew point of a parcel of air when the air has a dry-bulb temperature of 14°C and a wet-bulb temperature of 4°C?</p> <p>(1) 6°C (3) –10°C
(2) 8°C (4) –17°C</p> |
|--|---|

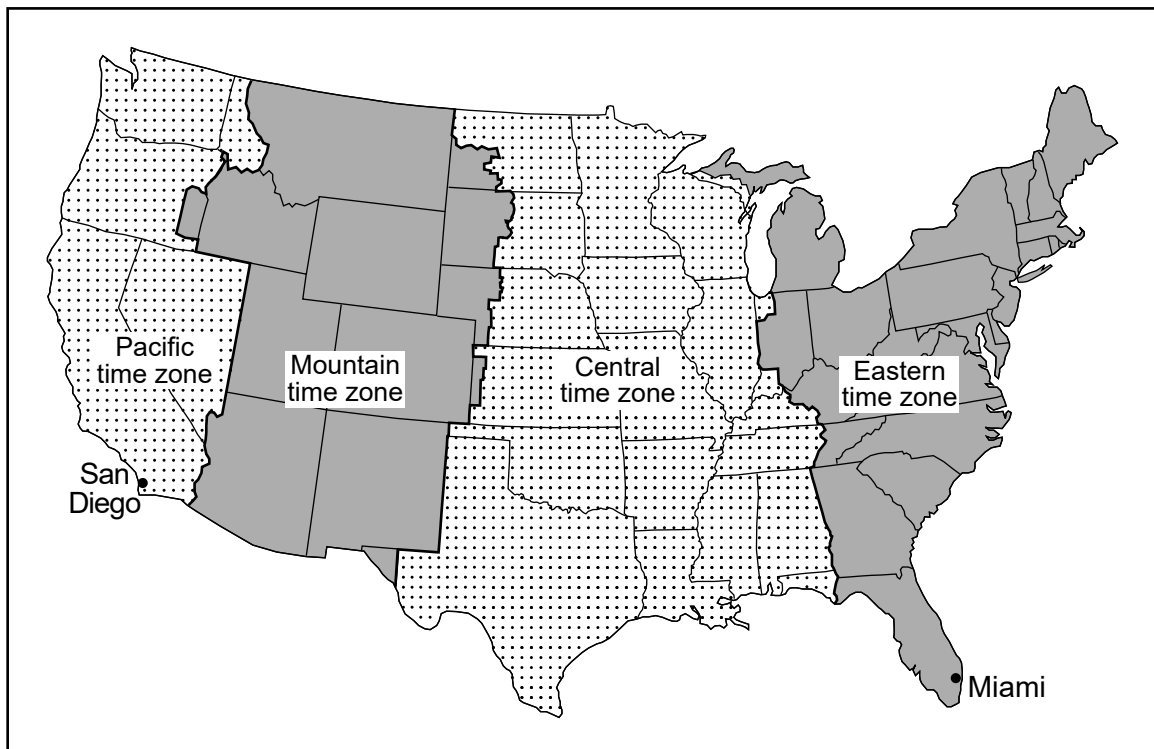
- 12 The diagram below represents the relative positions of the Sun, Earth, and Moon during an eclipse which is visible to an observer on Earth.



The Sun, Earth, and Moon are in the positions shown when a

- (1) lunar eclipse occurs as Earth's shadow is cast on the Moon
- (2) lunar eclipse occurs as the Moon's shadow is cast on Earth
- (3) solar eclipse occurs as Earth's shadow is cast on the Moon
- (4) solar eclipse occurs as the Moon's shadow is cast on Earth

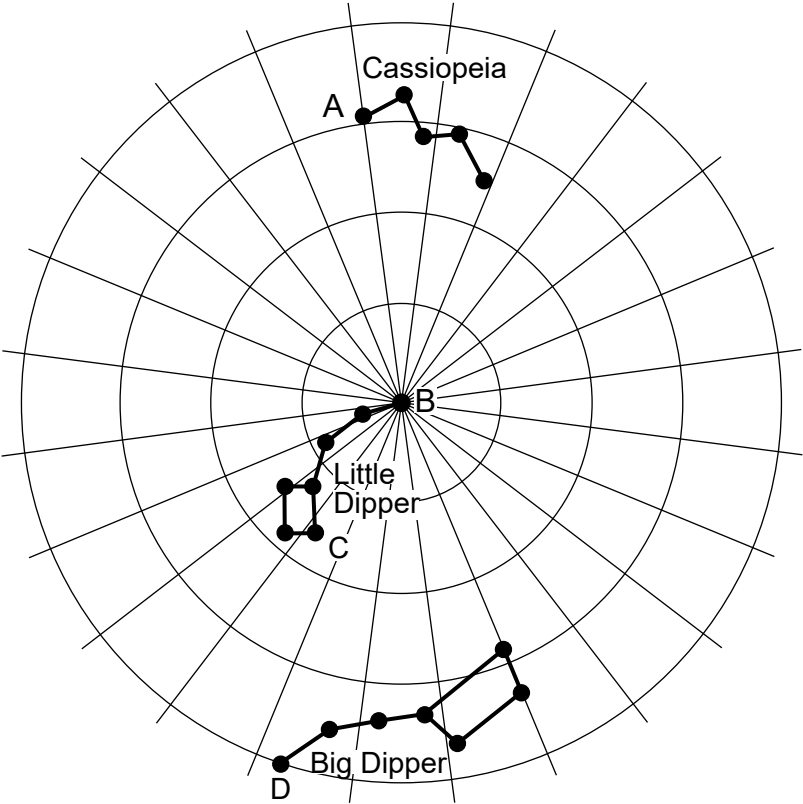
- 13 The map below shows four major time zones of the United States. The locations of Miami and San Diego are indicated.



If the time in Miami is 3:00 p.m., the time in San Diego will be

- (1) 3 hours earlier because Earth rotates from west to east
- (2) 4 hours earlier because Earth rotates from east to west
- (3) 3 hours later because Earth rotates from west to east
- (4) 4 hours later because Earth rotates from east to west

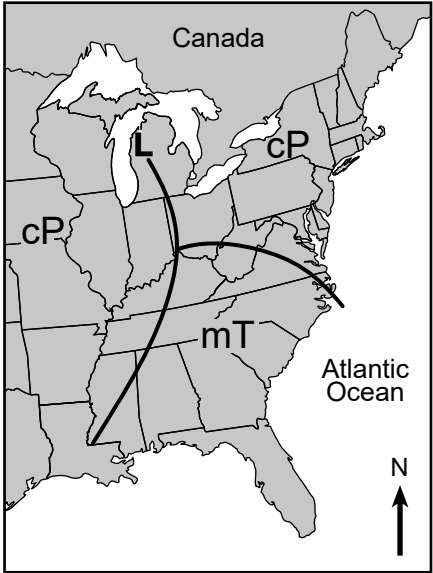
14 The star chart below shows the approximate locations of the Big Dipper, the Little Dipper, and Cassiopeia visible above Syracuse, New York, at a particular time of night. During the night, these stars appear to move counterclockwise around the star in the center of the chart. The dots represent individual stars. Some of the stars are labeled *A*, *B*, *C*, and *D*.



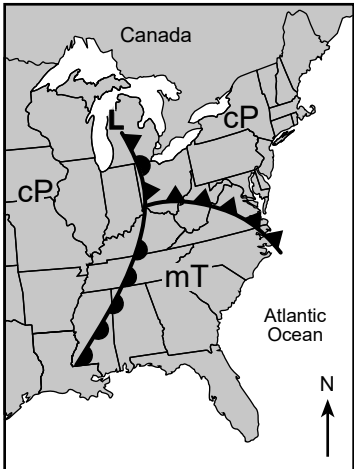
Which dot represents Polaris?

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

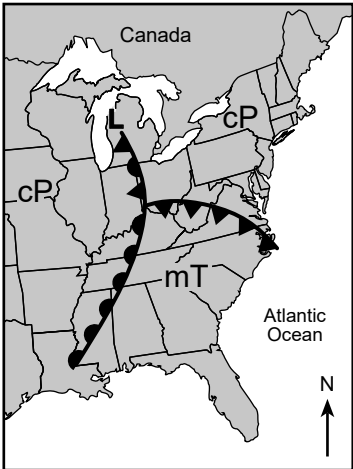
15 The map below shows a low-pressure system over the eastern portion of the United States. The lines coming from the center of this low-pressure system (L) represent frontal boundaries. The air masses are labeled.



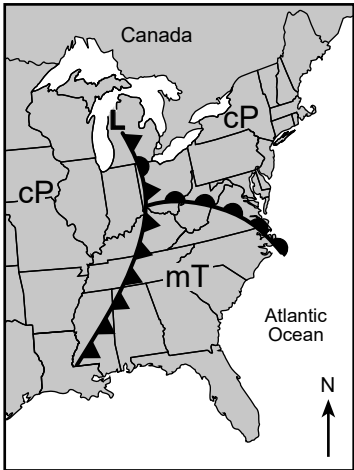
Which map shows the front symbols that correctly represent the types of fronts and their directions of movement?



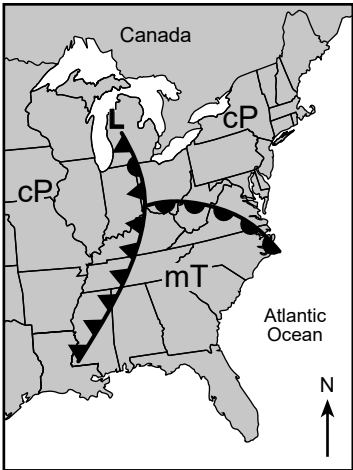
(1)



(3)



(2)

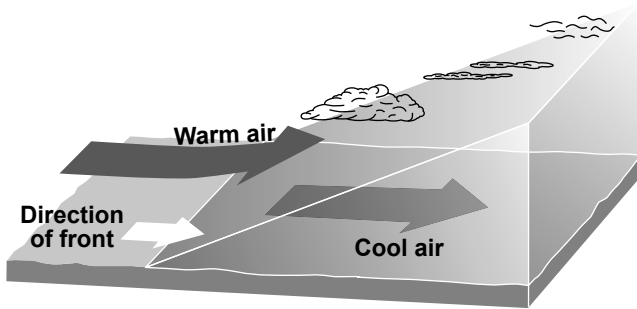


(4)

16 The highest concentration of atmospheric ozone is found in the stratosphere. At which range of altitudes above Earth's surface is the highest concentration of ozone located?

- (1) 5 km to 10 km (3) 55 km to 60 km
- (2) 20 km to 25 km (4) 90 km to 95 km

17 The diagram below represents a cross section of Earth's atmosphere.



Which type of front is represented by the cross section?

- (1) stationary front (3) warm front
- (2) occluded front (4) cold front

18 Which event will occur as a direct result of increasing the quantity of atmospheric greenhouse gases?

- (1) increased deforestation
- (2) a lowering of sea level
- (3) less extreme natural disasters
- (4) a change in temperature patterns

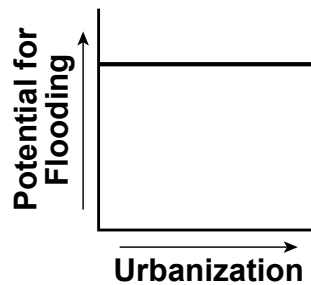
19 Which short-term change in Earth's atmospheric conditions occurs when dust and ash clouds from a major volcanic eruption enter the atmosphere?

- (1) lower air temperatures due to increased atmospheric transparency
- (2) lower air temperatures due to decreased atmospheric transparency
- (3) higher air temperatures due to increased atmospheric transparency
- (4) higher air temperatures due to decreased atmospheric transparency

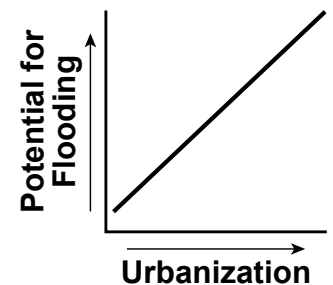
20 Compared to inland locations, coastal locations at the same altitude tend to have

- (1) a smaller annual temperature range
- (2) a greater annual temperature range
- (3) warmer temperatures in the summer
- (4) colder temperatures in the winter

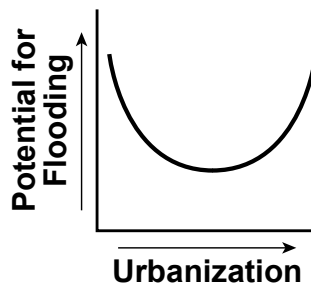
21 Which graph best shows the relationship between urbanization and potential for flooding in a given region?



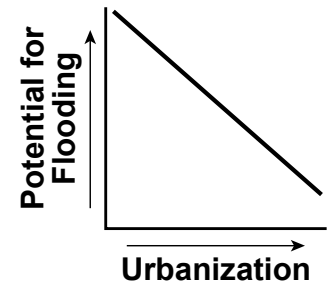
(1)



(3)



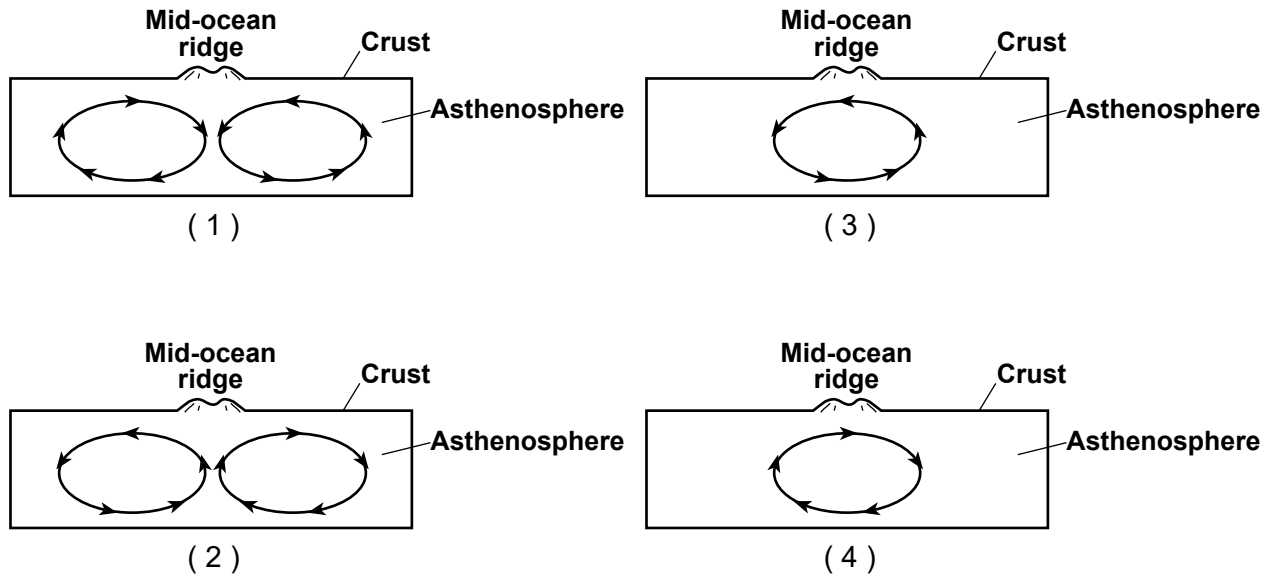
(2)



(4)

- 22 At which New York State location are marine fossils *least* likely to be found in the surface bedrock?
- (1) Mt. Marcy (3) Ithaca
(2) Slide Mt. (4) Watertown
- 23 Volcanic ash found between rock layers is very useful in correlating bedrock outcrops because the ash
- (1) is composed of fine-grained particles
(2) was produced at random, unpredictable time intervals
(3) was spread quickly over a wide area
(4) remained in the atmosphere for thousands of years
- 24 The Alleghenian, Acadian, and Taconian orogenies are all the result of the
- (1) formation of a delta
(2) formation of Pangaea
(3) closing of the Iapetus Ocean
(4) collision of North America with a landmass
- 25 During the Precambrian Eon, cyanobacteria affected Earth's atmosphere over time by increasing global levels of
- (1) oxygen (3) methane
(2) nitrogen (4) carbon dioxide
- 26 Which group of organisms existed on Earth for the *least* amount of time?
- (1) birds (3) mammals
(2) corals (4) placoderm fish
- 27 Compared to the continental crust, the oceanic crust is
- (1) less dense and more granitic
(2) less dense and more mafic
(3) more dense and more basaltic
(4) more dense and more felsic
- 28 Between which two tectonic plates is a complex or uncertain plate boundary located?
- (1) Fiji Plate and Pacific Plate
(2) Caribbean Plate and South American Plate
(3) Arabian Plate and Indian-Australian Plate
(4) Sandwich Plate and Antarctic Plate
- 29 Which two mantle hot spots are located at mid-ocean ridges?
- (1) St. Helena and Tasman
(2) Galapagos and Yellowstone
(3) Easter Island and Bouvet
(4) Canary Island and Iceland
- 30 The movement of tectonic plates during the last 200 million years has resulted in changes in
- (1) global climates and length of year
(2) global climates and patterns of evolution of organisms
(3) Earth's distance from the Sun and length of year
(4) Earth's distance from the Sun and patterns of evolution of organisms
- 31 Which mineral has a shiny, nonmetallic luster, shows cleavage, and cannot scratch glass? (The hardness of glass is 5.5.)
- (1) quartz (3) galena
(2) olivine (4) biotite mica

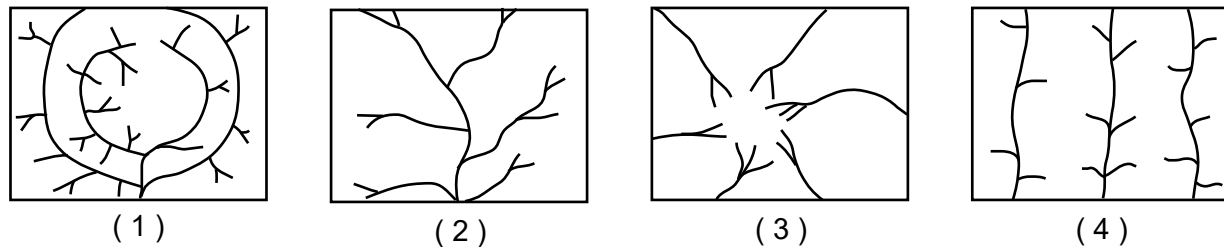
32 Which cross section best represents convection in the asthenosphere under a mid-ocean ridge?



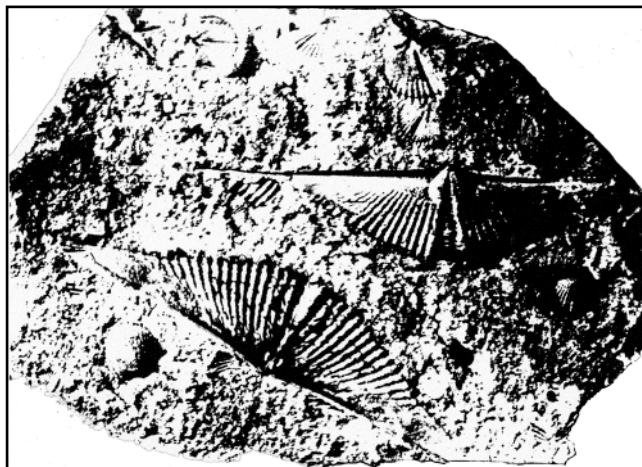
33 The photograph below shows an eroded dome located in Northwest Africa.



Which diagram best represents the stream drainage pattern found on this eroded dome?



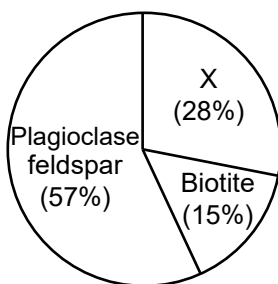
34 The photograph below shows a rock composed mostly of fossils and broken shell fragments.



This rock is best identified as

- | | |
|--------------------------|------------------------|
| (1) vesicular pumice | (3) crystalline halite |
| (2) bioclastic limestone | (4) foliated schist |

35 The graph below represents the percentage of three minerals found in a sample of a common igneous rock.



Which mineral is most likely represented by letter X?

- | | |
|-------------|---------------|
| (1) quartz | (3) amphibole |
| (2) olivine | (4) pyroxene |
-

Part B-1

Answer all questions in this part.

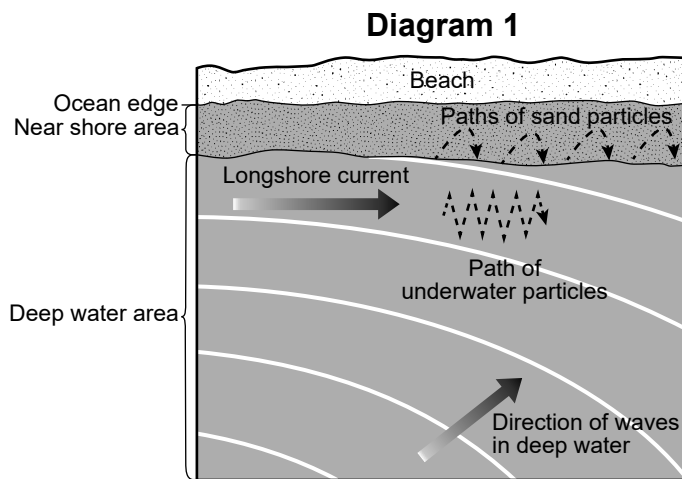
Directions (36–50): For *each* statement or question, choose the word or expression that, of those given, best completes the statement or answers the question. Some questions may require the use of the *2011 Edition Reference Tables for Physical Setting/Earth Science*. Record your answers on your separate answer sheet.

Base your answers to questions 36 through 38 on the passage, diagram, and photograph below, and on your knowledge of Earth science. Diagram 1 represents an overhead view of the movement of water and sand in a longshore current along a beach. Arrows represent direction of movement. The photograph shows groins located along the shore of Monmouth Beach, New Jersey.

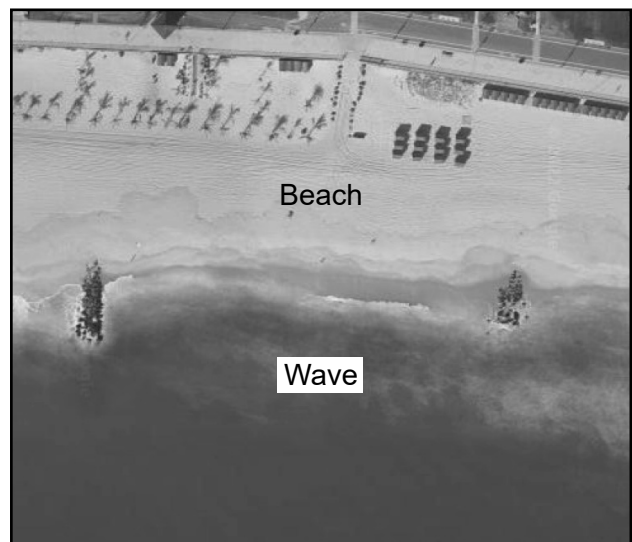
Longshore Currents

Longshore sediment transport occurs as waves approach the shoreline at an angle. These currents carry sand parallel to the beach. The amount of sand moved along the shoreline depends on the size and velocity of the waves.

Along the shore of Monmouth Beach, New Jersey, longshore currents are present. Groins at Monmouth are structures made up of concrete or stone built out into the ocean to slow the movement of sand by these longshore currents.



Monmouth Beach, New Jersey



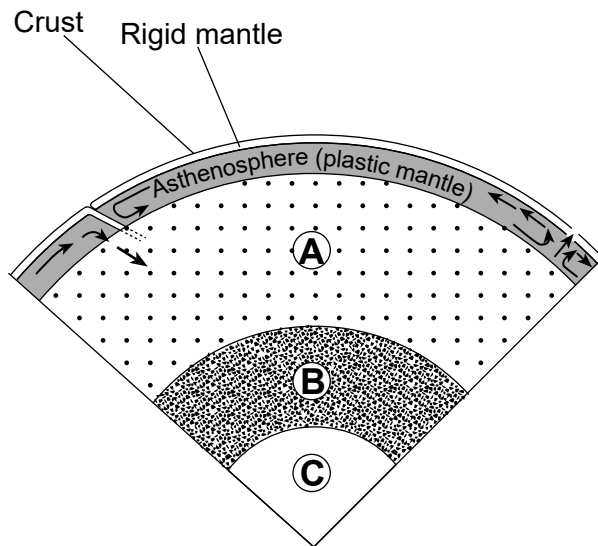
N →

- 36 In longshore currents, the water flows parallel to the beach, and the waves generally approach
- | | |
|------------------------------|--|
| (1) parallel to the beach | (3) in a zig-zag pattern along the beach |
| (2) at an angle to the beach | (4) perpendicular to the beach |
- 37 The amount of sand moved along the shoreline and trapped by these groins mainly depends on the
- | | |
|---------------------------------------|---|
| (1) velocity of the longshore current | (3) height of sea level along the shore |
| (2) distance the sand moved | (4) temperature of the water in the current |

38 Which ocean current affects the shore of Monmouth Beach, New Jersey, and other locations along the east coast of the United States?

- (1) Gulf Stream Current (3) North Atlantic Current
(2) Labrador Current (4) North Equatorial Current

Base your answers to questions 39 and 40 on the cross section below and on your knowledge of Earth science. The cross section represents the major layers of Earth's interior. Letters A, B, and C identify three of the layers.



(Not drawn to scale)

39 Which table correctly identifies the phase of matter of each lettered layer?

Layer	Phase
A	solid
B	solid
C	liquid

(1)

Layer	Phase
A	solid
B	liquid
C	solid

(3)

Layer	Phase
A	solid
B	liquid
C	liquid

(2)

Layer	Phase
A	liquid
B	solid
C	liquid

(4)

40 What is the approximate inferred interior temperature at the boundary between Earth's rigid mantle and asthenosphere?

- (1) 100°C (3) 1600°C
(2) 800°C (4) 2600°C

Base your answers to questions 41 through 43 on the passage and data table below and on your knowledge of Earth science. The data table shows some features of the four planets that orbit the star Tau Ceti.

Tau Ceti

Tau Ceti is a star located within our galaxy at a distance of 12 light-years from Earth (1 light-year is equal to 5.9×10^{12} miles). Tau Ceti has a surface temperature of 5300 K and a luminosity of 0.42. This star is observable from the Northern Hemisphere in late autumn and early winter. Four planets, *E*, *F*, *G*, and *H*, orbit Tau Ceti.

Planets of Tau Ceti	Period of Revolution (days)	Mass (Earth = 1)	Eccentricity of Orbit
E	162.9	3.93	0.188
F	636.1	3.93	0.160
G	20.0	1.75	0.060
H	49.4	1.83	0.230

41 Tau Ceti cannot be observed from the northern hemisphere during the late spring and early summer due to

- | | |
|--|---------------------------------------|
| (1) Tau Ceti's revolution around the Sun | (3) Earth's revolution around the Sun |
| (2) Tau Ceti's rotation on its axis | (4) Earth's rotation on its axis |

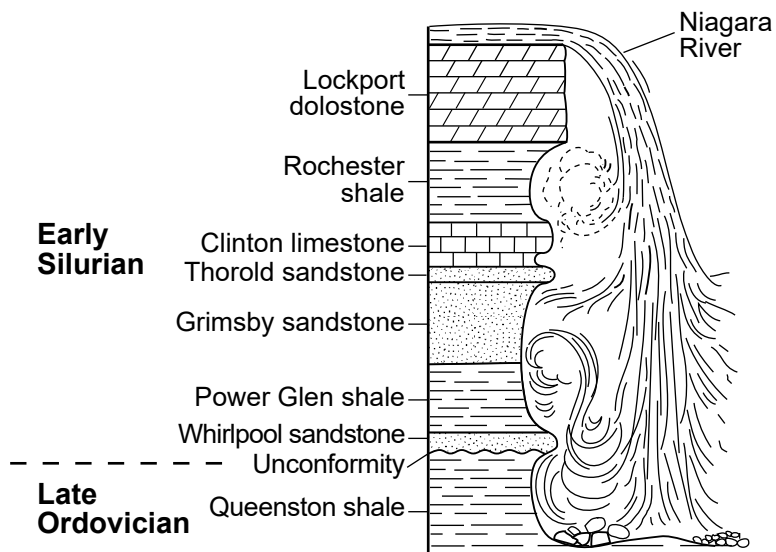
42 The orbital eccentricity of planet *H* is most similar to the orbital eccentricity of

- | | |
|-----------|-------------|
| (1) Earth | (3) Mercury |
| (2) Mars | (4) Jupiter |

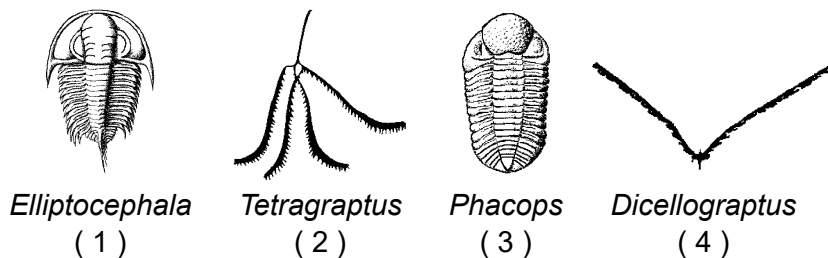
43 Which planet's orbit is located farthest from Tau Ceti?

- | | |
|--------------|--------------|
| (1) <i>E</i> | (3) <i>G</i> |
| (2) <i>F</i> | (4) <i>H</i> |
-

Base your answers to questions 44 through 46 on the geologic cross section of Niagara Falls shown below.



44 Which index fossil might be found in the Queenston shale?



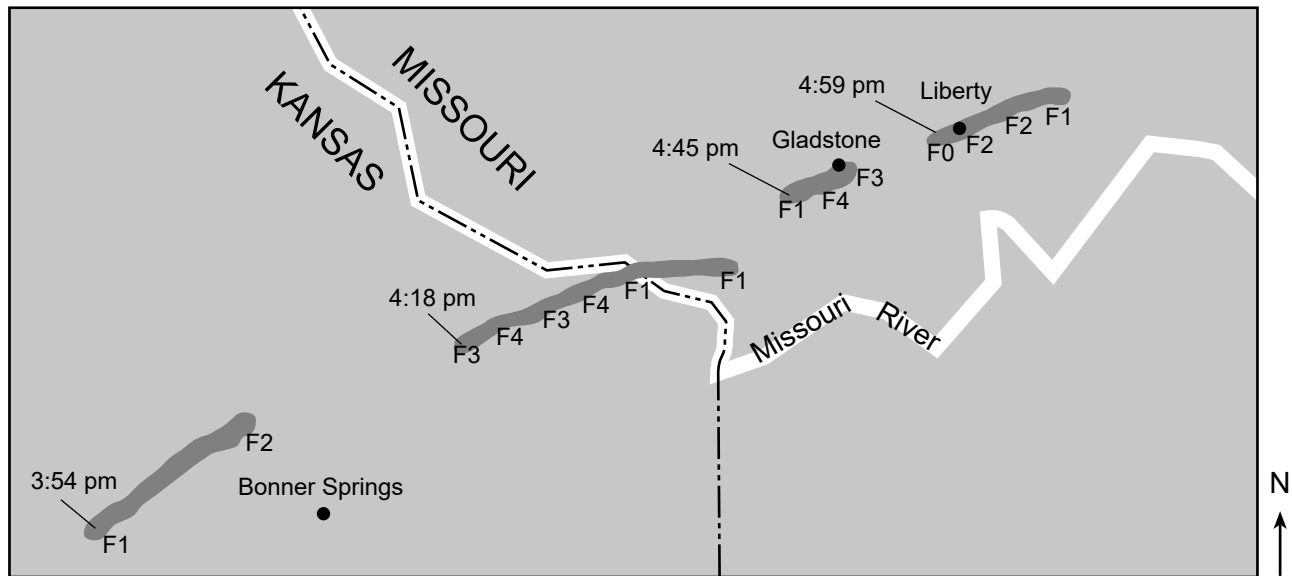
45 A common characteristic of all the fossils that could be found in this geologic cross section is that they are all from organisms that

- | | |
|---|-----------------------|
| (1) lived during the Paleozoic Era | (3) still exist today |
| (2) lived more than 542 million years ago | (4) lived on land |

46 Which two rock layers appear to be most resistant to weathering?

- | | |
|---|--|
| (1) Thorold sandstone and Grimsby sandstone | (3) Lockport dolostone and Whirlpool sandstone |
| (2) Clinton limestone and Rochester shale | (4) Queenston shale and Power Glen shale |

Base your answers to questions 47 through 50 on the map and table below and on your knowledge of Earth science. The map shows the path of a tornado that formed near the Kansas–Missouri border on May 4, 2003. The darker shaded areas indicate the path of the tornado on the ground. Times indicate when the tornado reached the ground. The numbers along each path indicate the strength of the tornado at that location based on the Fujita Tornado Intensity Scale used at that time. The table shows the estimated wind speed for each value of the Fujita scale.



Fujita Tornado Intensity Scale

Scale	Estimated Wind Speed (mph)
F0	40 to 72
F1	73 to 112
F2	113 to 157
F3	158 to 206
F4	207 to 260
F5	261 to 318

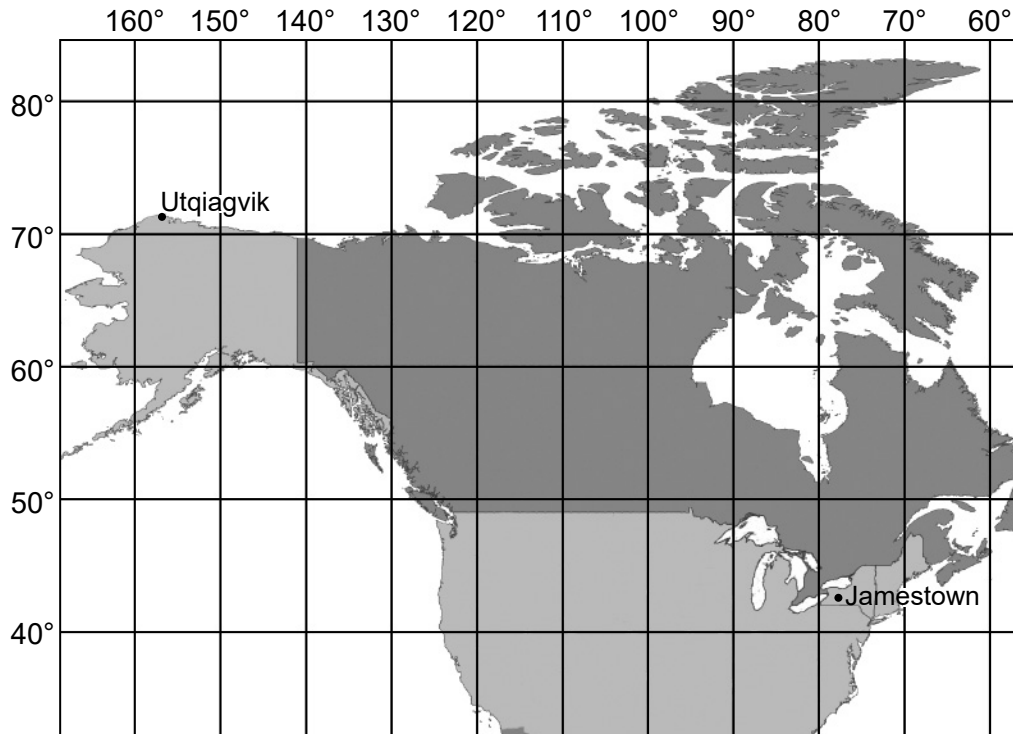
- 47 Compared to the strength of the tornado when it touched the ground at 3:54 p.m., the strength of the tornado when it touched the ground at 4:18 p.m. was
- (1) less, and the distance traveled after touching the ground was shorter
 - (2) less, and the distance traveled after touching the ground was longer
 - (3) greater, and the distance traveled after touching the ground was shorter
 - (4) greater, and the distance traveled after touching the ground was longer
- 48 The general compass direction of movement of this tornado was from the
- (1) southwest to the northwest
 - (2) southwest to the northeast
 - (3) northeast to the southeast
 - (4) northeast to the southwest
- 49 Compared to the size and duration of this tornado, a hurricane is
- (1) smaller and lasts a shorter time
 - (2) smaller and lasts a longer time
 - (3) larger and lasts a shorter time
 - (4) larger and lasts a longer time
- 50 Strong thunderstorms that produce tornadoes are usually formed by the interaction of
- (1) cold and warm air masses
 - (2) polar and subtropical jet streams
 - (3) air and a large, warm water surface
 - (4) air and a large, cold water surface
-

Part B–2

Answer all questions in this part.

Directions (51–65): Record your answers in the spaces provided in your answer booklet. Some questions may require the use of the *2011 Edition Reference Tables for Physical Setting/Earth Science*.

Base your answers to questions 51 through 53 on the map below, the data table on the next page, and on your knowledge of Earth science. The map shows the approximate locations of Utqiagvik, Alaska, and Jamestown, New York. The data table shows the altitude of the Sun at solar noon, when visible, for these two locations on the 21st of each month for one year.



Data Table

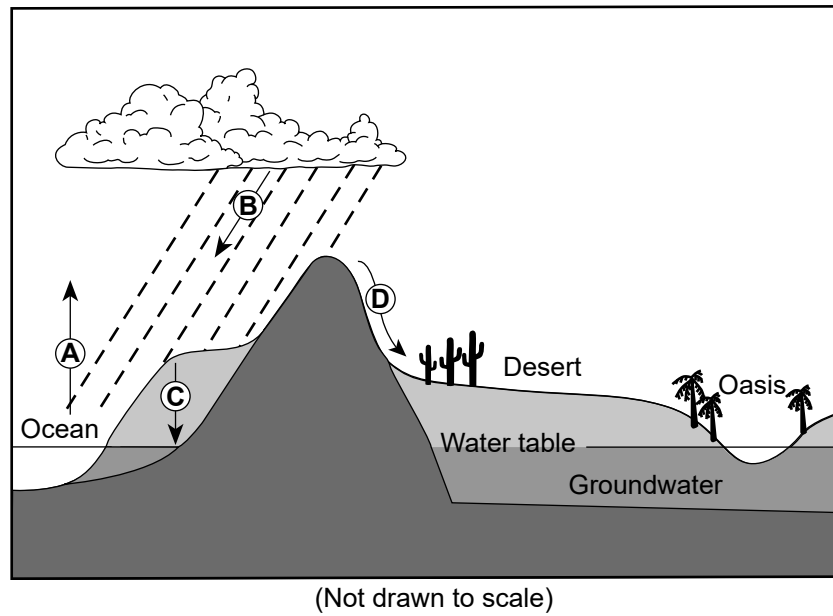
Date	Altitude of Sun at Solar Noon (°)	
	Utqiagvik, Alaska	Jamestown, New York
Jan. 21	Sun not visible	28.1
Feb. 21	8.5	37.5
Mar. 21	19.3	48.3
Apr. 21	30.8	59.9
May 21	39.3	68.2
Jun. 21	42.2	71.3
Jul. 21	39.1	68.3
Aug. 21	30.6	59.9
Sep. 21	19.2	48.4
Oct. 21	7.9	37.1
Nov. 21	Sun not visible	27.9
Dec. 21	Sun not visible	24.5

51 Explain why no Sun is visible at noon at Utqiagvik, Alaska, for the three dates shown on the data table. [1]

52 Identify the number of daylight hours that occur in Jamestown, New York, on March 21. [1]

53 Determine the altitude of Polaris for an observer in Utqiagvik, Alaska. [1]

Base your answers to questions 54 and 55 on the diagram below and on your knowledge of Earth science. The diagram shows coastal mountains and a desert area with an oasis at approximately 30° N latitude. An oasis is an isolated body of water with surrounding vegetation found in a desert region. The arrows labeled A, B, C, and D represent processes of the water cycle.



54 Identify the processes of the water cycle represented by arrows A, B, C, and D. [1]

55 Explain how the oasis gets most of its water even though it is in the middle of the desert. [1]

Base your answers to questions 56 through 58 on the photograph below and on your knowledge of Earth science. The photograph shows Middle Proterozoic-aged metamorphic bedrock exposed at a New York State location.

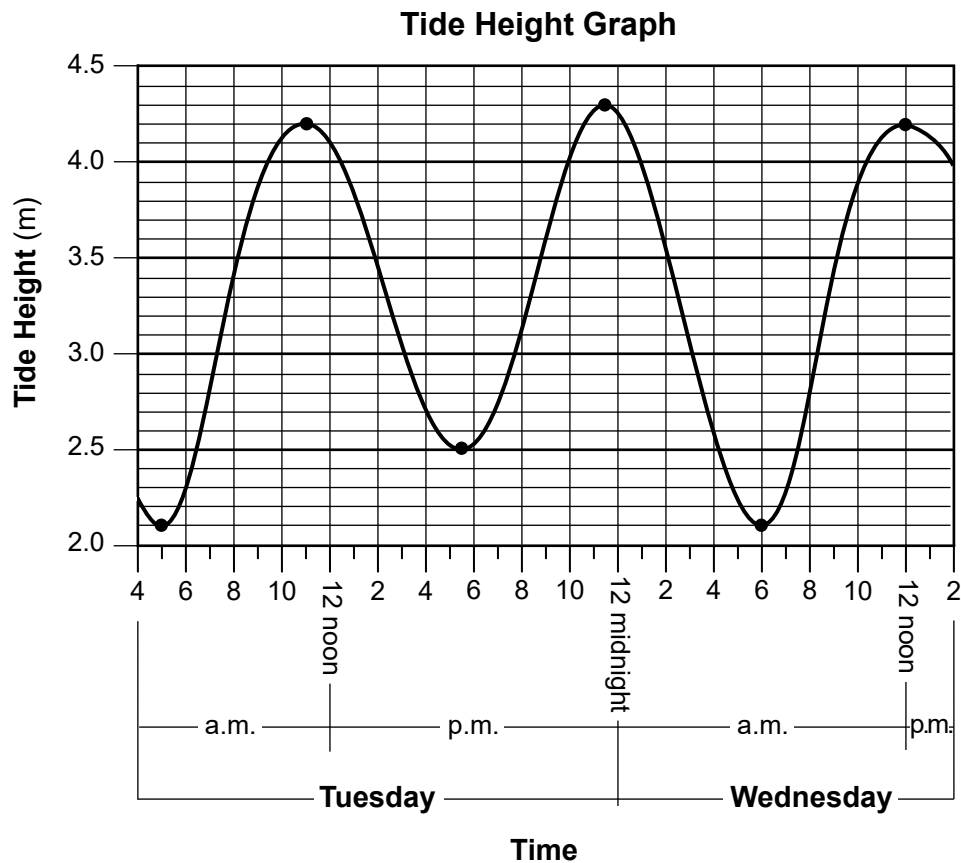


- 56 Identify the name of the foliated, coarse-grained metamorphic rock shown in the photograph. [1]
- 57 Other than heating, identify a geologic process that caused the regional metamorphism of this distorted bedrock. [1]
- 58 An enlarged section of the Generalized Bedrock Geology of New York State is shown *in your answer booklet*. On this map, place an **X** on the bedrock region where this photograph could have been taken. [1]
-

Base your answers to questions 59 through 62 on the diagram in your answer booklet and on your knowledge of Earth science. The diagram represents a portion of a river and its surrounding tributaries. Points A and B represent locations along the edges of the river.

- 59 On the diagram *in your answer booklet*, place an **X** on the flood plain of this river. [1]
- 60 In the box provided *in your answer booklet*, draw a cross-sectional view of the general shape of the stream bottom below the water's surface from point A to point B. [1]
- 61 The table *in your answer booklet* lists three factors that affect the settling rate of sediments deposited in a river. Circle *one* term in *each* row to indicate the characteristic that will cause the sediment to settle out first as the velocity of the river decreases. [1]
- 62 Describe the change in size and change in shape of the sediments as they are transported by the river. [1]
-

Base your answers to questions 63 through 65 on the graph below and on your knowledge of Earth science. The graph shows the time and height of high and low tides for two consecutive days in January.



- 63 Determine the difference in tide height between 11:00 a.m. and 5:30 p.m. on Tuesday. [1]
- 64 Based on the graph, predict the time of the next low tide on Wednesday. Indicate a.m. or p.m. in your answer. [1]
- 65 The diagram *in your answer booklet* shows the orbit of the Moon around Earth. On the diagram, place an **X** on the Moon's orbit to represent one position of the Moon resulting in the highest high tide. [1]

Part C

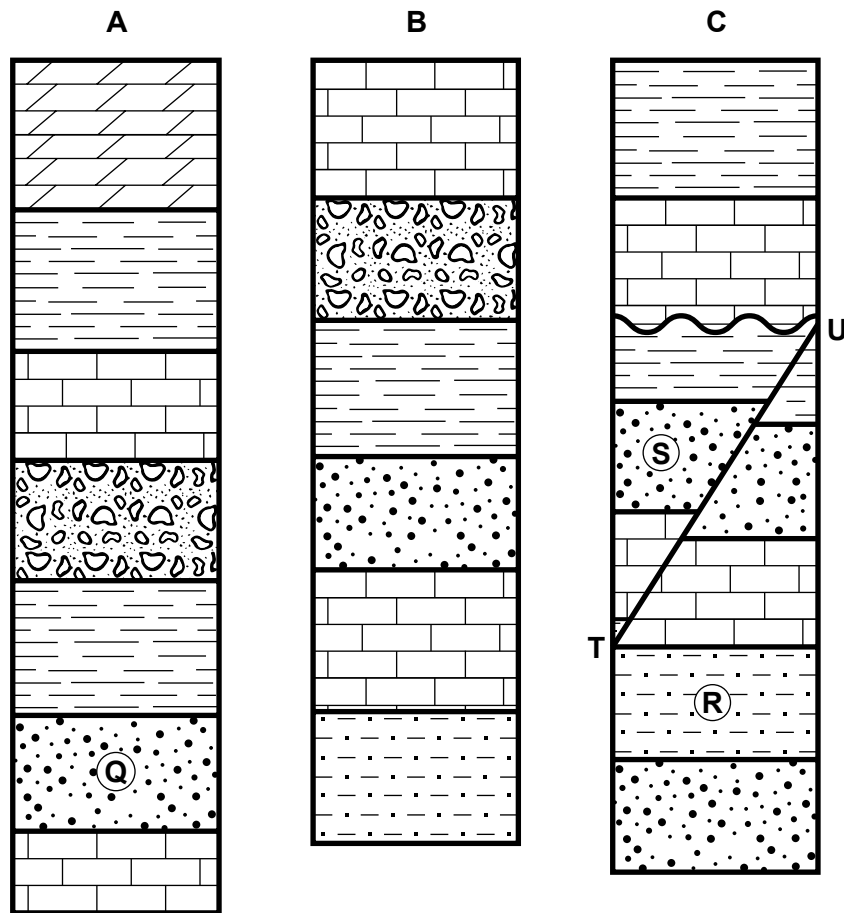
Answer all questions in this part.

Directions (66–85): Record your answers in the spaces provided in your answer booklet. Some questions may require the use of the *2011 Edition Reference Tables for Physical Setting/Earth Science*.

Base your answers to questions 66 through 70 on the topographic map in your answer booklet and on your knowledge of Earth science. On the map, the 300-meter and 400-meter contour lines have been partially drawn. Points *A* through *D* represent locations on the map. Line *BC* is a reference line. Elevations are shown in meters.

- 66 On the map *in your answer booklet*, complete the 300-meter and 400-meter contour lines. [1]
- 67 State *one* possible elevation for location *A* in meters. [1]
- 68 Calculate the gradient between points *B* and *C* in meters per kilometer. [1]
- 69 Describe the evidence shown on the map that indicates the area around location *D* is relatively flat. [1]
- 70 Identify the compass direction toward which Cheryl River is flowing and explain how contour lines provide the evidence for determining this direction. [1]
-

Base your answers to questions 71 through 73 on the cross sections below and on your knowledge of Earth science. The cross sections represent three different outcrops, labeled A, B and C, found several kilometers apart. Letters Q, R, and S indicate three sedimentary rock layers. Line TU represents a fault. No overturning of the sedimentary rock layers has occurred. An unconformity (~~~~~) is indicated in outcrop C.



71 In your answer booklet, circle the letter of the outcrop and identify the name of the sedimentary rock in that outcrop where the oldest layer is present. [1]

72 State the entire range of grain sizes, in centimeters, that could be present in rock layer R. [1]

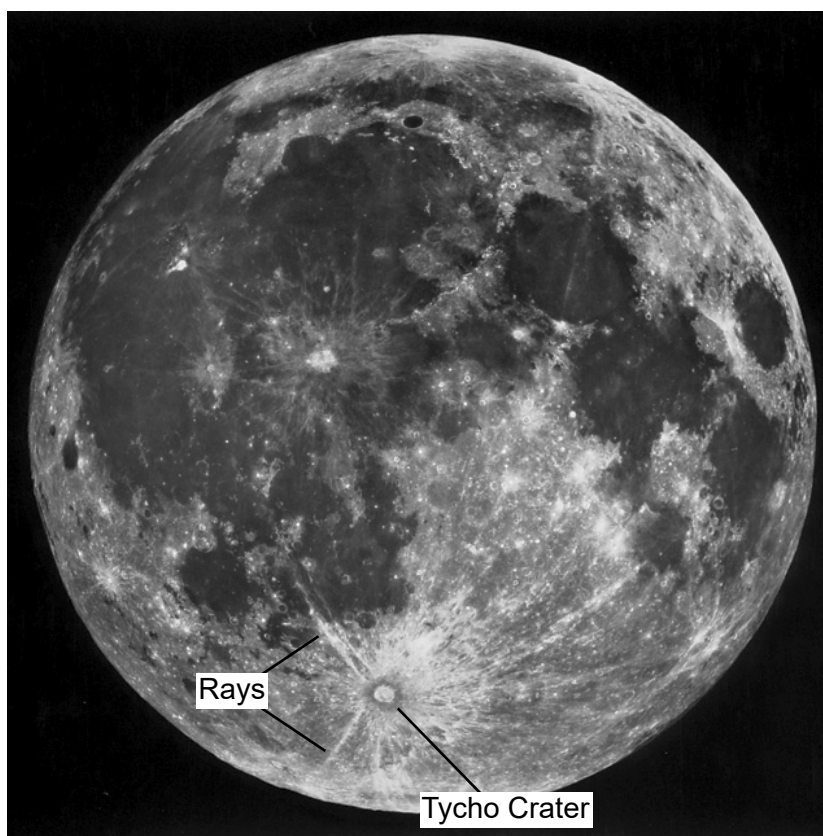
73 In your answer booklet, place a check mark (✓) in the box to identify whether rock layer S or fault TU is younger. Describe the evidence shown in the cross section that supports your answer. [1]

Base your answers to questions 74 through 76 on the passage and photograph below and on your knowledge of Earth science. The photograph shows the location of the Tycho crater on the Moon.

Tycho Crater

Tycho is an impact crater located in the southern hemisphere of the Moon. It has a diameter of 53 miles and is one of the most visible craters on the Moon. Ejecta, material thrown from the crater upon impact, can be seen as light-colored rays coming from the crater. Some rays are 900 miles in length. This light coloration is due to Tycho's "young" age. Moon rocks thought to be ejected from the impact have been brought back to Earth by the Apollo 17 mission and found to be 108 million years old. Based on rocks brought back by other Apollo missions, many craters on the Moon have been dated to be 3.9 billion years old and are darker in color than more recently formed craters. The floor of the Tycho crater shows evidence of rocks that were heated to such high temperatures during the impact that they melted, then cooled and solidified on the surface.

The Moon



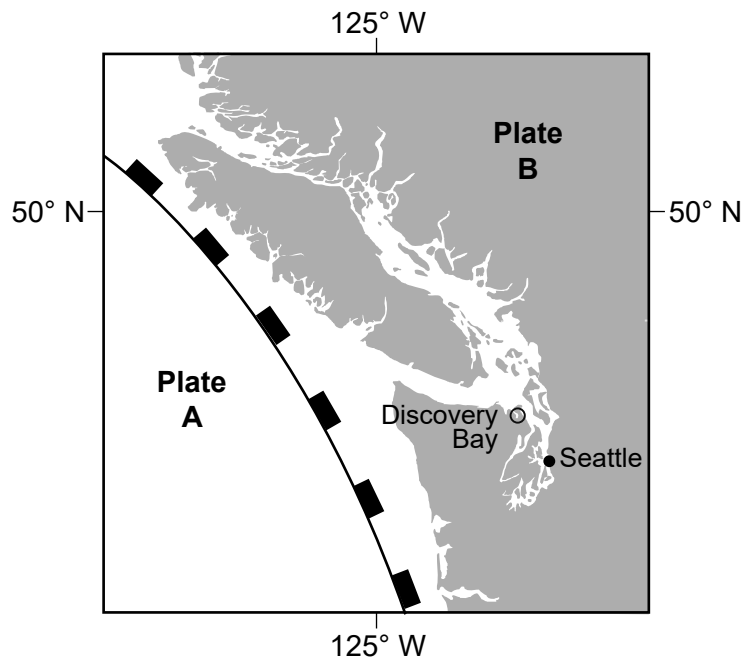
Source: solarsystem.nasa.gov

- 74 Identify *one* celestial object that most likely created the Tycho crater on the Moon. [1]
- 75 Identify the name of the geologic period during which the Tycho crater is inferred to have formed. [1]
- 76 Identify *one* global effect of the impact event on Earth that occurred 65.5 million years ago on Earth. [1]
-

Base your answers to questions 77 through 79 on the passage and the map below and on your knowledge of Earth science. The map shows a section of the Pacific Northwest region of the United States and southwest Canada. Two tectonic plates in the region are labeled Plate A and Plate B. Discovery Bay and the city of Seattle, Washington, are also indicated.

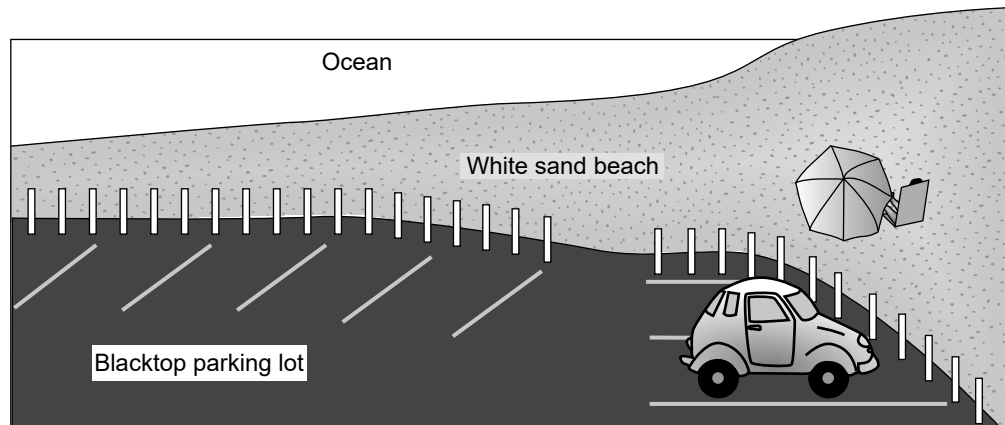
Tsunami Deposits in Discovery Bay

Evidence for a large number of tsunamis affecting the northwest United States can be found in Discovery Bay in the state of Washington. There are records of nine tsunamis that hit the area in the last 2500 years. Deposits left by these tsunamis contain the remains of a type of marsh plant, *Triglochin maritima*, which was used to determine when each tsunami occurred.



- 77 Describe the relative plate motion in this region, which produced tsunamis in Discovery Bay. [1]
- 78 Identify *one* geologic feature that would form as a result of the interaction of tectonic Plate A and tectonic Plate B. [1]
- 79 If a tsunami warning was issued for the Seattle area and the tsunami was predicted to occur within the hour, state *one* emergency action that the residents of Seattle should take to prevent harm or loss of life. [1]
-

Base your answers to questions 80 and 81 on the diagram below, which shows a car with closed windows and doors. The car is located in a parking lot at a beach on Long Island, New York, on a summer day.



80 Explain why the blacktop parking lot heats up faster than the white sand beach during the day. [1]

81 If equal areas of ocean water and sand absorb the same amount of insolation, explain why the ocean water does *not* heat up as fast as the sand. [1]

Base your answers to questions 82 through 85 on the data table below and on your knowledge of Earth science. The data table shows the noontime high air temperature and air pressure recorded for eight days in January for a location in New York State.

Noontime Air Temperature and Air Pressure

January	Air Temperature (°F)	Air Pressure (mb)
6	36	1020.5
7	33	1032.5
8	43	1012.0
9	40	1004.0
10	28	1013.5
11	16	1030.0
12	21	1038.0
13	23	1035.5

82 Describe the general relationship between the air temperature and air pressure shown in the data table. [1]

83 A student makes a claim that a warm front went through this location on the evening of January 7.
Identify the evidence from the data table to support the student's claim. [1]

84 Identify the weather instruments most commonly used to determine the air temperature and air pressure. [1]

85 On the station model *in your answer booklet*, using the proper format, record the air temperature and air pressure on January 10. [1]
