## MODEL OF THE EARTH REVIEW QUESTIONS SET 3

1. Which latitude and longitude coordinates could the Gulf Stream ocean current be located?
(1) $20^{\circ} \mathrm{S}, 135^{\circ} \mathrm{W}$
(3) $30 \circ \mathrm{~N}, 65 \circ \mathrm{~W}$
(2) $30 \circ \mathrm{~N}, 75^{\circ} \mathrm{E}$
(4) $60 \circ \mathrm{~N}, 0^{\circ}$

The diagram below represents a portion of the Earth's latitude and longitude system.

2. What would the altitude of Polaris be as viewed from point $A$ ?
(1) $10^{\circ}$
(3) $20^{\circ}$
(2) $15^{\circ}$
(4) $30^{\circ}$
3. What is the latitude of Jamestown, New York?
(1) $42^{\circ} 10^{\prime} \mathrm{N}$
(3) $79008^{\circ} \mathrm{N}$
(2) $42^{\circ} 10^{\prime} \mathrm{W}$
(4) $79^{\circ} 08^{\circ} \mathrm{W}$
4. What is the air temperature at an altitude of 110 km above sea level?
(1) $15^{\circ} \mathrm{C}$
(3) $60^{\circ} \mathrm{C}$
(2) $-90^{\circ} \mathrm{C}$
(4) $100^{\circ} \mathrm{C}$
5. What is the thickness of the stratosphere in kilometers?
(1) 31 km
(3) 50 km
(2) 39 km
(4) 11 km
6. As altitude increases, the amount of water vapor in the air
(1) increases
(2) decreases
(3) remains the same
7. At which location would the altitude of Polaris be the highest?
(1) Tropic of Cancer
(3) Tropic of Capricorn
(2) Arctic Circle
(4) Antarctic Circle
8. What is the longitude of Watertown, New York?
(1) $75^{\circ} 55^{\circ} \mathrm{N}$
(3) $75^{\circ} 55^{\circ} \mathrm{W}$
(2) $43^{\circ} 05^{\circ} \mathrm{W}$
(4) $76{ }^{\circ} 05^{\circ} \mathrm{W}$
9. Which list puts the outer portions of the Earth in order of decreasing thickness?
(1) hydrosphere, lithosphere, atmosphere
(2) lithosphere, hydrosphere, atmosphere
(3) atmosphere, hydrosphere, lithosphere
(4) atmosphere, lithosphere, hydrosphere
10.. Which lists four gases found in abundance in the troposphere?
(1) oxygen, carbon dioxide, nitrogen, water vapor
(2) carbon dioxide, sulfur dioxide, nitrogen dioxide, ozone
(3) nitrogen, oxygen, hydrogen, helium
(4) water vapor, nitrogen, neon, xenon

Use the diagram below to answer questions 11-13.
11. What is the approximate latitude and longitude of location B?
(1) $20^{\circ} \mathrm{S}, 112^{\circ} \mathrm{E}$
(2) $200 \mathrm{~N}, 112^{\circ} \mathrm{W}$
(3) $25^{\circ} \mathrm{S}, 112^{\circ} \mathrm{W}$
(4) $112^{\circ} \mathrm{S}, 25^{\circ} \mathrm{W}$

12. If a person traveled from position C to position A , the observed altitude of Polaris would
(1) decrease
(2) increase
(3) remain the same
13. Which position would be closest to the Hawaii Hot Spot
(1) A
(3) E
(2) $B$
(4) D
14. The time difference between two cities is 5 hours. How many degrees longitude separate these two cities?
(1) $30^{\circ}$
(3) $60^{\circ}$
(2) $45^{\circ}$
(4) $75^{\circ}$
15. According to the Earth Science Reference Tables, the location of Mt. Marcy is:
(1) $74^{\circ} 05^{\prime} \mathrm{N}, 44^{\circ} 10^{\prime} \mathrm{W}$
(3) $73^{\circ} 55^{\prime} \mathrm{N}, 44^{\circ} 10^{\prime} \mathrm{W}$
(2) $44^{\circ} 10^{\prime} \mathrm{N}, 73^{\circ} 55 \mathrm{~W}$
(4) $44^{\circ} 45^{\prime} \mathrm{N}, 74^{\circ} 05^{\prime} \mathrm{W}$
16. The time at $15^{\circ} \mathrm{E}$ longitude is $4: 00 \mathrm{pm}$. What time would it be at $15^{\circ} \mathrm{W}$ longitude?
(1) $1: 00 \mathrm{pm}$
(3) $6: 00 \mathrm{pm}$
(2) $2: 00 \mathrm{pm}$
(4) $12: 00 \mathrm{pm}$
17. The time at a location on $60^{\circ} \mathrm{W}$ is $11: 00 \mathrm{pm}$ on October 10th. At which longitude would the time be 5:00am on October 11?
(1) $30^{\circ} \mathrm{W}$
(3) $45^{\circ} \mathrm{E}$
(2) $0^{\circ}$
(4) $30^{\circ} \mathrm{E}$

18 The lithosphere consists of the
(1) hydrosphere and the atmosphere
(3) outer and inner core of the Earth
(2) crust and rigid mantle
(4) the lowest layer of air in the atmosphere
19. To an observer in Buffalo, New York, the North Star, Polaris, is always located above the northern horizon at an altitude of approximately
(1) $23^{\circ}$
(3) $66^{\circ}$
(2) $43^{\circ}$
(4) $90^{\circ}$
20. An airplane takes off from a location at $40^{\circ} \mathrm{S}$ latitude and flies to a new location 20 degrees due south of its starting point. What latitude has the airplane reached?
(1) $20^{\circ} \mathrm{N}$
(3) $60^{\circ} \mathrm{N}$.
(2) $20^{\circ} \mathrm{S}$
(4) $60^{\circ} \mathrm{S}$
21. At which latitude will Polaris at an observer's zenith?
(1) $0^{\circ}$
(3) $90^{\circ} \mathrm{S}$.
(2) $231 / 2^{\circ} \mathrm{N}$.
(4) $90^{\circ} \mathrm{N}$.
22. As altitude increases in the troposphere, the air pressure will
(1) decrease, but air temperature will increase
(2) increase, and so will the air temperature
(3) decrease, and so will the air temperature
(4) increase, but the air temperature will decrease
23. A person knows the time on the Prime Meridian and the local time. What determination can be made?
(1) the date
(3) the longitude at which the person is located
(2) the altitude of Polaris
(4) the latitude at which the person is located

The map shows some regions where metamorphic bedrock of the Grenville Province in northeastern North America is exposed at Earth's surface.

24. Which location has surface bedrock that consists mostly of gneiss, schist, or marble?
(1) $43^{\circ} \mathrm{N} 81^{\circ} \mathrm{W}$
(3) $47^{\circ} \mathrm{N} 69^{\circ} \mathrm{W}$
(2) $46^{\circ} \mathrm{N} 78^{\circ} \mathrm{W}$
(4) $49^{\circ} \mathrm{N} 71^{\circ} \mathrm{W}$


Use the diagram below to answer questions 25-29.
Letters A, B, C, D, and X on the map below represent locations on the Earth. The map shows the latitude-longitude grid.

25. Between which two points would an observer have to travel for the altitude of Polaris to remain constant the entire trip?
(1) X to C
(3) D to C
(2) B to X
(4) $A$ to $B$
26. What is the longitude interval of the map?
(1) $15^{\circ}$
(3) $90^{\circ}$.
(2) $30^{\circ}$
(4) $60^{\circ}$
27. How many hours of time exist between points $B$ and $C$ ?
(1) 1
(3) 3
(2) 2
(4) 0
28. What would points $A, X$, and $C$ have in common?
(1) they would all observe the same altitude of Polaris
(2) they are in the same time zone
(3) they are all part of the lithosphere
(4) they are on the same longitude
29. If the time at point $C$ is $9: 00 \mathrm{pm}$, what time would is be at point $X$ ?
(1) 12:00am
(3) $3: 00 \mathrm{pm}$
(2) $9: 00 \mathrm{pm}$
(4) $6: 00 \mathrm{pm}$
30. If the base of a cloud is located at an altitude of 2 kilometers and the top of the cloud is located at an altitude of 8 kilometers, this cloud is located in the
(1) troposphere, only
(3) troposphere and stratosphere
(2) stratosphere, only
(4) stratosphere and mesosphere
31. The diagram below shows an observer measuring the altitude of Polaris. What is the latitude of the observer?
(1) $20^{\circ} \mathrm{N}$
(3) $70^{\circ} \mathrm{N}$
(2) $20^{\circ} \mathrm{S}$
(4) $70^{\circ} \mathrm{S}$

32. The diagram below shows an observer on Earth measuring the altitude of Polaris.

What is the latitude of this observer?
(1) $90^{\circ} \mathrm{N}$
(2) $66.5^{\circ} \mathrm{N}$
(3) $43^{\circ} \mathrm{N}$
(4) $23.5^{\circ} \mathrm{N}$

33. The diagram below represents the direction of Earth's rotation as it appears from above the North Pole. Point $X$ is a location on Earth's surface. The time at point $X$ is closest to


## Direction of rotation

(1) 6 a.m.
(3) 6 p.m.
(2) 12 noon
(4) 12 midnight

