

11th Geography Lesson 2 Questions in English

2] The Solar system and the Earth

1. Laplace revised the argument of earth's origin by German professor Immanuel Kant in 1796, which is known as?
 - A) Big bang theory
 - B) Nebular Hypothesis**
 - C) Plate tectonics theory
 - D) Singularity

Explanation

One of the earlier and popular arguments of the earth's origin was by a German professor Immanuel Kant. Mathematician Laplace revised it in 1796. It was known as Nebular Hypothesis. It considered that planets were formed out of a cloud of material associated with a youthful sun, which was slowly rotating.

2. Who propounded the accretion theory?
 - A) Lyttleton**
 - B) Hubble
 - C) Lemaitre
 - D) Immanuel

Explanation

Lyttleton propounded the accretion theory of the earth's formation.

3. According to which theory, approximately 4.6 billion years ago, the solar system was a cloud of dust?
 - A) Big bang theory
 - B) Nebular Hypothesis
 - C) Plate tectonics theory
 - D) Accretion theory**

Explanation

According to this theory, approximately 4.6 billion years ago, the solar system was a cloud of dust and gas known as a solar nebula

4. Which of the following is formed the sun?
 - A) Gas giants
 - B) Solar wind**
 - C) Solar nebula

D) Solar storm

Explanation

The solar nebula started to spin, the gravity collapsed the materials on itself and it formed the sun as the center of the solar system. When the sun formed, the remaining materials began to clump up. Small particles drew together, bound by the force of gravity, into larger particles.

5. Consider the following statements about solar winds, find the correct answer.

1. The solar wind swept away lighter elements like hydrogen and helium
2. Only heavy rocky materials left by these winds created planets

- A) 1 only
- B) 2 only
- C) Both 1&2
- D) Neither 1 nor 2

Explanation

The solar wind swept away lighter elements, such as hydrogen and helium, from the closer regions. It left only heavy rocky materials to create planets like the Earth. But farther away, the solar winds had less impact on lighter elements, allowing them to consolidate into gas giants. In this way, planets, moons, asteroids, comets, etc., were created.

6. _____ is a vast endless space which includes galaxies, stars, planets and others?

- A) Universe
- B) Milky way galaxy
- C) Solar system
- D) Constellation

Explanation

The universe is a vast endless space which includes galaxies, stars, planets and other forms of matter and energy in it.

7. Consider the following statements find the incorrect one

1. Voyager 2 travelling speed - more than 62,764.416 km/h
2. Still take more than 269,000 years to pass Deimos

- A) 1 only
- B) 2 only
- C) Both 1& 2
- D) Neither 1 nor 2

Explanation

Voyager 2 travelling at the speed of more than 62,764.416 km/h will still take more than 296,000 years to pass Sirius, the brightest star in our night sky

8. Earth's _____ is formed first when heavy elements collided and bound together

- A) Mantle
- B) Crust
- C) **Core**
- D) Rocks

Explanation

Earth's rocky core formed first when heavy elements collided and bound together. Dense materials sank to the center, while the lighter material created the crust. The planet's magnetic field probably formed around this time.

9. Gravity captured some of the gases that made up the planet's _____

- A) **Atmosphere**
- B) Gaseous planets
- C) Celestial bodies
- D) Galaxy

Explanation

Gravity captured some of the gases that made up the planet's early atmosphere.

10. Expanding universe hypothesis is otherwise called as

- A) **Big bang theory**
- B) Nebular Hypothesis
- C) Plate tectonics theory
- D) Accretion theory

Explanation

The Big Bang Theory is about the origin of the universe also called as expanding universe hypothesis

11. Find out the incorrect statement

- A) Abbe Georges Lemaitre, was the first to propose, a theory on the origin of the universe
- B) **According to big bang theory, the universe was formed before 11.75 million years ago.**
- C) Earth's rocky core formed first when heavy elements collided and bound together
- D) Sirius, the brightest star in our night sky.

Explanation

According to big bang theory, the universe was formed before 13.75 billion years ago

12. Theory of Edwin Hubble is

- A) Accretion theory
- B) Expanding universe hypothesis**
- C) Nebular hypothesis
- D) Plate tectonic theory

Explanation

The most popular argument regarding the origin of the universe is the Big Bang Theory. It is also called expanding universe hypothesis. Edwin Hubble who provided the evidence that the universe is expanding, was called, 'the Big Bang Theory'.

13. _____ is called as cluster of many stars

- A) Nebula
- B) Constellation
- C) Solar system
- D) Galaxy**

Explanation

A galaxy is a system of billions of stars, stellar remnants, interstellar gas, dust, and dark matter which are attached due to gravitational attraction

14. Consider the following statements, find out the incorrect one

- 1. The word galaxy is derived from the Latin word Galaxias
- 2. It means literally "milky", a reference to the Milky Way

- A) 1 only**
- B) 2 only
- C) Both 1 & 2
- D) Neither 1 nor 2

Explanation

The word galaxy is derived from the Greek word Galaxias, literally "milky", a reference to the Milky Way. Our solar system presents in Milky Way galaxy.

15. Consider the following statements about big bang theory, find the correct statements

- 1. The explosion started 13.75 billion years ago
- 2. Within an hour it started swelling from small size to its current size.
- 3. Matter from the universe was thrown out with great force in all directions
- 4. From this matter, many groups of stars were formed which we call 'galaxies'

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

Explanation

According to big bang theory, the universe was formed 13.75 billion years ago. Like a rapidly expanding balloon, it swelled from a size smaller than an electron to nearly its current size within a fraction of a second. Matter from the universe was thrown out with great force in all directions and started expanding outwards. From this matter, many groups of stars were formed which we call 'galaxies'

16. _____ Galaxy has a central concentration of stars known as the 'bulge'.

- A) Elliptical galaxy
- B) Irregular galaxy
- C) Spiral galaxy**
- D) Spherical galaxy

Explanation

Spiral Galaxies consists of a flat and rotating disk of stars, gases and dust. It has a central concentration of stars known as the 'bulge'.

17. Match the following

- | | |
|----------------------|-----------------------|
| 1. Elliptical galaxy | - a. Milky Way |
| 2. Irregular galaxy | - b. Messier 89 |
| 3. Spiral galaxy | - c. Magellanic Cloud |

1 2 3

- A) b c a**
- B) a b c
- C) c a b
- D) b a c

Explanation

Messier 89 galaxy is an elliptical galaxy. Large Magellanic Cloud is an example of irregular galaxy. The Milky Way is spiral galaxies.

18. Andromeda is an example of

- A) Elliptical galaxy
- B) Irregular galaxy

- C) **Spiral galaxy**
- D) Spherical galaxy

Explanation

Spiral Galaxies consists of a flat and rotating disk of stars, gases and dust. It has a central concentration of stars known as the 'bulge'. The Milky Way and the Andromeda are spiral galaxies.

19. _____ Galaxy contains older stars with fewer gases

- A) **Elliptical galaxy**
- B) Irregular galaxy
- C) Spiral galaxy
- D) Spherical galaxy

Explanation

Elliptical Galaxies contains older stars with fewer gases. Messier89 galaxy is an elliptical galaxy.

20. Consider the following statements about irregular galaxy and find the correct statement

- A) **Irregular Galaxies are youthful galaxies**
- B) It contains lesser amount of dust and gases.
- C) These gases can make them very light
- D) Andromeda is an example of irregular galaxy.

Explanation

Irregular Galaxies are youthful galaxies with more dust and gases. This can make them very bright. Large Magellanic Cloud is an example of irregular galaxy.

21. Initially, the universe was saturated only by _____?

- A) Atoms
- B) Light
- C) Stars
- D) **Energy**

Explanation

Initially, the universe was saturated only by energy. Some of this energy set into particles, which assembled into light atoms like hydrogen and helium. These atoms grouped first into galaxies, then stars and all the other elements.

22. _____% of the substances in the universe cannot be seen?

- A) **96 %**
- B) 94%

- C) 95%
- D) 98%

Explanation

The stars, planets and galaxies that can be detected make up only 4 % of the universe, according to astronomers. The other 96 % of the substances in the universe cannot be seen or easily understandable

23. Consider the following statements find the correct answer

- a) Gravitational lensing confirmed the age of the universe and the strength of dark energy.
 - b) Dark energy is responsible for the accelerating expansion of the universe
- A) a only
 - B) b only
 - C) **Both a and b**
 - D) Neither a nor b

Explanation

The new measurement technique called gravitational lensing confirmed the age of the universe and the strength of dark energy. Dark energy is responsible for the accelerating expansion of the universe. Scientists used gravitational lensing to measure the distances light traveled from a bright, active galaxy to the earth and some details of its expansion.

24. Saul Perlmutter, Brian Schmidt and Adam Riess won the Nobel Prize in Physics for

- 1. The explosion of universe before billion years ago
- 2. **The universe is just expanding and picking up speed.**
- 3. Gravitational force of the universe
- 4. The universe is spherical shape

Explanation

Three scientists, Saul Perlmutter, Brian Schmidt and Adam Riess won the Nobel Prize in Physics (2011) for their discovery that the universe is just expanding and picking up speed.

25. Match the following

- | | |
|---------------------|------------------------------|
| a) Constellation | - 1. Nearest star to sun |
| b) Sirius | - 2. Nearest star to earth |
| c) Sun | - 3. Group of stars |
| d) Proxima centauri | - 4. Brightest star than sun |

- A) **3, 4, 2, 1**
- B) 1, 2, 3, 4
- C) 3, 4, 1, 2

D) 4, 3, 2, 1

Explanation

The nearest star to the earth is sun. The brightest star than sun is Sirius. Proxima centauri is the nearest star to the sun. Constellation is called as group of stars forms a particular shape in the sky.

26. Consider the following statements about star and choose the incorrect answer

1. A star is an astronomical object which has does not have its own light and heat
2. A star changes it's form during its lifetime as neutron star, black hole, dwarf star, red giant star

A) 1 only

B) 2 only

C) Both 1 & 2

D) Neither 1 nor 2

Explanation

A star is an astronomical object which has does not have its own light and heat. A star changes its form during its lifetime as neutron star, black hole, dwarf star, red giant star.

27. What is IAU stands for

A) International Astrophysical Unit

B) **International Astronomical Unit**

C) International Astrological Unit

D) International Aeronautical Unit

Explanation

International Astronomical Unit adopted official constellation boundaries that defined 88 constellations

28. Consider the following statements and choose the correct answer

1. Constellation is called as group of stars forms a particular shape in the sky.
2. International Astronomical Unit adopted official constellation boundaries that defined 88 constellations
3. Ptolemy in his book almagest listed 48 constellations

A) 1, 2

B) 2, 3

C) 3, 1

D) **All the above**

Explanation

Constellation is called as group of stars forms a particular shape in the sky. International Astronomical Unit adopted official constellation boundaries that defined 88 constellations.

29. Almagest is a book by

- A) Ptolemy
- B) Hubble
- C) Lemaitre
- D) Immanuel

Explanation

Earlier, Ptolemy in his book mentioned about 48 constellation.

30. Consider the following statements choose the incorrect answer

- 1. Ursa Major is a constellation that can be seen in the northern hemisphere and part of the southern hemisphere.
 - 2. Ursa Major means Great Bear in Greek.
- A) 1 only
 - B) 2 only
 - C) Both 1 & 2
 - D) Neither 1 nor 2

Explanation

Ursa Major is a constellation that can be seen in the northern hemisphere and part of the southern hemisphere. Ursa Major means Great Bear in Latin.

CONSTELLATIONS



31. Consider the following statements and choose the incorrect answer

- 1. A solar system consists of a star at the center and the eight planets
 - 2. These planets revolve around the sun in fixed elliptical paths known as 'orbits'.
- A) 1 only

- B) 2 only
- C) Both 1 & 2
- D) **Neither 1 nor 2**

Explanation

A solar system consists of a star at the center and the eight planets, moons, asteroids comets and meteoroids that revolve it. The eight planets, namely the Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune, revolve around the sun in fixed elliptical paths known as 'orbits'.

32. Most stars host their own _____?

- A) **Planets**
- B) Satellites
- C) Galaxy
- D) None of the above

Explanation

Most of stars host their own planets. So there are billions of other solar systems in the Milky Way galaxy alone.

33. If there are three or more stars in our solar system it is called as

- A) **Binary star system**
- B) Tertiary star system
- C) Multi star system
- D) Neutron star system

Explanation

Solar systems can also have more than one star. These are called binary star systems if there are two stars or multi-star systems if there are three or more stars.

34. Choose the incorrect answer

- 1. Our solar system is located in an inner spiral arm of the vast Milky Way galaxy.
 - 2. Our solar system orbits the center of the Milky Way Galaxy at about 848,000 km/h.
- A) 1 only
 - B) 2 only
 - C) **Both 1 & 2**
 - D) Neither 1 nor 2

Explanation

Our solar system is located in an outer spiral arm of the vast Milky Way galaxy. Our solar system orbits the center of the Milky Way Galaxy at about 828,000 km/h.

35. Choose the correct answer

1. Our solar system take 230 million years to complete one orbit around the galactic center.
2. The solar system have been formed about 3.6 billion years ago

- A) 1 only
B) 2 only
C) Both 1 & 2
D) Neither 1 nor 2

Explanation

Our solar system takes about 230 million years to complete one orbit around the galactic center. The solar system is believed to have been formed about 4.6 billion years ago

36. Kuiper Belt that lies past which planets orbit?

- A) Pluto
B) Neptune
C) Uranus
D) Saturn

Explanation

The solar system is believed to have been formed about 4.6 billion years ago. The solar system also includes the Kuiper Belt that lies past Neptune's orbit. This is a sparsely occupied ring of icy bodies.

37. Consider the below statements about Kuiper belt and find the incorrect one

1. Kuiper Belt that lies past Neptune's orbit.
2. This is a sparsely occupied ring of icy bodies.
3. This is almost all smaller than the proto star Pluto.

- A) 1 only
B) 3 only
C) All the above
D) None of the above

Explanation

Kuiper Belt that lies past Neptune's orbit. This is a sparsely occupied ring of icy bodies. This is almost all smaller than the dwarf planet Pluto.

38. Asteroid belt is located between

- A) Mars & Jupiter
B) Mars & Venus
C) Jupiter & Saturn
D) Mars & Earth

Explanation

Asteroid belt is located between mars and Jupiter.

39. Beyond the fringes of the Kuiper belt _____ is presented?

- A) Dwarf star
- B) Nebula
- C) **Oort cloud**
- D) Proto star

Explanation

Beyond the fringes of the Kuiper belt, oort cloud is existing. This giant spherical shell surrounds our solar system. It has never been directly observed, but its existence is predicted based on mathematical models and observations of comets that likely originate there.

40. Find out the correct statement about oort cloud

- 1. The Oort cloud is made up of gaseous particles of space debris.
 - 2. It is orbiting our Sun as far as 1.4 light years away.
 - 3. This shell of material is thick, extending from 1,000 astronomical units to 100,000 astronomical units.
- A) 1, 2
 - B) 2,3
 - C) All the above
 - D) **None of the above**

Explanation

The Oort cloud is made up of icy pieces of space debris. It is orbiting our Sun as far as 1.6 light years away. This shell of material is thick, extending from 5,000 astronomical units to 100,000 astronomical units.

41. Consider the following statements about astronomical unit, choose the correct answer

- 1. One astronomical unit (AU) is the distance from the Sun to moon
 - 2. One astronomical unit is 150 million kilometer
- A) 1 only
 - B) **2 only**
 - C) Both 1& 2
 - D) Neither 1 nor 2

Explanation

One astronomical unit (AU) is the distance from the Sun to Earth, or about 150 million kilometer

42. There are how many known natural satellites in our solar system?

- A) 153
- B) 163**
- C) 160
- D) 162

Explanation

There are more than 163 known natural satellites in our solar system and several more awaiting confirmation of discovery

43. Find the planets without satellites

- A) Venus and Pluto
- B) Mercury and Venus**
- C) Mercury and Uranus
- D) Venus and Mars

Explanation

Of the eight planets, Mercury and Venus are the only planets with no satellites

44. Which of the following planet has more satellites

- A) Earth
- B) Mars
- C) Jupiter**
- D) Pluto

Explanation

Of the eight planets, Mercury and Venus are the only planets with no satellites while the Jupiter and Saturn have the highest number of satellites in our solar system

45. The Sun is at the center of our solar system which is a _____ star,

- A) Proto star
- B) Neutron star
- C) Red giant star
- D) Dwarf star**

Explanation

The Sun is at the center of our solar system. It is a yellow dwarf star, with a hot ball of glowing gases. Its gravity holds the solar system together and it keeps everything from the biggest planets to the smallest particles of debris in its orbit.

46. Electric currents in the ____ will generate a magnetic field with the help of solar wind.

- A) Sun
- B) Earth
- C) Kuiper belt
- D) Jupiter

Explanation

Electric currents in the Sun generate a magnetic field that is carried out through the solar system by the solar wind.

47. Consider the following statements about sun and find the incorrect answer

1. The Sun is made up of about 70.6% hydrogen and 27.4% helium.
 2. There are three main layers in the Sun's interior: the core, the radiative zone, and the conductive zone
- A) 1 only
 - B) 2 only
 - C) Both 1 & 2
 - D) Neither 1 nor 2

Explanation

The Sun is made up of about 70.6% hydrogen and 27.4% helium by mass. The Sun's enormous mass is held together by gravitational attraction, producing immense pressure and temperature at its core. There are three main layers in the Sun's interior: the core, the radiative zone, and the convective zone

48. ____ is the hottest region of sun

- A) Core
- B) Mantle
- C) Radiative zone
- D) Convective zone

Explanation

Sun's interior: the core, the radiative zone, and the convective zone. The core is at the center. It is the hottest region, of the sun.

49. Energy is carried outward through radiative layer is carried by _____?

- A) Proton
- B) Electron
- C) Photon

D) Neutron

Explanation

The radiative (or radiation) zone. Its name is derived from the way energy is carried outward through this layer, carried by photons as thermal radiation

50. Find out the correct statement about sun

- A) Core is the hottest region the nuclear fission reaction takes place to give the sun power
- B) The third and final region of the sun is named the conductive zone.
- C) Conductive zone is named after the dominant mode of energy flow in this layer.
- D) **Sun is a yellow dwarf star, with a hot ball of glowing gases.**

Explanation

The core is at the centre. It is the hottest region, where the nuclear fusion reaction to give the sun power. Moving outward next come the radiative (or radiation) zone. Its name is derived from the way energy is carried outward through this layer, carried by photons as thermal radiation. The third and final region of the solar interior is named the convective (or convection) zone. It is also named after the dominant mode of energy flow in this layer.

51. The boundary between the Sun's interior and the solar atmosphere is called?

- A) Chromosphere
- B) Corona
- C) **Photosphere**
- D) Atmosphere

Explanation

The boundary between the Sun's interior and the solar atmosphere is called the photosphere. It is what we see as the visible 'surface' of the Sun.

52. Consider the following statements:

Assertion (A): The lower region of the solar atmosphere is called the chromosphere.

Reason (R): it appears bright red when viewed during a solar eclipse

Codes

- A) **Both (A) and (R) are true and (R) is the correct explanation of (A)**
- B) Both (A) and (R) are true but (R) is not the correct explanation of (A)
- C) (A) is true but (R) is false
- D) (A) is false but (R) is true

Explanation

The lower region of the solar atmosphere is called the chromosphere. Its name is derived from the Greek word Chroma (meaning color), for it appears bright red when viewed during a solar eclipse.

53. Consider the following statements choose the incorrect answer

- A) **A thin transition region separates the chromospheres from the vast photosphere above.**
- B) The uppermost portion of the Sun's atmosphere is called the corona
- C) Corona is much hotter than the Sun's surface (photosphere)
- D) The upper corona gradually turns into the solar wind

Explanation

A thin transition region, where temperature rises sharply, separates the chromospheres from the vast corona above. The uppermost portion of the Sun's atmosphere is called the corona, and is surprisingly much hotter than the Sun's surface (photosphere). The upper corona gradually turns into solar wind. Solar wind is a flow of plasma that moves outward through our solar system into interstellar space.

54. The Sun has totally how many regions?

- A) **Six**
- B) Seven
- C) Five
- D) Three

Explanation

The Sun has six regions: the core, the radioactive zone, and the convective zone in the interior; the photosphere; the chromospheres and corona.

55. Surface temperature of sun is_____?

- A) 4000-5000
- B) 4500-5500
- C) **5500-6000**
- D) 6000-6500

Explanation

The temperature of the sun's surface is about 5,500 to 6,000 degrees Celsius.

56. Consider the following statements find the incorrect answer

- 1. The core temperature of sun is 13 million degrees Celsius
- 2. Thermonuclear fission is a process in which atoms combine to form larger atoms

- A) **1 only**
- B) 2 only
- C) Both 1 & 2

D) Neither 1 nor 2

Explanation

At the core, the temperature is about 15 million degrees Celsius, which is sufficient to sustain thermonuclear fusion. This is a process in which atoms combine to form larger atoms and in this process, released, staggering amounts of energy.

57. Consider the following statements find the incorrect answer

1. In the Sun's core, hydrogen atoms fuse to make helium.
 2. In the Sun's core, helium atoms fuse to make hydrogen.
- A. 1 only
B. 2 only
C. Both 1 & 2
D. Neither 1 nor 2

Explanation

In the Sun's core, hydrogen atoms fuse to make helium.

58. What is the radius of sun?

- A) 665,508 kilometers
B) 685,505 kilometers
C) **695,508 kilometers**
D) 659,508 kilometers

Explanation

The sun has a radius of 695,508 kilometers.

59. The Sun's volume would need _____ many Earths to fill it.

- A) 1.1 million
B) 1.2 million
C) **1.3 million**
D) 1.4 million

Explanation

The Sun's volume would need 1.3 million Earths to fill it. The sun has a radius of 695,508 kilometers. It is far more massive than earth and 332946 Earths equal to the mass of the Sun.

60. Consider the following statements find the correct answer

1. Venus is hotter than Mercury
2. Venus has an atmosphere which is thicker

- A) 1 only
- B) 2 only
- C) Both 1& 2**
- D) Neither 1 nor 2

Explanation

Venus is hotter than Mercury because Venus has an atmosphere which is thicker and made almost entirely of carbon dioxide.

61. Consider the following statements find the incorrect answer

- A) The Milky Way has four main spiral arms
- B) The arms of sun are Norma and Cygnus arm, Sagittarius, Aquila-Crux, and Perseus.**
- C) The Sun is located in a minor arm, the Sagittarius arm.
- D) The Sun orbits the center of the Milky Way Galaxy.

Explanation

The Milky Way has four main spiral arms: the Norma and Cygnus arm, Sagittarius, Scutum-Crux, and Perseus. The Sun is located in a minor arm, the Sagittarius arm. From there, the Sun orbits the center of the Milky Way Galaxy, bringing the planets, asteroids, comets and other objects along with it

62. Consider the following statements find the correct answer

- 1. Velocity of solar system 848,000 kilometers per hour.
 - 2. Solar system takes 2300 million years to make one complete orbit around the Milky Way.
- A) 1 only
 - B) 2 only
 - C) Both 1& 2
 - D) Neither 1 nor 2**

Explanation

Our solar system is moving with an average velocity of 828,000 kilometers per hour. It takes about 230 million years to make one complete orbit around the Milky Way.

63. Consider the following statements find the incorrect answer

- A) The Sun's spin has an axial tilt of 7.25 degrees
- B) The Sun is not a solid body, different parts of the Sun rotate at different rates.
- C) At the equator, the Sun spins around once about every 52 days**
- D) At its poles the Sun rotates once on its axis every 36 Earth days.

Explanation

The Sun's spin has an axial tilt of 7.25 degrees with respect to the plane of the planets' orbits. Since the Sun is not a solid body, different parts of the Sun rotate at different rates. At the equator, the Sun spins around once about every 25 days, but at its poles the Sun rotates once on its axis every 36 Earth day.

64. The Sun alone accounts for ____% of the mass of the entire solar system.

- A) 99.7
- B) 99.8**
- C) 99.5
- D) 99.9

Explanation

The Sun alone accounts for 99.8% of the mass of the entire solar system.

65. Scientists predict that in how many years the Sun will last & shrinks down?

- A) 5.6 billion
- B) 6.5 billion**
- C) 4.5 billion
- D) 6.8 billion

Explanation

Scientists predict that the Sun is a little less than halfway through its lifetime and will last another 6.5 billion years before it shrinks down to be a white dwarf. Like all stars, the Sun will someday run out of energy. When the Sun starts to die, it will swell so big that it will engulf Mercury and Venus and maybe even Earth.

66. Consider the following statements find the incorrect answer

1. The word planet in Persian means 'wanderer'.
2. Planet is the celestial body which have light or heat of its own

- A) 1 only
- B) 2 only
- C) Both 1& 2**
- D) Neither 1 nor 2

Explanation

The word planet in Greek means 'wanderer'. Planet is the celestial body which does not have light or heat of its own

67. A planet should possess which of the following qualities?

- 1) It should orbit around the sun.
- 2) It should not be a satellite of any planet

- 3) Due to its own mass and self-gravity, it should get a spherical shape and
- 4) Any other celestial body should not cross in its orbit

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

68. Find the incorrectly matched pair

- A) Inner planet - Mercury
- B) **Gaseous planet - Venus**
- C) Rocky planet - Mars
- D) Giant planet - Jupiter

Explanation

The planets are classified in order of their distance from the sun and based on their characteristics. They are:

- 1. The inner planets or terrestrial planets or rocky planets -Mercury, Venus, Earth and Mars are called inner or terrestrial planets.
- 2. The outer planets or gaseous planets or giant planets - Jupiter, Saturn, Uranus and Neptune are called outer or gaseous planets

69. Find out the terrestrial planets

- A) **Mars and Venus**
- B) Mars and Jupiter
- C) Earth and Saturn
- D) Earth and Uranus

Explanation

The inner planets or terrestrial planets or rocky planets -Mercury, Venus, Earth and Mars are called inner or terrestrial planets. The outer planets or gaseous planets or giant planets - Jupiter, Saturn, Uranus and Neptune are called outer or gaseous planets

70. Each planet spins on its own axis is called?

- A) Revolution
- B) **Rotation**
- C) Orbit
- D) Earth day

Explanation

Each planet spins on its own axis. This movement is called rotation. One rotation makes one 'planet day'. The planets moving around the sun is called revolution or a 'planet-year'

71. Find the correct statements about Mercury

1. Mercury is the nearest planet to the sun
2. It is the smallest planet in the solar system.
3. It has many satellites.
4. It rotates on its own axis in 54.65 earth days.
5. It takes 88 Earth days to complete one revolution around the sun

- A) 1, 2, 3
B) 1, 4, 5
C) 1, 2, 5
D) 1, 4, 3

Explanation

Mercury is the nearest planet to the sun and it is the smallest planet in the solar system. It does not have any satellite. It rotates on its own axis in 58.65 earth days while it takes 88 Earth days to complete one revolution around the sun

72. Which is the second hottest planet in solar system

- A) Earth
B) **Mercury**
C) Venus
D) Neptune

Explanation

Mercury is 0.4 astronomical units away from the Sun. Mercury is the second hottest planet though it is nearest to the sun.

73. The sunlight takes _____minutes to travel from the Sun to Mercury?

- A) 2.3 minutes
B) 3.6 minutes
C) **3.2 minutes**
D) 2.2 minutes

74. Consider the following statements:

Assertion (A): Venus is called as Earth's sister

Reason (R): Its size and mass is similar as that of our Earth

Codes

A) Both (A) and (R) are true and (R) is the correct explanation of (A)

- B) (B) Both (A) and (R) are true but (R) is not the correct explanation of (A)
C) (A) is true but (R) is false
D) (A) is false but (R) is true

Explanation

'Venus' is the second nearest planet to the sun. It is also called as 'Earth's Sister' planet due to its similar size and mass as that of our Earth.

75. Uranus and which planet have the 'backwards' rotation?

- A) Neptune
B) Pluto
C) **Venus**
D) Saturn

Explanation

Venus rotates clockwise i.e. east to west direction on its own axis. The rotation and orbit of the Venus are unusual in several ways. Venus is one of just two planets that rotate from east to west. Only Venus and Uranus have this 'backwards' rotation.

76. Find the correct statement about Venus

1. It is popularly known as "Morning star and Evening star".
2. It completes one rotation in 243 Earth days.
3. The Venus takes 224.7 Earth days to complete one revolution around the sun,
4. It has no natural satellites

- A) 1, 2, 4
B) **1, 2, 3, 4**
C) 1, 4, 2
D) None of the above

Explanation

It completes one rotation in 243 Earth days which is the longest day of any planet in our solar system. The Venus takes 224.7 Earth days to complete one revolution around the sun, and it has no natural satellites. Venus is 0.7 astronomical units away from the sun. The sunlight takes 6 minutes to travel from the sun to Venus. It is popularly known as "Morning star and Evening star" It is seen in the east sky before sunrise (dawn) in the morning and in the west sky after the sunset (twilight).

77. Which is the hottest planet in the solar system

- A) **Venus**
B) Mercury
C) Earth
D) Neptune

Explanation

Venus is the hottest planet in the solar system than mercury because of presence of atmosphere and it experiences a mean surface temperature of 462 degrees Celsius.

78. ____ is the fifth largest planet in the solar system

- A) Saturn
- B) Jupiter
- C) Mars
- D) **Earth**

Explanation

Earth is the third nearest planet to the sun. It is the fifth largest planet in the solar system. The Earth's orbit lies between the orbits of Venus and Mars.

79. Find out the correct statements

1. The Earth takes 23 hours 56 minutes and 4 seconds for the earth to complete one revolution
2. The Earth takes 365.25 days to complete one rotation around the Sun.

- A) 1 only
- B) 2 only
- C) Both 1 & 2
- D) **Neither 1 nor 2**

Explanation

The Earth takes 23 hours 56 minutes and 4 seconds for the earth to complete one rotation on its own axis. The Earth takes 365.25 days to complete one revolution around the Sun.

80. ____ is the densest planet in the solar system?

- A) Saturn
- B) Jupiter
- C) Mars
- D) **Earth**

Explanation

Earth's surface temperature varies from – 88 to 58 degree Celsius and it is the densest planet in the solar system. The Earth is a unique planet because of its distance from the sun, its motions, atmosphere with oxygen, presence of water and moderate temperature. The earth is neither too close nor too far from the sun. It is the only known planet to support life.

81. Consider the following statements:

Assertion (A): Earth is called as blue planet

Reason (R): Because of presence of thick blue atmosphere

Codes:

- A) Both (A) and (R) are true and (R) is the correct explanation of (A)
- B) Both (A) and (R) are true but (R) is not the correct explanation of (A)
- C) (A) is true but (R) is false**
- D) (A) is false but (R) is true

Explanation

Earth is the only known planet to support life. It is also known as the 'Blue Planet' because of the presence of water. Earth has only one natural satellite called the Moon.

82. The sun light takes _____minutes to reach the earth?

- A. 8.1 minutes
- B. 8.2 minutes**
- C. 7.3 minutes
- D. 8.4 minutes

83. Consider the following statements:

Assertion (A): Mars is described as the "Red planet".

Reason (R): It is reddish in Color due to the presence of Aluminum oxide on its surface

Codes:

- A) Both (A) and (R) are true and (R) is the correct explanation of (A)
- B) Both (A) and (R) are true but (R) is not the correct explanation of (A)
- C) (A) is true but (R) is false**
- D) (A) is false but (R) is true

Explanation

Mars is also described as the "Red planet". It is reddish in color due to the presence of iron oxide on its surface

84. Consider the following statements about mars and find the incorrect answer

1. Mars is the fourth nearest planet to the sun and
2. It is the third smallest planet in the Solar system.
3. It is also described as the "Red planet".
4. The landmass of Mars and Mercury are very similar.

- A) 2, 4
- B) 4, 2, 3
- C) 2, 3
- D) None of the above

Explanation

Mars is the fourth nearest planet to the sun and it is the second smallest planet in the Solar system. It is also described as the "Red planet". It is reddish in color due to the presence of iron oxide on its surface. The landmass of Mars and Earth are very similar.

85. Except the Earth which planet has is the most hospitable to life

- A) Jupiter
- B) **Mars**
- C) Saturn
- D) Mercury

Explanation

With the exception of the Earth, Mars probably is the most hospitable to life. This planet has seasons, polar ice caps, volcanoes, canyons and weather. Mars has two satellites namely Phobos and Deimos. It takes 24 hours and 37 minute to complete one rotation on its axis and its takes 687 days to complete one revolution around the Sun

86. Find the incorrect statement about Jupiter

- A) Jupiter is the largest planet in the solar system.
- B) It is made primarily of gases and is known as 'Giant Gas planet'.
- C) **It takes 7 hours 55 minutes to complete one rotation on its axis**
- D) It takes 11.86 years to complete one revolution

Explanation

Jupiter is the largest planet in the solar system. It is made primarily of gases and is therefore known as 'Giant Gas planet'. It takes 9 hours 55 minutes to complete one rotation on its axis and it takes 11.86 years to complete one revolution

87. Which planet has shortest day in our solar system

- A) Mars
- B) Venus
- C) **Jupiter**
- D) Mercury

Explanation

Jupiter has the shortest day in the solar system. Jupiter has a faint ring system around it. They are mostly comprised of dust particles.

88. Consider the following statements about Jupiter and find the correct answer

1. Jupiter has 63 confirmed satellites orbiting the planet.
 2. Ganymede, the satellite of Jupiter.
- A. 1 only
B. **2 only**
C. Both 1 & 2
D. Neither 1 nor 2

Explanation

Jupiter has 67 confirmed satellites orbiting the planet. Ganymede, the satellite of Jupiter.

89. Which is the largest natural satellite in the solar system

- A) Phobos
B) Deimos
C) Europa
D) **Ganymede**

Explanation

Ganymede, the satellite of Jupiter, is the largest natural satellite in the solar system (even bigger than the planet Mercury).

90. Deimos is the satellite of which planet

- A) **Mars**
B) Jupiter
C) Saturn
D) Neptune

91. Which planet's average density is less than water?

- A) Mars
B) Jupiter
C) **Saturn**
D) Neptune

Explanation

Saturn is the only planet in our solar system whose average density is less than water.

92. Consider the following statements about Saturn and find the correct answer

- A) Saturn is the seventh planet from the sun.
- B) The largest planet in the solar system.
- C) **Saturn is called as the Ringed Planet.**
- D) These rings are mostly made from the chunks of ice and carbon dust.

Explanation

Saturn is the sixth planet from the sun and the second largest planet in the solar system. Saturn is called as the Ringed Planet. It is because of large, beautiful and extensive ring systems that encircle the planet. These rings are mostly made from the chunks of ice and carbonaceous dust.

93. Consider the following statements about Saturn and find the incorrect answer

1. The Saturn has 35 rings.
2. It has 63 confirmed natural satellites.
3. The Saturn takes 10 hours 34 minutes to complete one revolution.
4. It takes 29.4 years to complete one rotation around the sun.

- A) 1, 2
- B) 1, 3, 4
- C) **All the above**
- D) None of the above

Explanation

The Saturn has 30 rings and 53 confirmed natural satellites. The Saturn takes 10 hours 34 minutes to complete one rotation on its axis and it takes 29.4 years to complete one revolution around the sun.

94. Which of the following planet does not have rings around it?

- A) **Mars**
- B) Jupiter
- C) Saturn
- D) Uranus

Explanation

All the gaseous planets in our solar system has ring around it.

95. Which of the following is not a major gas in Uranus

- A) Hydrogen
- B) Helium
- C) Methane

D) Nitrogen**Explanation**

Hydrogen, helium and methane are the major gases of its atmosphere. It is very cold due to its great distance from the sun.

96. Consider the following statements about Uranus

Assertion (A): Uranus is named after the ancient Greek god of the sky. It has a dense atmosphere primarily consisting of methane.

Reason (R): It has a dense atmosphere primarily consisting of methane.

Codes:

- A) Both (A) and (R) are true and (R) is the correct explanation of (A)
- B) Both (A) and (R) are true but (R) is not the correct explanation of (A)
- C) (A) is true but (R) is false
- D) (A) is false but (R) is true

Explanation

Uranus is named after the ancient Greek god of the sky. It has a dense atmosphere primarily consisting of methane, which lends it a bluish-green appearance.

97. Consider the following statements about Uranus and find the incorrect answer

1. Uranus is visible to the naked eye.
2. Like Venus, Uranus also rotates on its axis from west to east.
3. Uranus is inclined on its axis at an angle of 96 degrees.
4. Uranus also has rings and twenty-six satellites.

- A) 1, 2
- B) 1, 3, 4
- C) 2, 3, 4
- D) 1, 2, 3, 4

Explanation

Uranus is the seventh planet from the sun and it is not visible to the naked eye. Like Venus, Uranus also rotates on its axis from east to west. Uranus is inclined on its axis at an angle of 98 degrees. The planet is almost lying on its side as it goes around the sun. The sunlight, thus, is received mostly in the polar areas. Uranus also has rings and twenty-seven satellites

98. Which planet in our solar system's windiest planet?

- A) Mars
- B) Jupiter
- C) Saturn

D) Neptune

99. Consider the following statements about Neptune find the incorrect one

1. It is the second coldest planet in the Solar System.
2. It is the farthest planet from the Sun.

- A) 1 only**
B) 2 only
C) Both 1 & 2
D) Neither 1 nor 2

Explanation

It is the coldest planet in the Solar System because it is the farthest planet from the Sun.

100. Find the correct statement about Neptune

- A) It is the eighth planet from the sun.**
B) It takes 18 hours to complete one rotation.
C) It takes nearly 155 years to revolve around the sun.
D) It has 15 natural satellites, it has 3 rings

Explanation

Neptune is the eighth planet from the sun. It takes 16 hours to complete one rotation on its own axis and it takes nearly 165 years to revolve around the sun. It has 13 natural satellites and 5 rings

101. _____ was the first planet located through mathematical calculations?

- A) Saturn
B) Pluto
C) Neptune
D) Uranus

102. North Pole of which planet experiences 21 years of night time in winter?

- A) Saturn
B) Pluto
C) Neptune
D) Uranus

Explanation

North Pole of the Uranus experiences 21 years of night time in winter, 21 years of daytime in summer and 42 years of day and night in the spring and fall.

103. The planet which does not have its own axis for rotation is called

- A) Comets
- B) Dwarf planets**
- C) Ringed planets
- D) Jovian planets

Explanation

Dwarf planets are tiny planets in our solar system. Any celestial body orbiting around the sun, weighing for the gravity and nearly be round in shape is called 'Dwarf Planet'

104. Consider the following statements and find the incorrect answer

1. Dwarf Planet should be a satellite of any planet.
2. Pluto is officially demoted in 2005 from its ninth position as a planet.

- A) 1 only
- B) 2 only
- C) Both 1& 2**
- D) Neither 1 nor 2

Explanation

As Pluto has not cleared the neighborhood around its orbit, it is officially demoted in 2006 from its ninth position as a planet. 'Dwarf Planet' should not be a satellite of any planet.

105. Which is not the dwarf planet?

- A) Ceres
- B) Heumea
- C) Makemake
- D) Io**

Explanation

Dwarf planets are five in number Ceres, Pluto, Heumea, Makemake and Eris. Io is the satellite of Jupiter.

106. Consider the following statements find the incorrect one

1. The word 'Satellite' means companion.
2. The moon was the only known satellite in the Solar System until 1910.

- A) 1 only
- B) 2 only**
- C) Both 1& 2
- D) Neither 1 nor 2

Explanation

The word 'Satellite' means companion. The moon was the only known satellite in the Solar System until 1610. Today, there are 163 known satellites in the Solar System.

107. Find out the correct statement about satellite

- A) The satellites move around a planet from east to west.
- B) They do have own light and reflect it
- C) **They have no atmosphere and water.**
- D) Mercury has only one satellite.

Explanation

The satellites move around a planet from West to East. They do not have own light, but reflect the light of the Sun. They have no atmosphere and water. Mercury does not have any satellite.

108. Which planet can float on water?

- A) **Saturn**
- B) Pluto
- C) Neptune
- D) Uranus

Explanation

Saturn can float on water because its density is less than water.

109. The moon is the_____ largest natural satellite in the solar system?

- A) Fourth
- B) Second
- C) **Fifth**
- D) Sixth

110. Consider the following statements:

Assertion (A): he observers on the earth could see only one side of the moon.

Reason (R): The moon is located at a distance of 8, 84,401 km from the earth.

Codes:

- A) Both (A) and (R) are true and (R) is the correct explanation of (A)
- B) **Both (A) and (R) are true but (R) is not the correct explanation of (A)**
- C) (A) is true but (R) is false
- D) (A) is false but (R) is true

Explanation

The moon is located at a distance of 8, 84,401 km from the earth. The moon revolves around the earth. The moon takes 27 days and 7 hours and 43 minutes for both its rotation and revolution around the earth. Hence, the observers on the earth could see only one side of the moon.

111. Consider the following statements about moon and find the correct statement

1. The moon was likely to be formed after a Mars sized body collided with Earth.
 2. The light which is reflected by the Moon will reach the Earth in just one and a quarter seconds.
- A) 1 only
B) 2 only
C) **Both 1 & 2**
D) Neither 1 nor 2

Explanation

The moon was likely to be formed after a Mars sized body collided with Earth. There are many craters, high and steep mountains of different sizes which cast shadows on the Moon's surface. The light which is reflected by the Moon will reach the Earth in just one and a quarter seconds.

112. Consider the following statements about Apollo 2 find the correct answer

1. Apollo 11 was the first manned mission to land on the Moon
 2. It was sent by NASA.
 3. Two American Astronauts Neil Armstrong and Edwin Aldrin set foot on the moon's surface.
- A. 1, 2
B. 1, 3
C. 2, 3
D. **1, 2, 3**

Explanation

Apollo 11 was the first manned mission to land on the Moon sent by NASA. Two American Astronauts Neil Armstrong and Edwin Aldrin set foot on the moon's surface on the waterless Sea of Tranquility on 20th July, 1969. They stayed there for 21 hours 38 minutes and 21 seconds on the moon. Michael Collins piloted Apollo 11.

113. Man weighs _____ times less on the moon than the earth?

- A) 5 times
B) **6 times**
C) 7 times
D) 8 times

Explanation

The moon is smaller than the earth, it has 1/6 of the gravitational pull of the earth. So, man weighs 6 times less on the moon than the earth.

114. Consider the following statements find the incorrect one

1. Asteroids are larger rocky celestial bodies that revolve around the Sun.
2. Asteroid are also called 'Major Planets'.
3. Larger asteroids are called Comets.

- A) 3 only
B) 2, 3
C) 1, 3
D) 1, 2, 3

Explanation

Asteroids are small rocky celestial bodies that revolve around the Sun, like other planets. They are also called 'Minor Planets'. There are lots of asteroids in the solar system. Larger asteroids are called Planetoid

115. Asteroids are found in between the planets of_____?

- A. Mars and Jupiter
B. Mars and Earth
C. Mars and Venus
D. Jupiter and Saturn

Explanation

Asteroids are found in between the planets Mars and Jupiter. This belt is known as 'Asteroid belt'. The diameter of the asteroids varies from 100 km to a size of a pebble. The asteroids may be the fragments of a planet exploded in the past or some parts of comets.

116. Consider the following statements about comets and find the correct answer.

- A) The word Comet is derived from the Latin word Aster Kometes.
B) **Comets means 'Long Haired Star'.**
C) They are made up of small rocks
D) They revolve around the Sun in regular orbit.

Explanation

The word Comet is derived from the Greek word Aster Kometes meaning 'Long Haired Star'. They are made up of small ice particles and meteoric fragments. They revolve around the Sun. But their orbits are irregular.

117. Consider the statements find the incorrect statement

1. Comets get very close to the sun is called Aphelion.

2. Comets go far away from the sun is called Perihelion.

- A) 1 only
- B) 2 only
- C) Both 1 & 2
- D) Neither 1 nor 2

Explanation

Comets get very close to the sun is called perihelion. Comets go far away from the sun is called aphelion.

COMETS



118. The best known Comet, Halley's Comet, appears once in every ____ years?

- A) 75
- B) 74
- C) 73
- D) 76

Explanation

The best known Comet, Halley's Comet, appears once in every 76 years. The Halley's Comet was seen last in 1986 and it will be seen again on 28th July 2061.

119. Consider the following statements and find the correct answer

- 1. It is the only moon with clouds and atmosphere.
- 2. It is Saturn's largest moon
- 3. It is the second largest moon in the solar system

- A) Triton
- B) Tethys
- C) Titania

D) Titan**Explanation**

Titan – only moon with clouds and atmosphere. Titan is Saturn's largest moon and the second largest (after Ganymede of Jupiter) in the solar system

120. Titan was discovered by?

- A) William Hubble
- B) W. C. Pant
- C) **Christiaan Huygens**
- D) Anaximander

Explanation

Titan was discovered by Dutch astronomer Christiaan Huygens in 1655. The Huygens lander probe sent to the moon aboard NASA's Cassini spacecraft by the European Space Agency is named in his honor. Huygens was the first human-built object to land on Titan's surface.

121. Find out incorrect statement about titan

- 1. Diameter of titan is 5,150 kilometers.
 - 2. Surface temperature of titan is -179 degrees Celsius.
 - 3. Surface pressure is slightly higher than Earth's pressure.
- A. 1, 2
 - B. 2, 3
 - C. All the above
 - D. **None of the above**

Explanation

Titan's surface diameter: 5,150 kilometers, about half the size of Earth and almost as large as Mars. Surface temperature: - 179 degrees Celsius, which makes water as hard as rocks and allows methane to be found in its liquid form. Surface pressure: Slightly higher than Earth's pressure.

122. Consider the following statements find the incorrect one

- A) Earth's pressure at sea level is 1 bars
- B) Titan's pressure at sea level is 1.6 bars.
- C) Titan's mass is composed mainly of water.
- D) **Titan has magnetic field.**

Explanation

Earth's pressure at sea level is 1 bar while Titan's is 1.6 bars. Orbital period of titan is 15,945 days. Titan's mass is composed mainly of water in the form of ice and rocky material. Titan has no magnetic field.

123. 'Shooting stars' are the removed pieces of rocks mainly from____?

- A) Kuiper belt
- B) Asteroid belt**
- C) Oort cloud
- D) Nebula

Explanation

Asteroid is a bright streak of light flashing seen often in the sky during night for a few seconds. They are called as 'shooting stars'. They are the removed pieces of rocks mainly from the Asteroid belt.

124. Consider the following statements, find the correct statements

- 1. Asteroids are called Meteors before they enter into our atmosphere.
- 2. After entering into our atmosphere they are called as Meteorites
- 3. The large unburned pieces of rocks that fall on the earth are called Meteoroids.

- A) 1, 2
- B) 1, 3
- C) All the above
- D) None of the above**

Explanation

Asteroids are called Meteoroids before they enter into our atmosphere. They enter into the atmosphere with great speed. But most of them are burnt when they enter into the atmosphere. After entering into our atmosphere they are called as Meteors. Some pieces do not burn fully and they fall on the earth and make craters. The large unburned pieces of rocks that fall on the earth are called Meteorites.

125. Consider the following statements find the incorrect one

- 1. Meteoroids are called as 'shooting stars'.
- 2. Meteor crater in Southern Arizona.
- 3. Lake Lonar in Buldhana District

- A) 2 only
- B) 3, 1
- C) 2, 3, 1
- D) 1, 2**

Explanation

Examples for Meteorite Fall: Meteor crater in Northern Arizona and Lake Lonar in Buldhana District of Maharashtra in India were created by meteor impacts.

126. Which of the following is propounded by Anaximander

- A) **Cylindrical earth was surrounded by celestial sphere.**
- B) Spherical earth was surrounded by celestial sphere.
- C) Elliptical earth was surrounded by celestial sphere.
- D) Spiral earth was surrounded by celestial sphere

Explanation

Anaximander (600 B.C) proposed that cylindrical earth was surrounded by celestial sphere.

127. Who said that the Earth was a sphere, which was considered the most harmonious geometric shape

- A) Anaximander
- B) Aristotle
- C) **Pythagoras**
- D) Hubble

Explanation

Pythagoras (582-507 B.C.) believed that the Earth was a sphere, which was considered the most harmonious geometric shape.

128. Consider the following statements find the correct answer

- 1. Aristotle described observations that supported the theory that the Earth was a sphere.
 - 2. Eratosthenes estimated size of earth
- A) 1 only
 - B) 2 only
 - C) **Both 1 & 2**
 - D) Neither 1 nor 2

Explanation

Aristotle (384-322 B.C.) described observations that supported the theory that the Earth was a sphere. These included the fact that the shadow of the moon is circular in lunar eclipses and constellations were higher in the sky as one traveled south. Eratosthenes (275-195 BCE) estimated size of earth from observations that the elevation of the sun varied with position on the Earth's surface in Egypt.

129. Which observations of the following suggested that the Earth is a sphere?

- 1) Mountain peaks lit by the Sun after sunset.
- 2) Ships disappear below the horizon as they sail across ocean.

- 3) The moon looks like an arc.
- 4) The Earth casts an elliptical shadow during lunar eclipses.

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

Explanation

Observations of the following suggested that the Earth is a sphere. 1. Mountain peaks lit by the Sun after sunset. 2. Ships disappear below the horizon as they sail across ocean. 3. The moon looks like a disc. 4. The Earth casts a circular shadow during lunar eclipses.

130. Consider the following statements and find the incorrect one

- 1. The bulge at the equator is caused by the centrifugal force of the Earth's rotation.
 - 2. The gravitational pull of the earth is the weaker at the flattened poles & stronger towards the equator
- A) 1 only
 - B) 2 only**
 - C) Both 1 & 2
 - D) Neither 1 nor 2

Explanation

The Earth is an oblate spheroid, bulged at the equator and flattened at the poles. It is called 'Geoid' meaning the earth is earth-shaped. The bulge at the equator is caused by the centrifugal force of the Earth's rotation. The gravitational pull of the earth is the strongest at the flattened poles and it is weaker towards the equator

131. What will happen if the Earth would not have been tilted on its axis?

- A) Same duration of days and nights**
- B) Days will be longer than nights
- C) Nights will be longer than days
- D) No changes

Explanation

The Sun's gravitational pull differs in force at the poles. The North Pole points in the same direction to the North Star when it revolves about the Sun. If the Earth would not have been tilted on its axis, the days and nights would have been of same duration always.

132. What is galactic movement?

- A) Planets revolving in an orbit around the sun

- B) Satellites revolving in an orbit around their planets
- C) Movement of solar system in an orbit around the center of the Milky Way Galaxy**
- D) None of the above

Explanation

Galactic movement: This is the movement of the earth with the sun and the rest of the solar system in an orbit around the center of the Milky Way Galaxy. This, however, has little effect upon the changing environment of the earth.

133. Find out the correct statement

- A) The spinning of the earth around its axis is called the revolution of the earth.
- B) The axis is the imaginary line passing through the center of the earth**
- C) The earth completes one revolution in 23 hours, 56 minutes and 4.09 seconds.
- D) It rotates in an westward direction opposite to the apparent movement of the sun

Explanation

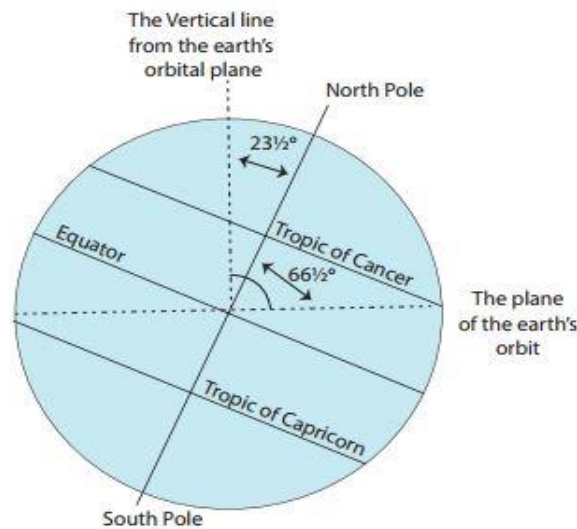
The spinning of the earth around its axis is called the rotation of the earth. The axis is the imaginary line passing through the center of the earth. The earth completes one rotation in 23 hours, 56 minutes and 4.09 seconds. It rotates in an eastward direction opposite to the apparent movement of the sun

134. Find out the incorrect statements

- 1. The earth's axis is inclined at an angle of $66\frac{1}{2}$ degree to the orbital plane.
 - 2. The earth's axis is tilted at an angle of $23\frac{1}{2}$ degree from a perpendicular to the spherical plane
- A) 1 only
 - B) 2 only**
 - C) Both 1& 2
 - D) Neither 1 nor 2

Explanation

The earth's axis is inclined at an angle of $66\frac{1}{2}$ degree to the orbital plane as it moves around the sun. We can say, the earth's axis is tilted at an angle of $23\frac{1}{2}$ degree from a perpendicular to the elliptic plane.



135. Consider the following statements about earth and find the incorrect statement

- A) The velocity of earth's rotation varies.
- B) Rotational velocity at the poles is nearly zero.
- C) The greatest velocity of the rotation is found at the equator.
- D) **The velocity of rotation at the equator is 1,170 km per hour.**

Explanation

The velocity of rotation at the equator is 1,670 km per hour.

136. The rotation of the earth causes which the following effects?

- 1) Alternate occurrence of day and night
 - 2) Difference in time between different places on the earth
 - 3) Deflection of the winds
 - 4) The sun, moon, planets and stars appear to rise in the east and set in the west.
- A) 1, 2, 3
 - B) 1, 3, 4
 - C) 1, 2, 4
 - D) **1, 2, 3, 4**

Explanation

Effects of earth's rotation: The rotation of the earth causes the following effects:

1. The apparent rising and setting of the sun is actually caused by the earth's rotation which results in the alternate occurrence of day and night everywhere on the earth's surface.

2. Rotation of the earth is also responsible for the difference in time between different places on the earth.
3. When you observe through a moving train, trees, houses and fields on the other side of the track appear to move in the direction opposite to that of the speeding train. The apparent movement of the sun and the other heavenly bodies in relation to the rotating earth is similar. As the earth rotates from west to east, the sun, moon, planets and stars appear to rise in the east and set in the west.
4. Rotation causes the working of the Coriolis force which results in the deflection of the winds and the ocean currents from their normal path.
5. Tide is caused by the rotation of the earth apart from the gravitational pull of the sun and the moon.

137. Difference of ___minutes for every degree of longitude that passes the sun?

- A) **4 minutes**
- B) 3 minutes
- C) 4.6 minutes
- D) 5 minutes

Explanation

Rotation of the earth is also responsible for the difference in time between different places on the earth. A 24 hour period divided by 360 degrees gives a difference of 4 minutes for every degree of longitude that passes the sun. The hour (60 minutes) is thus $\frac{1}{24}$ of a day.

138. The line around the earth separating the light and dark is known as?

- A) Latitude
- B) Longitude
- C) Illumination
- D) **Circle of illumination**

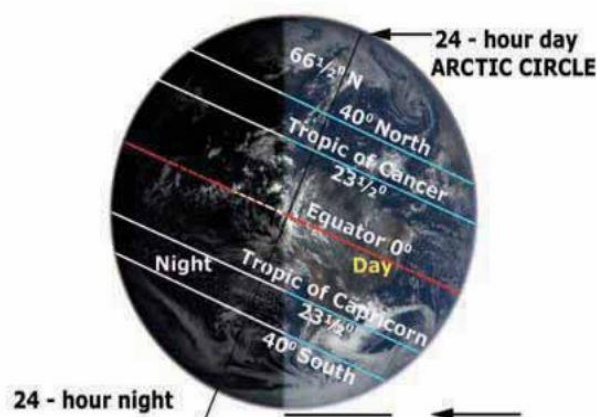


Figure 2.11 Circle of Illumination

Explanation

The line around the earth separating the light and dark is known as the circle of illumination. It passes through the poles and allows the entire earth to have an equal amount of time during the daylight and night time hours. This line can be seen from space, and the exact location of the line is dependent on the various seasons.

139. Consider the following statements

Assertion (A): About January 3rd the earth is closest to the sun and it is said to be at Perihelion

Reason (R): 'Peri' means close to and Helios means sun

Codes:

- A) Both (A) and (R) are true and (R) is the correct explanation of (A)
- B) Both (A) and (R) are true but (R) is not the correct explanation of (A)
- C) (A) is true but (R) is false
- D) (A) is false but (R) is true

Explanation

The distance of the earth from sun varies time to time due to the elliptical shape of the orbit. About January 3rd the earth is closest to the sun and it is said to be at Perihelion ('peri' means close to and Helios means sun). At Perihelion, the distance is 147 million km.

140. Consider the following statements, choose the correct statements

1. Around July 6th the earth is farthest from the sun and it is said to be at Aphelion
2. At Aphelion the distance of the earth is 156 million km away from the sun.

- A) 1 only
- B) 2 only
- C) Both 1 & 2

D) Neither 1 nor 2

Explanation

Around July 4th the earth is farthest from the sun and it is said to be at Aphelion (Ap means away and Helios means sun). At Aphelion the distance of the earth is 152 million km away from the sun.

141. Find the correct statements

- 1) The movement of the earth in its orbit around the sun in a clockwise direction.
- 2) The period taken by the earth for one revolution around the sun is 365 days 365¼ days.
- 3) The speed of the revolution is 107000 km per hour.
- 4) The speed is 40 km per second.

- A) 1, 2
B) 1, 3
C) 2, 3
D) 4, 1

Explanation

The movement of the earth in its orbit around the sun in an anti-clockwise direction, that is, from west to east is called revolution of the earth. The period taken by the earth to complete one revolution around the sun is 365 days and 6 hours (5 hours, 48 minutes and 45 seconds) or 365¼ days. The speed of the revolution is 107000 km per hour. The speed is 30 km per second. The bullet from a gun travels with a speed of 9 km per second.

142. Which is known as "Morning star and Evening star"?

- A) Mars
B) **Venus**
C) Jupiter
D) Saturn

143. Consider the following statements:

Assertion (A): The month of February which has 29 days in a leap year.

Reason (R): To keep our yearly calendars consistent with our orbit around the Sun once in, every four years we add one day.

Codes:

- A) **Both (A) and (R) are true and (R) is the correct explanation of (A)**
B) Both (A) and (R) are true but (R) is not the correct explanation of (A)
C) (A) is true but (R) is false
D) (A) is false but (R) is true

Explanation

Earth takes 365.25 days to complete one trip around the Sun. That extra quarter of a day presents a challenge to our calendar system, which has one year as 365 days. To keep our yearly calendars consistent with our orbit around the Sun once in, every four years we add one day. The extra day added to is called a leap day, and the year the extra day is added to is called a leap year. The extra day is added to the month of February which has 29 days in a leap year.

144. What are the effects of revolution of the earth?

- 1) Cycle of seasons
- 2) Variation in length of days and nights
- 3) Variation in distribution of solar energy over the earth and the temperature zones

- A. 1 only
B. 1, 2
C. 2, 3
D. 1, 2, 3

145. Consider the following statements find the incorrect answer

1. The seasons are caused due to the earth's revolution
2. The seasons are caused due to the tilt of its axis in the same direction throughout the year.

- A) 1 only
B) 2 only
C) Both 1 & 2
D) Neither 1 nor 2

Explanation

The seasons are caused due to the combined effect of the earth's revolution and the tilt of its axis in the same direction throughout the year. In general, spring, summer, autumn and winter are the four seasons.

146. Find out the correct statement

- A) The sun appears to follow a yearly pattern of eastward and southward motion in the sky, known as the 'apparent movement of the sun
- B) The sun appears to follow a yearly pattern of northward and westward motion in the sky, known as the 'apparent movement of the sun
- C) **The sun appears to follow a yearly pattern of northward and southward motion in the sky, known as the 'apparent movement of the sun**
- D) The sun appears to follow a yearly pattern of northward and westward motion in the sky, known as the 'apparent movement of the sun

Explanation

The sun appears to follow a yearly pattern of northward and southward motion in the sky, known as the 'apparent movement of the sun'. It gives an impression that the sun is continuously swinging north and south of the equator. Actually it is the earth that is moving around the sun on its tilted axis. It varies when observed on a daily and monthly basis, at different times of the year.

147. On which day the sun rises precisely in the east and sets exactly in the west?

- 1) 21 March
 - 2) 22 September
 - 3) 24 March
 - 4) 23 September
- A) 1, 2
B) 2, 3
C) 1, 4
D) 2, 4

Explanation

The earth that is moving around the sun on its tilted axis. It varies when observed on a daily and monthly basis, at different times of the year. On 21 March and 23 September the sun rises precisely in the east and sets exactly in the west.

148. Match the following

- | | |
|---------------------|-------------------|
| a) Autumnal equinox | - 1. June 21 |
| b) Summer solstice | - 2. March 21 |
| c) Spring equinox | - 3. December 22 |
| d) Winter solstice | - 4. September 23 |

A) 4, 1, 2, 3

B) 4, 1, 3, 2

C) 1, 4, 2, 3

D) 1, 4, 3, 2

Explanation

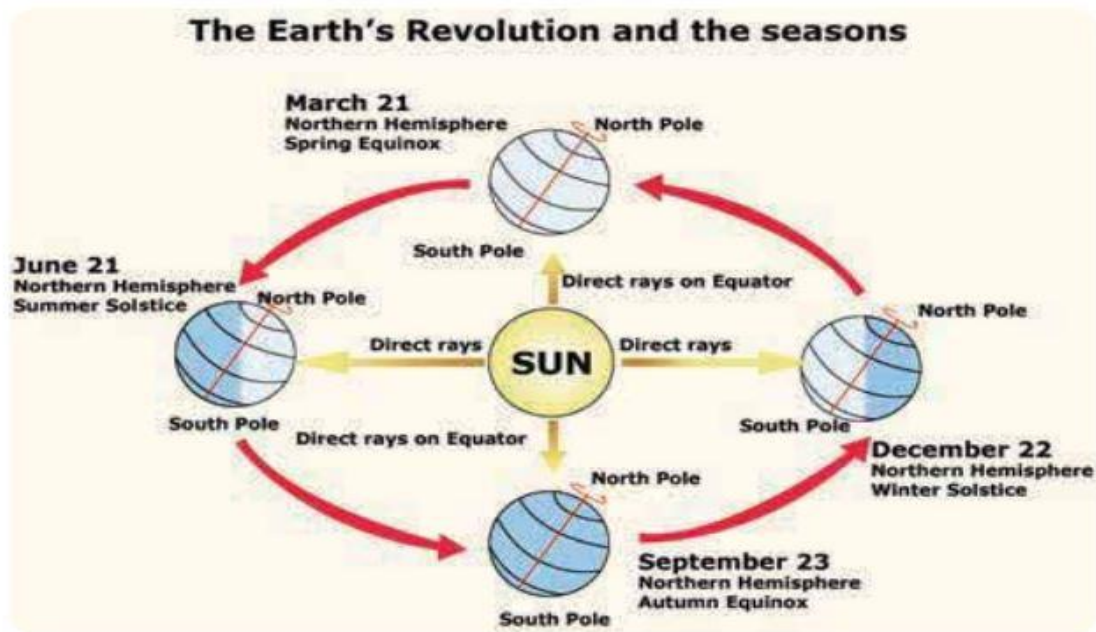


Figure 2.12 Earth's revolution and the seasons

149. Consider the following statements about summer solstice, find correct answer

- A) The North Pole is inclined or tilted towards the sun.
- B) The North Pole experiences complete dark for 24 hours.
- C) The rays of the sun fall vertically at the tropic of Capricorn ($23\frac{1}{2}^{\circ}$ S).
- D) The day 22 June is known as summer solstice

Explanation

The North Pole is inclined or tilted towards the sun. It, therefore, experiences complete light for 24 hours. The South Pole is tilted away from the sun so it is in complete darkness for 24 hours. The rays of the sun fall vertically at the tropic of cancer ($23\frac{1}{2}^{\circ}$ N). In the Northern hemisphere, the days are longer than the nights. It is summer in the northern hemisphere and winter in the southern hemisphere. The day 21 June is known as summer solstice.

150. Consider the following statements about winter solstice, find incorrect answer

- 1) The southern hemisphere has winter.
- 2) The northern hemisphere has summer.
- 3) The day 22 December is winter solstice
- 4) In the northern hemisphere the nights are longer than the days at this time

A) 3, 4

B) 1, 2

C) 2, 3

D) 1, 4

Explanation

The South Pole is inclined towards the sun and the North Pole is away from it. The rays of the sun fall vertically at the tropic of Capricorn ($23\frac{1}{2}^{\circ}$ S). The greater part of the southern hemisphere gets the direct rays of the sun so the days are long and the nights are short here. In the northern hemisphere the nights are longer than the days at this time. The southern hemisphere has summer. The northern hemisphere has winter. This day (22 December), when the sun's rays fall vertically on the Tropic of Capricorn, is known as winter solstice.

151. Consider the statements, find the correct answer

- 1) Neither pole is inclined towards the sun.
- 2) The rays of the sun fall vertically on the equator.
- 3) All the places have equal days and nights as both the poles receive the rays of the sun.
- 4) It is spring in the northern hemisphere and autumn in the southern hemisphere.
- 5) This day is known as spring equinox.

- A) 22 March
B) **21 March**
C) 22 September
D) 23 September

Explanation

Neither pole is inclined towards the sun. The rays of the sun fall vertically on the equator. All the places have equal days and nights as both the poles receive the rays of the sun. It is spring in the northern hemisphere and autumn in the southern hemisphere. This day (21 March) is known as spring equinox.

152. Consider the statements, find the correct answer

- 1) The rays of the sun fall vertically on the equator.
- 2) All the places have equal days and nights.
- 3) It is autumn in the northern hemisphere and spring in the southern hemisphere.
- 4) This day (23 September) when sun's rays fall vertically on the equator

- A) Summer solstice
B) Winter solstice
C) **Autumn equinox**
D) Spring equinox

Explanation

Position of the earth on 23 September. Neither pole of the earth is inclined towards the sun. The rays of the sun fall vertically on the equator. All the places have equal days and nights. It is autumn in the northern hemisphere and spring in the southern hemisphere. This day (23 September) when sun's rays fall vertically on the equator, is known as autumnal equinox.

153. Which is a complete or partial obscuration of light from a celestial body?

- A) Comets
- B) Clouds
- C) **Eclipse**
- D) Galaxy

Explanation

An eclipse is a complete or partial obscuration of light from a celestial body and it passes through the shadow of another celestial body.

154. Find out the correct statement about solar eclipse?

- 1. It occurs on New Moon days, when the sun is between the Moon and the Earth.
 - 2. It can be seen from all part of the world
- A) 1 only
 - B) 2 only
 - C) Both 1& 2
 - D) **Neither 1 nor 2**

Explanation

It occurs on New Moon days, when the moon is between the Sun and the Earth. Thus it obscures a part of the Sun viewed from the Earth, but only from a small area of the world.

155. Find out the incorrectly matched pair

- 1. Partial solar eclipse - Moon partially covers the disc of the sun.
 - 2. Annular solar eclipse - Moon passes centrally across the solar disc.
 - 3. Total solar eclipse - Moon's shadow is short enough to cover the whole sun.
- A) 1, 2
 - B) 2, 3
 - C) All the above
 - D) **None of the above**

Explanation

A partial solar eclipse happens when the moon partially covers the disc of the sun. An annular solar eclipse occurs when the moon passes centrally across the solar disc. During a total solar eclipse, the moon's shadow is short enough to cover the whole sun.

156. Which is called as diamond ring?

- A) Partial solar eclipse
- B) Annular solar eclipse
- C) **Total solar eclipse**

D) None of the above

Explanation

During a total solar eclipse, the moon's shadow is short enough to cover the whole sun. The outer regions still glow and look bright as a ring. Such a phenomenon is called Diamond Ring.

157. Find out the correct statement about lunar eclipse

1. It last for a full day
2. The earth's shadow obscures the moon as viewed from the earth

- A) 1 only
B) **2 only**
C) Both 1 & 2
D) Neither 1 nor 2

Explanation

The earth's shadow obscures the moon as viewed from the earth. Lunar eclipse can be seen from anywhere on the night side of the Earth. It lasts for a few hours due to the smaller size of the moon.

158. Find the incorrect statement

1. Partial lunar eclipse is when only a part of the moon's surface is obscured by earth's umbra.
2. Total lunar eclipse occurs happens when the moon travels through the faint penumbral portion of the earth's shadow.
3. Penumbral lunar eclipse occurs when the earth umbra obscures the entire the moon's surface

- A) 1 only
B) **2, 3 only**
C) 1, 2, 3
D) None of the above

Explanation

A partial lunar eclipse can be observed when only a part of the moon's surface is obscured by earth's umbra. A penumbral lunar eclipse happens when the moon travels through the faint penumbral portion of the earth's shadow. A total lunar eclipse occurs when the earth umbra obscures the entire the moon's surface. Lunar eclipse can be seen from anywhere on the night side of the Earth. It lasts for a few hours due to the smaller size of the moon.

159. When lunar eclipse occurs?

- A) **Full moon day**
B) New moon day
C) Partial moon day
D) All the above

Explanation

It occurs on a Full Moon position when the earth is between the sun and the moon.

160. Find out the correct statement

1. Spinning of the earth from east to west on its axis is called rotation
 2. Movement of the earth around the sun in spherical orbit is called as revolution
- A) 1 only
B) 2 only
C) Both 1 & 2
D) Neither 1 nor 2

Explanation**Difference between Rotation and Revolution**

Rotation	Revolution
Spinning of the earth from west to east on its axis.	Movement of the earth around the sun in its elliptical orbit.
It takes 24 hours to complete a rotation (or a day)	It takes 365¼ days to complete one revolution (or a year)
It is known as the daily or diurnal movement.	It is known as the annual movement of the earth.
Rotation causes days and nights to alternate, tides, deflection of winds and ocean currents and also gives the earth its shape.	Revolution results in the varying lengths of day and night, changes in the altitude of the midday sun and change of seasons.

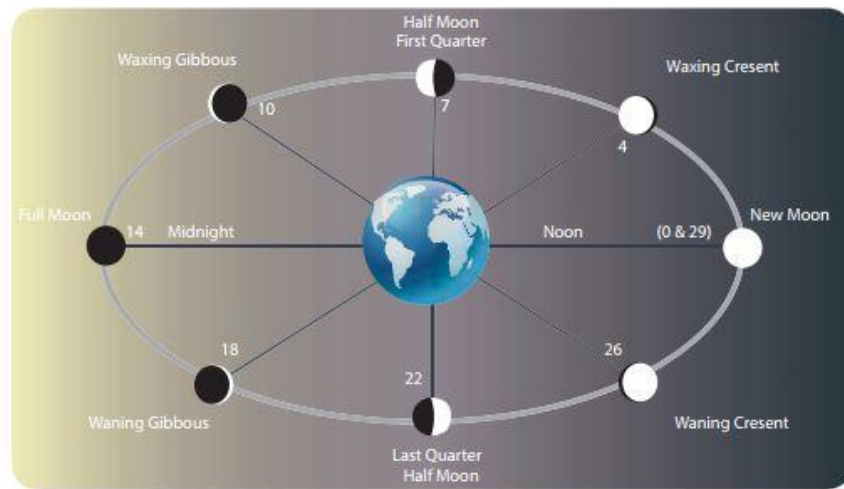
161. Find out the incorrect statement about phases of the moon

- 1) Phases of the moon start from the 'New Moon' every month.
 - 2) Only a part of the Moon is seen bright called 'Gibbous', which develops into the 'first quarter'.
 - 3) With the increasing brightness gibbous turns into three quarters known as 'Crescent'.
 - 4) Then crescent becomes a 'Full Moon'.
- A) 1, 2, 3
B) 2, 3, 4
C) 1, 3, 4
D) 1, 2, 4

Explanation

The changing angles between the earth, the sun and the moon determine the phases of the moon. Phases of the moon start from the 'New Moon' every month. Then, only a part of the Moon is seen bright called 'Crescent', which develops into the 'first quarter'. With the increasing brightness it turns into three quarters known as 'Gibbous' and then it becomes a 'Full Moon'. These stages are

the waxing moon. After the full moon, the moon starts waning or receding through the stages of Gibbous, last quarter, crescent, and finally becomes invisible as dark New Moon.



162. The seasonal variations in the duration of daylight are maximum at?

- A) Equator
- B) Polar**
- C) Tropic of cancer
- D) Tropic of Capricorn

Explanation

As one moves away from the equator, the seasonal variations in the duration of daylight increase. The seasonal variations in the duration of daylight are maximum at the polar region.

163. Which of the following is the effects of the spherical shape of the earth?

1. Variation in the amount of solar radiation received
 2. Difference in the angle of the sun's rays striking different parts of the earth.
- A) 1 only
 - B) 2 only
 - C) Both 1 and 2**
 - D) Neither 1 nor 2

164. Find out the incorrect statements

1. As we move north or south of latitudes, the sun's rays strike at increasing angles.
 2. On any given day only the places located at particular latitude receive perpendicular rays from the sun
- A) 1 only
 - B) 2 only
 - C) Both 1 & 2**

D) Neither 1 nor 2

Explanation

If the earth were a flat surface, oriented at right angle to the sun, all the places on the earth would have received the same amount of radiation. But the earth is spherical/ geoid. Hence the sunrays do not heat the higher latitudes of the earth as much as the tropics. On any given day only the places located at particular latitude receive vertical rays from the sun. As we move north or south of this location, the sun's rays strike at decreasing angles. The yearly fluctuations in the angle of the sun's rays and the length of the days change with the continual change of the earth's position in its orbit around the sun at an inclination of $66\frac{1}{2}$ to the orbital plane.

165. The world has been divided into _____ distinct heat zones?

- A) 3
- B) 4
- C) 2
- D) 5

Explanation

As a result, the world has been divided into three distinct heat zones or temperature zones. They are the Torrid Zone, Temperate Zone and Frigid Zone. The spherical shape of the earth along with its movement around the sun causes differences in the angles at which the sun rays fall on the earth's surface. This causes a difference in the distribution of heat on the earth's surface.

166. Find out the incorrect statement

1. In 15th century, the people started using pendulum clock.
 2. Later chronometer was invented in 1664.
- A) 1 only
 - B) 2 only
 - C) Both 1 & 2
 - D) Neither 1 nor 2

Explanation

People during the medieval period were using sundials and water clocks to observe the Sun's meridian passing at noon. In 17th century, the people started using pendulum clock which did not show accurate time while travelling in the sea. Later chronometer was invented in 1764. Chronometer measures time accurately and the mariners widely used this during the 19th century. But in many towns and cities clocks were set based on sunset and sunrise.

167. Earth was divided into how many time zones?

- A) 22
- B) 24**
- C) 23
- D) 25

Explanation

The world time zone was formed, relating longitude and the rotation of the earth. The Prime Meridian is the center of time zone extending from $7\frac{1}{2}^{\circ}\text{W}$ and $7\frac{1}{2}^{\circ}\text{E}$ longitudes. The 24 hour time zone system had been developed so that all the time zones should be referred with respect to Greenwich Mean Time. Earth was divided into 24 time zones, each one zone for one hour of the day. It is because earth rotates 15° of longitude in one hour (360° divided by 24 hours). The time when solar noon occurs at the Prime Meridian is fixed as noon for all places between $7\frac{1}{2}^{\circ}\text{E}$ and $7\frac{1}{2}^{\circ}\text{W}$.

168. 'The Daylight Saving Time' (DST) countries are?

- 1. Europe
 - 2. North America
 - 3. Australia
 - 4. South America
 - 5. Asia
- A) 1, 2, 3, 4, 5
 - B) 2, 3, 4, 5**
 - C) 1, 3, 4, 5
 - D) 1, 2, 3, 4

Explanation

In the mid latitude countries of Europe, North America, Australia and South America, the day time are longer in summer than the night. In spite of employing daylight duration, the clocks are adjusted 1 hour forward in spring and 1 hour backward in autumn. This time is generally known as 'the Daylight Saving Time' (DST).

169. Find the correct statements about latitudes

- 1. Latitude lines are drawn east – west.
 - 2. They measure the location in northern and southern hemisphere.
 - 3. The line starts at the equator and measure distance from 0 degrees to 90 degrees north and also 0 degrees to 90 degrees south.
 - 4. They also become shorter farther away from the equator.
- A) 1, 2, 3
 - B) 1, 2, 3, 4**
 - C) 1, 3, 4

D) 2, 3, 4

170. Find the incorrect statement about longitude

- A) Longitude lines are drawn north – south.
- B) They measure eastern and western hemisphere.
- C) **They start at the Prime Meridian and measure from 0 degrees to 180 degrees south and 180 degrees north**
- D) Unlike lines of latitude, these lines are fairly equal in length.

Explanation

They start at the Prime Meridian (or 0 degree) and measure from 0 degrees to 180 degrees east and 180 degrees west. Unlike lines of latitude, these lines are fairly equal in length.

171. The intersection of 0 degree latitude and 0 degree longitude at

- A) **Atlantic ocean**
- B) Arctic ocean
- C) Pacific ocean
- D) Southern ocean

Explanation

Unlike lines of latitude, these lines are fairly equal in length. The origin of this spherical coordinate system is at 0 degree latitude and 0 degree longitude. This spot can be found in the Atlantic Ocean just south west of Africa. Also, the two lines connect at 180 degrees or at the International Date Line. This too helps to determining different time zones of the world.

172. International Date Line is placed exactly on?

- A) Atlantic ocean
- B) Arctic ocean
- C) **Pacific ocean**
- D) Southern ocean

173. Third quarter of moon's phase is known as_____?

- A. **Gibbous**
- B. Penumbra
- C. Crescent
- D. None of the above

174. Find out the incorrect statement

- 1. An electric storm on the sun and releases huge amounts of gases is called solar flare
- 2. The explosive born of a star is called super nova

- A) 1 only
 B) 2 only
 C) Both 1 & 2
 D) Neither 1 nor 2

Explanation

Solar flare is a magnetic storm on the sun and releases huge amounts of gases. It can cause 'Sun quakes'. Super Nova is the explosive death of a star. It obtains brightness of 100 million suns for a short time.

175. Match the following

Planet Rotation

1. Mars - a) 9 hours 55 minutes
2. Jupiter - b) 24 hours 37 minutes
3. Saturn - c) 16 hours
4. Neptune - d) 10 hours 34 minutes

- A) b, a, d, c
 B) b, a, c, d
 C) a, b, c, d
 D) a, d, d, c

Explanation

Table 2.1 Distance of the planets from the sun

Name Of The Planet	Mercury	Venus	Earth	Mars	Jupiter	Saturn	Uranus	Neptune
Diameter (km)	4,879	12,104	12,756	6,794	1,42,984	1,20,536	51,118	49,528
Density (kg/m ³)	5,427	5,243	5,514	3,933	1,326	687	1,271	1,638
Rotation Period (hours)	1,407.6	-5,832.5	23.9	24.6	9.9	10.7	-17.2	16.1
Length of Day (hours)	4,222.6	2,802	24	24.7	9.9	10.7	17.2	16.1
The Average distance from the sun(10 ⁶ km)	57.9	108.2	149.6	227.9	778.6	1,433.5	2,872.5	4,495.1
Orbital Period (days)	88	224.7	365.3	687	4331	10,747	30,589	59,800
Number of Satellites	0	0	1	2	67	53	27	13