## 7th Science Lesson 13 Questions in English

## 13] Universe And Space

1. According to Stephen hawking understanding which of these was his simple goal?
a) Time
b) Space
c) Stars
**d) Universe**
**Explanation**
"My goal is simple. It is a complete understanding of the universe, why it is as it is and why it exists at all."—Stephen Hawking

2. Which of this study is referred to as astronomy?
**a) Study of the Universe**
b) Study of the Stars
c) Study of the Atmosphere
d) Study of the Galaxies
**Explanation**
The field of study of the universe is called astronomy.

3. Assertion (A): The Universe is defined as the totality of everything exists or known to exist.
Reasoning(R): It is possible to measure the observable universe.
**a) Both A and R is True and R is the correct explanation of A.**
b) Both A and R is True but R is not the correct explanation of A.
c) A is True but R is False.
d) Both A and R is False.
**Explanation**
Universe is commonly defined as the totality of everything that exists or is known to exist. Even though the spatial size of the entire universe is still unknown, it is possible to measure the observable universe.

4. Which of these constitutes the universe?
a) Planets
b) Meteorites
c) Galaxies
**d) All the above**
**Explanation**
The universe consists of galaxies, planets, stars, meteorites, satellites and all other forms of matter and energy. And it is a world of wonder.

5. In which of these directions the stars tend to rise in earth?
a) West
b) North
**c) East**
d) South
**Explanation**
Sky is a wonder. Sun, Moon, stars all appear to rise in the East and move towards the west giving us an impression that all these objects are going around the Earth.

6. Choose the correct statements.
i) The Sun appears to revolve around the earth once in a day.
ii) The Moon and other planets have their own motions.
iii) The celestial sphere appears to rise in the evening and complete its rotation in a year.
a) i only
b) ii only
c) iii only
**d) All the above**
**Explanation**
The Sun appears to revolve around the Earth once in a day. While the Moon and the planets have their own motions they also appear to revolve around the Earth about once per day. Even the celestial sphere studded with stars appears to rise and set in the evening, and make one complete rotation in a year.

7. What is the perspective of the earth for an earthbound observer?
a) Rotating
b) Revolving
**c) Stationary**
d) None of the above
**Explanation**
The Earth seems to be unmoving from the perspective of an earthbound observer, it feels stationary.

8. In how many days the moon appears like going around the earth?
**a) One day**
b) Fifteen days
c) One month
d) One year
**Explanation**

On a daily basis Moon appears to rise in the east and set in the west. Thus one can say that Moon is going around the Earth with a period of one day.

9. Choose the correct statements.
i) Moon appears to move from west to east every day.
ii) The Moon goes in a circle motion from west to east for about 27 days.
a) i only
**b) ii only**
c) Both i and ii
d) None of the above
**Explanation**
Everyday Moon appears to move from east to west in one day where as it appears to go in a circle from west to east in the background of stars in about 27 days.

10. What is the duration of the actual motion of the celestial sphere in eastward motion?
a) 30 days
b) 15 days
**c) 27 days**
d) 365 days
**Explanation**
Astronomers like Aryabhatta said that Earth is spinning in its axis that is the cause of apparent daily motion from East to West. Whereas the eastward motion of Moon in the celestial sphere with a period of about 27 days was seen as the 'actual' motion of the celestial objects.

11. Which of these is assumed to be in the center of the geocentric model?
**a) Earth**
b) Sun
c) Stars
d) Galaxy
**Explanation**
The geocentric model (also known as geo-centrism), that is a description of the Universe with spherical and spinning Earth at the center and the Sun, Moon, stars, and planets all orbits the Earth emerged in various cultures.

12. Who standardized the geocentric model in 2nd century A.D?
a) Plato
b) Aryabhata
**c) Ptolemy**
d) Galileo
**Explanation**

In Greece the geocentric model was put forth by the Greek philosopher Plato and his disciple Aristotle in 6th century B.C. It was standardized by a Greeco-Roman mathematician Ptolemy in the 2nd Century A.D. A similar model is seen in the Siddhanthic astronomy in India like Aryabhateeyam of Aryabhata.

13. Which of this Sangam literature describes the appearance of moon and its movement?

**a) Purananuru**

b) Silapathikaram

c) Thirukkural

d) Iyngurunooru

**Explanation**

Astronomers in ancient times also observed certain facts. The Purananuru (65) of Sangam literature, the poet Kalathalaiyar singing in appreciation of Cheraman Peruncheralathan says" On the day when the full moon appears, the sunand moon look at each other with their bright light. In the evening time, one sphere hides behind the mountains."

14. On which of this day the Sun and the moon appears to be in opposite sides?

a) New moon day

b) Solstice day

**c) Full moon day**

d) Equinox day

**Explanation**

On the full moon day, when the Sun is setting in the west, precisely at the same time Moon rises at the East. That is both Sun and Moon are in the opposite side.

15. Which of these are used to understand the various phases of the Moon?

**a) Waxing and Waning**

b) Earth revolution

c) Energy from the Sun

d) All the above

**Explanation**

It is probably easier to understand the waxing and waning of Moon in the order of new moon & full moon and then how the first and third quarter moon (half-moon) appear and then the phases in between.

16. Choose the correct statements.

i) The Sun light falls on the whole spherical part of the earth.

ii) Earth spins day and night and different parts of earth appear before the sun.

a) i only

**b) ii only**

c) Both i and ii
d) Neither i nor ii

**Explanation**

Sun is the source of light. Sun light falls on the spherical earth, but only on the side facing Sun. The opposite side of Earth is without sunlight. As the Earth spins day and night follows as different parts of Earth appear before the Sun. That is at all times one half of Earth is illuminated by Sun and one half is in darkness.

17. In which of this position the new moon appears on the Earth?
a) The Sun is in between earth and the moon.
b) The Earth is in between the moon and the sun.
c) The Sun, Earth and the moon in same line.
**d) The Moon is in between the earth and the sun.**

**Explanation**

When the moon is positioned between the earth and sun notice all the illuminated part of Moon is away from Earth. Hence we cannot see any part of the illuminated side of the Moon. Only the dark side of Moon is towards Earth. When the moon is in this position, we have new moon.

18. Choose the Incorrect statements.
i) In the full moon day part of the illuminated moon is towards the earth.
ii) The dark side of the moon is away from the earth in full moon day.
iii) The moon tends to appear in round shape in a full moon day.
**a) i only**
b) ii only
c) iii only
d) All the above

**Explanation**

The moon when it is behind the Earth. Now the portion of the moon illuminated by sun is totally towards Earth. The dark side is away from the Earth. This means the moon will appear to be round in the sky. This is full moon.

19. When the moon will appear as half-moon in earth?
a) Sun facing the moon.
**b) Moon facing the earth**
c) Sun facing the earth.
d) Moon facing the sun.

**Explanation**

When the moon facing Earth half if it illuminated and half is dark side. Thus the moon will appear as half-moon.

20. In which of this period moon is in its third quarter?
a) Waxing
b) Full moon
**c) Waning**
d) New moon
**Explanation**
The half-moon during the waxing period is called as first quarter and the half-moon during the waning period is called as third quarter.

21. Which refers to the phase of less than half illuminated moon?
a) Waning
**b) Crescent**
c) Gibbous
d) Waxing
**Explanation**
The word crescent refers to the phases where the moon is less than half illuminated.

22. Which of the following phase of moon is referred as gibbous?
**a) More than half illuminated moon**
b) Full moon
c) Less than half illuminated
d) Expanding illumination
**Explanation**
The word gibbous refers to phases where the moon is more than half illuminated.

23. Assertion (A): Shrinking or decreasing illumination of the moon is referred as waning.
Reasoning(R): Waxing phase of the moon is referred as growing or expanding illumination.
**a) Both A and R is True and R is the correct explanation of A.**
b) Both A and R is True but R is not the correct explanation of A.
c) A is True but R is False.
d) Both A and R is False.
**Explanation**
In the phases of the moon waxing essentially means “growing” or expanding in illumination and waning means “shrinking” or decreasing in illumination.

24. Which of these planets motion was not known to the ancient astronomers?
a) Mercury
b) Mars
c) Saturn
**d) All the above**

**Explanation**

Moon going around Earth with 27 day period nicely explained its motion. Astronomers in ancient times faced problem in explaining the motion of the then known five planets- Mercury, Venus, Mars, Jupiter and Saturn.

25. Which is known as the retrograde motion of the planets?

**a) Reversal direction of planets.**

b) Revolving direction of the satellites.

c) Rotation of planets around the sun.

d) Reversal direction of planets and its satellites.

**Explanation**

On June 28 a change is seen. From that date the Mars would appear to move west rather than its normal eastward motion. This reversal of direction of planets is called as 'retrograde motion'.

26. Which of this planet will appear brighter in the retrograde motion?

**a) Mars**

b) Jupiter

c) Moon

d) Saturn

**Explanation**

Usually Jupiter is brighter than Mars, however around the period of retrograde motion the Mars was much bright than other times; even brighter than Jupiter.

27. Which of these planets never appear in the midnight sky?

a) Moon

b) Mars

**c) Mercury**

d) Jupiter

**Explanation**

Venus and Mercury always appeared very close to Sun and hence never appeared in the midnight sky.

28. Assertion (A): The Jupiter varies in its brightness in the retrograde motion.
Reasoning(R): Jupiter moves in the westward motion in the retrograde motion.

**a) Both A and R is True and R is the correct explanation of A.**

b) Both A and R is True but R is not the correct explanation of A.

c) A is True but R is False.

d) Both A and R is False.

**Explanation**

The brightness of Jupiter also varied again when it exhibited retrograde motion. For example in 2018, Jupiter reversed its direction of motion on March 9, 2018 and again resumed its normal eastward motion on July 11, 2018.

29. Which of these are the drawbacks of the geocentric model?
a) Variations in brightness of planets
b) Retrograde motion of planets
c) Revolving time duration of satellites
**d) Both a and b**
**Explanation**
The simple geocentric model, where planets go around the Earth could not explain why the brightness of the planets changed, and why they reversed their directions. Change in brightness and retrograde motion would be impossible if we assumed that the planets were at the same distance at all times from Earth.

30. Who used the epicycle model to explain the motion of the celestial objects?
**a) Ptolemy**
b) Galileo
c) Kepler
d) Copernicus
**Explanation**
Ptolemy (2nd cent) in Greece Aryabhatta in India and others used the epicycle model to explain the motion of the celestial objects.

31. Who were involved in improving the epicycle model?
a) Neelakanta Somayaji
b) William Herschel
c) Tycho Brahe
**d) Both a and c**
**Explanation**
Their models were improved by generation of astronomers like Tycho Brahe and Neelakanta Somayaji.

32. Assertion (A): The Telescope was invented by Hans Lippershey.
Reasoning(R): Galileo was the first person to use the telescope for studying the sky.
**a) Both A and R is True and R is the correct explanation of A.**
b) Both A and R is True but R is not the correct explanation of A.
c) A is True but R is False.
d) Both A and R is False.
**Explanation**

Telescope was invented by Hans Lippershey but Galileo used it for studying the sky for the first time. The telescope showed more universes were than visible to naked eye.

33. Which of this telescopic observation of planet was made by Galileo?
a) Jupiter
**b) Venus**
c) Mars
d) Mercury
**Explanation**
One of the most startling observations Galileo made was related to telescopic observation of Venus. This convinced him to accept the theory of Sun- heliocentric theory. The Polish Astronomer Nicolas Copernicus that it is not Sun, planets and Stars that go around Earth, but it is Earth and other planets that go around the Sun- heliocentric theory.

34. Which of this model was not satisfied for Nicolus Copernicus?
a) Geocentric theory
**b) Epicycle model**
c) Heliocentric theory
d) All the above
**Explanation**
Dissatisfied with the messy epicycle model Nicolus Copernicus radically proposed that the model will become simple if we assume Sun is at the center and all planets including Earth go around it.

35. How many days would be taken by Mars to orbit around the Sun?
a) 222 days
b) 365 days
c) 27 days
**d) 687 days**
**Explanation**
Earth orbit around Sun in 365 days whereas Mars takes 687 days. This implies at times Earth will overtake Mars. When the Earth is approaching and overtaking Mars, the Mars would appear to exhibit retrograde motion.

36. Choose the correct statements regarding the telescopic observation of Galileo.
i) Venus exhibited various phases like moon.
ii) Only the size of Venus is varied from crescent to gibbous.
iii) The shape of Venus is same in all the phases.
**a) i only**
b) ii only
c) iii only

d) All the above

**Explanation**

Galileo observed Venus in 1610-1611 with a telescope. To naked eye Venus is just a gleaming bright spot. However, through a telescope, the shape of the planet can be seen. Galilio was startled to find like Moon Venus too exhibited phases. The shape varied from crescent to gibbous. Also, the size of the planet varied. When the planet was in gibbous phase the size was small, and when it was thin crescent the size was many folds higher.

37. Assertion (A): Earth is included in the Milky way galaxy.
Reasoning(R): The Sun is a star with a planetary system.

**a) Both A and R is True and R is the correct explanation of A.**

b) Both A and R is True but R is not the correct explanation of A.

c) A is True but R is False.

d) Both A and R is False.

**Explanation**

Our Sun is a star with a planetary system. Billions of such stars constitute a system called as galaxy. The name of our galaxy is, Milky Way. Like Milky Way, there are at least hundreds of billions of galaxies in the Universe.

38. According to the scientists which is considered as the origin of the Universe?

**a) Big Bang**

b) Black hole

c) The Sun

d) Dwarf Stars

**Explanation**

The Cosmologist's scientists who study the structure and evolution of universe that is cosmos, reason that this imply at one point of time in the past all matter was confined in a single point and since then it has started to expand. The event when the matter confined in a single point and began to expand is called 'big bang'. This is considered as the origin of our universe as we know it.

39. Which of these concepts originated by the Big Bang theory?

a) Time

b) Space

c) Matter

**d) All the above**

**Explanation**

The Big Bang Theory is the prevailing model of the evolution of the Universe. Under this theory, space and time emerged together about 14 billions of years ago. At that time, the entire Universe was inside a bubble that was thousands of times smaller than a pinhead. It was hotter and denser

than anything we can imagine. Then it suddenly expanded. The present Universe emerged .Time, space and matter all began with the Big Bang.

40. Which of this gas were found in the earlier stage of evolution of the universe?
a) Oxygen
b) Helium
c) Hydrogen
**d) Both b and c**
**Explanation**
At the stage of the evolution of the Universe, it was filled with clouds of hydrogen and helium gas. Giant clouds of hydrogen and helium were gradually drawn to the places where dark matter was most dense, forming the first galaxies, stars, and everything else seen today.

41. What is the direct evidence for the Big Bang theory?
**a) Cosmic microwave background**
b) Hydrogen clouds
c) Black holes
d) Dwarf galaxies
**Explanation**
We cannot see anything that happened during the first 300000 years of the Universe. Scientists try to work it out from their knowledge of atomic particles and from computer models. The only direct evidence of the Big Bang itself is a faint glow in space, called cosmic microwave background.

42. After how many years after the Big Bang the first star was formed?
**a) 100 million years**
b) 250 light years
c) 100,000 million years
d) 200 trillion years
**Explanation**
Finally, about 100 million years after the Big Bang, the gas became hot and dense enough for the first stars to form. New stars were being born at a rate 10 times higher than in the present-day Universe. Large clusters of stars soon became the first galaxies.

43. What are the building blocks of the Universe?
a) Stars
b) Asteroids
c) Meteors
**d) All the above**
**Explanation**

The Universe is constituted of galaxies; just as lot of houses in our locality constitute a village or a city. We have lot of things such as rooms, furniture etc. in our homes. Likewise lot of stellar objects such as stars, planets, asteroids and meteors are the building blocks of our universe.

44. Identify the Incorrect Match.

| | |
|---|---|
| A. One au | i) 1.496 x $10^8$ km |
| B. One pc | ii) 3.258 x $10^{24}$ km |
| C. One ly | iii) 9.4607 x $10^{12}$km |

a) i only
**b) ii only**
c) iii only
d) None of the above

**Explanation**

Astronomical unit: The average distance between the Earth and the Sun is called an astronomical unit. It is denoted by 'au'. 1 au = 1.496 x $10^8$km

Light year: The distance travelled by light in one year is called a light year. It is denoted by 'ly'. 1 ly = 9.4607 x $10^{12}$ km

Parsec: A parsec is defined as the distance at which one astronomical unit subtends an angle of one arc second. It is denoted by 'pc'

1 pc = 3.2615 ly = 3.09 x $10^{13}$ km

45. Which of these constitutes a galaxy?

a) Collection of stars
b) Cluster of stars
c) Celestial bodies
**d) All the above**

**Explanation**

A galaxy is a large collection of stars or cluster of stars and celestial bodies held together by gravitational attraction. There are about billions of galaxies in the universe. Most galaxies range from thousand to ten thousand parsec in diameter.

46. How many types of galaxies are classified so far?

a) 5
**b) 4**
c) 6
d) 2

**Explanation**

Types of galaxies: There are various types of galaxies such as spiral, elliptical, barred spiral and irregular.

47. Which of this galaxy have the bulge or central concentration of stars?
**a) Spiral galaxy**
b) Elliptical galaxy
c) Barred spiral galaxy
d) Irregular galaxy
**Explanation**
Spiral galaxies consist of a flat, rotating disk containing stars, gas and dust, and a central concentration of stars known as the bulge. These are often surrounded by a much fainter halo of stars. Spiral galaxies are named by their spiral structures that extend from the center into the galactic disc. The spiral arms are sites of ongoing star formation and are brighter than the surrounding disc because of the young, hot stars that inhabit them.

48. Which of these is not a property of an elliptical galaxy?
a) Elliptical galaxies are three dimensional.
b) The stars are random orbits around the center of an elliptical galaxy.
**c) Stars of spiral galaxies are much older than elliptical galaxies.**
d) Elliptical galaxies are surrounded by large number of globular clusters.
**Explanation**
An elliptical galaxy is a type of galaxy having an approximately ellipsoidal shape and a smooth image. Unlike flat spiral galaxies with organization and structure, elliptical galaxies are three-dimensional, without much structure and their stars are in somewhat random orbits around the center. Interestingly Stars found inside of elliptical galaxies are on an average much older than stars found in spiral galaxies. Elliptical galaxies tend to be surrounded by large numbers of globular clusters.

49. Choose the incorrect statements about the Irregular galaxies.
i) It does not have a regular shape and chaotic in appearance.
ii) It contains abundant amount of gas and dust.
iii) About two third of the galaxies are of this type.
a) i only
b) ii only
**c) iii only**
d) None of the above
**Explanation**
An irregular galaxy is a galaxy that does not have a distinct regular shape, unlike a spiral or an elliptical galaxy they are often chaotic in appearance, with neither a nuclear bulge nor any trace of spiral arm structure. About one-fourth of the galaxies found so far are of this type. Irregular galaxies may contain abundant amounts of gas and dust.

50. Assertion (A): The Irregular galaxies were once spiral or elliptical galaxies.

Reasoning(R): The Uneven external gravitational forces deform the galaxies and make them irregular.

**a) Both A and R is True and R is the correct explanation of A.**

b) Both A and R is True but R is not the correct explanation of A.

c) A is True but R is False.

d) Both A and R is False.

**Explanation**

Cosmologists say that some irregular galaxies were once spiral or elliptical galaxies but were deformed by an uneven external gravitational force.

51. Under which of this type of galaxy the Milky Way is categorized?

**a) Barred Spiral galaxy**

b) Elliptical galaxy

c) Spiral galaxy

d) Irregular galaxy

**Explanation**

The Milky Way Galaxy where our own Solar System is located is classified as a barred spiral galaxy.

52. What is the diameter of the Milky Way?

**a) 100,000 light years**

b) 100 light years

c) 1000 light years

d) 10000 light years

**Explanation**

The Milky Way is the galaxy in which our solar system is located. The diameter of Milky Way is over 100,000 light years.

53. Which of these are included in the Milky way?

a) Celestial bodies

b) Dead stars

c) Clouds of Dust

**d) All the above**

**Explanation**

The Milky Way includes stars smaller than our Sun as well as many other stars that are thousands of times bigger than the Sun. It includes many other celestial bodies of gases, clouds of dust, dead stars, newly born stars, etc. It is also thought to contain at least 100 billion stars.

54. Which of these galaxies is the closest to the Milky Way?

a) Cygnus

b) Virgo

**c) Andromeda**
d) Magellan Clouds
**Explanation**
The galaxy that is closest to our Milky Way is Andromeda. The descriptive "milky" is derived from the appearance from Earth of the galaxy – a band of light seen in the night sky formed from stars that cannot be individually distinguished by the naked eye.

55. Who resolved the band of light into individual stars in the year 1610?
**a) Galileo Galili**
b) Johannes Kepler
c) Nicolaus Copernicus
d) Tyco Brahe
**Explanation**
Galileo Galili first resolved the band of light into individual stars with his telescope in 1610.

56. Who proved that the Milky way is just one of many galaxies?
a) Dan Lewis
b) Giovanni Cassini
**c) Edwin Hubble**
d) Christiaan Huygens
**Explanation**
Until the early 1920s, most astronomers thought that the Milky Way contained all the stars in the Universe. Observations by Edwin Hubble showed that the Milky Way is just one of many galaxies.

57. How long the solar system will take to travel along the Milky Way?
**a) 230 million years**
b) 100000 light years
c) 250 Astronomical unit
d) 1000000 Parsec
**Explanation**
The solar system travels at an average speed of 828,000 km/h. Even at this rapid speed, the solar system would take about 230 million years to travel all the way around the Milky Way.

58. Which of the following statements are not true regarding the Black holes?
a) Black holes are the center of the galaxy.
b) Black holes cannot be viewed directly.
**c) Only some of the galaxies are thought to have black hole.**
d) The Black holes can change or distract the paths of materials around it.
**Explanation**

Tucked inside the very center of the galaxy is a monstrous black hole, billions of times as massive as the sun. Although, black holes cannot be directly viewed, scientists can see their gravitational effects as they change and distort the paths of the material around it most galaxies like our milky way, are thought to have a black hole in their heart.

59. Assertion (A): The International Astronomical Union has classified 88 constellations covering the celestial sphere.

Reasoning(R): A Constellation is a recognizable pattern of stars in the night sky from the earth.

**a) Both A and R is True and R is the correct explanation of A.**

b) Both A and R is True but R is not the correct explanation of A.

c) A is True but R is False.

d) Both A and R is False.

**Explanation**

A constellation is a recognizable pattern of stars in the night sky when viewed from the Earth. International Astronomical Union has classified 88 constellations to cover the entire celestial sphere. Many of the old constellations have Greek or Latin names and are often named after mythological characters.

60. Which is known as the large constellation in the sky?

**a) The Ursa Major**

b) The Pole Star

c) The Ursa Minor

d) The Milky Way

**Explanation**

Ursa Major (Saptha Rishi Mandalam) is a large constellation and it covers a large part of the sky. The most striking feature of this constellation is a group of seven bright stars known as big dipper (seven Sages in Indian astronomy).

61. Choose the Incorrect statements.

i) The Ursa Minor lies in the northern sky of the earth.

ii) Little dipper consists of seven stars.

iii) The Pole star lies within the Ursa Major.

a) i only

b) ii only

c) iii only

**d) None of the above**

**Explanation**

Ursa Minor in Latin means 'the little bear' it lays in the northern sky. The Pole star – Polaris (Dhrua) lies within this constellation. The main group, 'little dipper' consists of seven stars and is quite similar to that found in Ursa Major.

62. What is the reason for different constellations appearing in various times in a year?
**a) Revolution of Earth**
b) Atmospheric dust
c) Heat energy of the Sun
d) Distance
**Explanation**
Different constellations become visible in the sky at different times in the year. This happens due to the revolution of the Earth around the Sun.

63. Assertion (A): The stars are bound by gravity that constitutes a system in a galaxy.
Reasoning(R): The Constellation is not real object and it is mere optical appearance.
**a) Both A and R is True and R is the correct explanation of A.**
b) Both A and R is True but R is not the correct explanation of A.
c) A is True but R is False.
d) Both A and R is False.
**Explanation**
Unlike galaxy, constellations are mere optical appearance and not real objects. In galaxy stars are bound by gravity and constitute a system. In a constellation, one star may be near and another very far, but because they are in the same direction appear to be near to each other in the sky.

64. Which of these prevents the light from the star to travel in a straight line?
**a) Atmospheric disturbances**
b) The Sun light
c) Planet movements
d) All the above
**Explanation**
A Star is a luminous heavenly body that radiates energy. With naked eyes, we can see nearly 3000 stars in the night sky and many more with the help of a telescope. The stars are remotely located and appear as tiny dots of light. Their light travels long distances to reach us. The atmosphere disturbances do not allow light to reach us in a straight line path. Because of this the stars appear to twinkle.

65. Which is the nearest star to the Earth?
a) Andromeda
**b) Alpha Centauri**
c) Milky Way
d) Megallanic Clouds
**Explanation**
The Sun is the nearest star to the Earth. The next nearest star is Alpha Centauri.

66. How many categories of satellite are classified?
a) 3
b) 4
c) 5
**d) 2**
**Explanation**
An object that revolves around a planet in a stable and consistent orbit is called a satellite. Satellites can be classified into two categories –natural and artificial.

67. What is the natural object that revolves around a planet?
**a) Moon**
b) Asteroids
c) Meteors
d) Stars
**Explanation**
All natural objects revolving around a planet are natural satellites. They are also called moons. Most moons are spherical, the ones that are not usually asteroids or meteors that were captured by the strong gravity of a planet.

68. Which of this planet has more number of moons?
a) Mars
b) Mercury
c) Venus
**d) Jupiter**
**Explanation**
All planets except mercury and Venus in our solar system have moons. Earth has only one moon-whereas planets like Jupiter and Saturn have more than 60 moons.

69. Which was the world's first artificial satellite?
**a) Sputnik-1**
b) Aryabhatta
c) Rohini
d) Explorer-1
**Explanation**
The world's first artificial satellite launched was Sputnik-1 by Russia,

70. What are the uses of the satellites?
a) Radio transmission
b) Agriculture field

c) Weather forecast
**d) All the above**
**Explanation**
Aryabhatta was the first satellite launched by India. These satellites are used in television and radio transmission, studying agriculture yield, locating mineral resources, weather forecasting, locate different places on earth.

71. Which place is the headquarters of the Indian space agency ISRO?
a) New Delhi
**b) Bangalore**
c) Chennai
d) Mumbai
**Explanation**
The Indian Space Research Organization (ISRO) is the space agency of the Government of India headquartered in the city of Bangalore. Its vision is to "harness space technology for national development while pursuing space science research and planetary exploration."

72. Choose the correct statements.
i) Subrahmanyan Chandrasekhar was an Indian -American astrophysicist.
ii) Chandrasekhar was awarded Nobel Prize for physics in the year 1983.
iii) The theoretical models developed by Chandrasekhar were used in later evolutionary stages of stars and black holes.
a) i only
b) ii only
c) iii only
**d) All the above**
**Explanation**
Subrahmanyan Chandrasekhar (19October 1910 – 21 August 1995) was an Indian American astrophysicist who spent his professional life in the United States. He was awarded the 1983 Nobel Prize for Physics with William A Fowler. His mathematical treatment of stellar evolution yielded many of the best current theoretical models of the later evolutionary stages of massive stars and black holes. The Chandrasekhar limit is named after him. Chandrasekhar worked on a wide variety of physical problems in his lifetime.

73. In which year the ISRO was formed in India?
a) 1962
b) 1978
**c) 1969**
d) 1954
**Explanation**

Formed in 1969, ISRO superseded the erstwhile Indian National Committee for Space Research (INCOSPAR) established in 1962 by the Scientist Vikram Sarabhai. The establishment of ISRO thus institutionalized space activities in India. It is managed by the Department of Space, which reports to the Prime Minister of India.

74. Which country launched the first Indian satellite Aryabhata?
a) The United States of America
**b) The Soviet Union**
c) China
d) France
**Explanation**
ISRO built India's first satellite, Aryabhatta which was launched by the Soviet Union on 19 April 1975. It was named after the Indian astronomer Aryabhata.

75. Which was the first Indian satellite launched by Indian-made launch vehicle SLV-3?
a) Chandrayan-1
b) Galileo
c) Aryabhatta
**d) Rohini**
**Explanation**
In 1980, Rohini became the first satellite to be placed in orbit by an Indian-made launch vehicle, SLV-3. ISRO subsequently developed two other rockets: the Polar Satellite Launch Vehicle (PSLV) for launching satellites into polar orbits and the Geosynchronous Satellite Launch Vehicle (GSLV) to place satellites into geostationary orbits.

76. What are GAGAN and IRNSS of ISRO?
a) Launching satellites
**b) Navigation systems**
c) Satellites
d) Mars mission
**Explanation**
Satellite navigation systems like GAGAN and IRNSS have been deployed. In January 2014, ISRO used an indigenous cryogenic engine in a GSLV-D5 launch of the GSAT-14.

77. Choose the correct statements.
i) Mars Orbiter Mission was launched on November, 2013 by ISRO.
ii) ISRO was the fourth space agency in the world to reach Mars orbit.
a) i only
b) ii only
**c) Both i and ii**

d) Neither i nor ii

**Explanation**

ISRO sent a lunar orbiter, Chandrayan -1 on 22 October 2008 and a Mars orbiter, Mars Orbiter Mission, on 5 November 2013, which entered Mars orbit on 24 September 2014, making India the first nation to succeed on its first attempt to Mars, and ISRO the fourth space agency in the world as well as the first space agency in Asia to reach Mars orbit.

78. How many satellites were launched by the PSLV-C37 on Feb, 2017?

a) 38

b) 65

**c) 104**

d) 250

**Explanation**

On 15 February 2017, ISRO launched 104 satellites in a single rocket (PSLV-C37) and created a world record. ISRO launched its heaviest rocket, Geosynchronous Satellite Launch Vehicle- Mark III (GSLV-Mk III) on 5 June 2017 and placed a communications satellite GSAT-19 in orbit. With this launch, ISRO became capable of launching 4 ton heavy satellites.

79. When Chandrayan 2 was launched by ISRO?

**a) July 22, 2019**

b) October 22, 2008

c) August 20, 2019

d) December 2, 2018

**Explanation**

ISRO launched Chandrayan 2 on July 22, 2019, Geosynchronous Satellite Launch Vehicle (GSLV-Mk III). It entered the Moon's orbit on August 20, 2019 and its lander landed on the Moon on September 7.

80. Which planet space probe was named after Galileo Galilei?

a) Mercury

b) Mars

**c) Jupiter**

d) Venus

**Explanation**

In 1989, Galileo Galilei was memorialized with the launch of a Jupiter-bound space probe bearing his name. During its 14-year voyage, the Galileo space probe and its detachable mini-probe, visited Venus the asteroid Gaspra, observed the impact of Comet Shoemaker-Levy 9 on Jupiter, Europa, Callisto, IO, and Amalthea. In order to avoid the possible contamination of one of Jupiter's moons, the Galileo space probe was purposely crashed into Jupiter at the end of its mission in September 2003.

81. What was the name of the aircraft designed and operated by Dr. A.P.J.Abdul Kalam?
**a) Nandhi**
b) Agni
c) Red
d) Veena
**Explanation**
After completing studies at MIT, Abdul Kalam designed an aircraft named 'Nandhi' using indigenous materials with the help of indigenous technologists, He operated that flight himself.

82. Which of this launch vehicle was used to launch Rohini-1 satellite?
a) PSLV-2
b) GSLV-1
**c) SLV-3**
d) GSLV- 4
**Explanation**
Kalam successfully launched the 'Rohini-1' satellite using the India's first satellite launch vehicle SLV-3 in 1980. He acted as the Project Director when the missiles Thrishul, Agni, Prithvi, Nag and Akash were designed in the Indian Defence.

83. Choose the correct statements.
i) Smiling Buddha was the first nuclear explosion test handled by India in 1974.
ii) Abdul Kalam was the head of the Smiling Buddha project.
**a) i only**
b) ii only
c) Both i and ii
d) Neither i nor ii
**Explanation**
India for the first time experimented nuclear explosion test named 'Smiling Buddha' in 1974. Kalam was one among the sixty Aeronautical Engineers in this project.

84. What was the name of the nuclear test project in the year 1999?
**a) Operation Sakthi**
b) Operation Blue
c) Operation Indira
d) Operation Red
**Explanation**
Abdul Kalam played a vital role in the nuclear explosion test project in Pokran named "Operation Sakthi" in 1999. The credit that the India has become a nuclear power goes to him.

85. In which year Dr. A.P.J. Abdul Kalam was awarded the prestigious Bharatha Ratna award?

**a) 1997**

b) 2000

c) 1981

d) 2003

**Explanation**

The Government of India awarded him the Bharatha Ratna in the year 1997. He was the President of India during the period from 2002-2007.