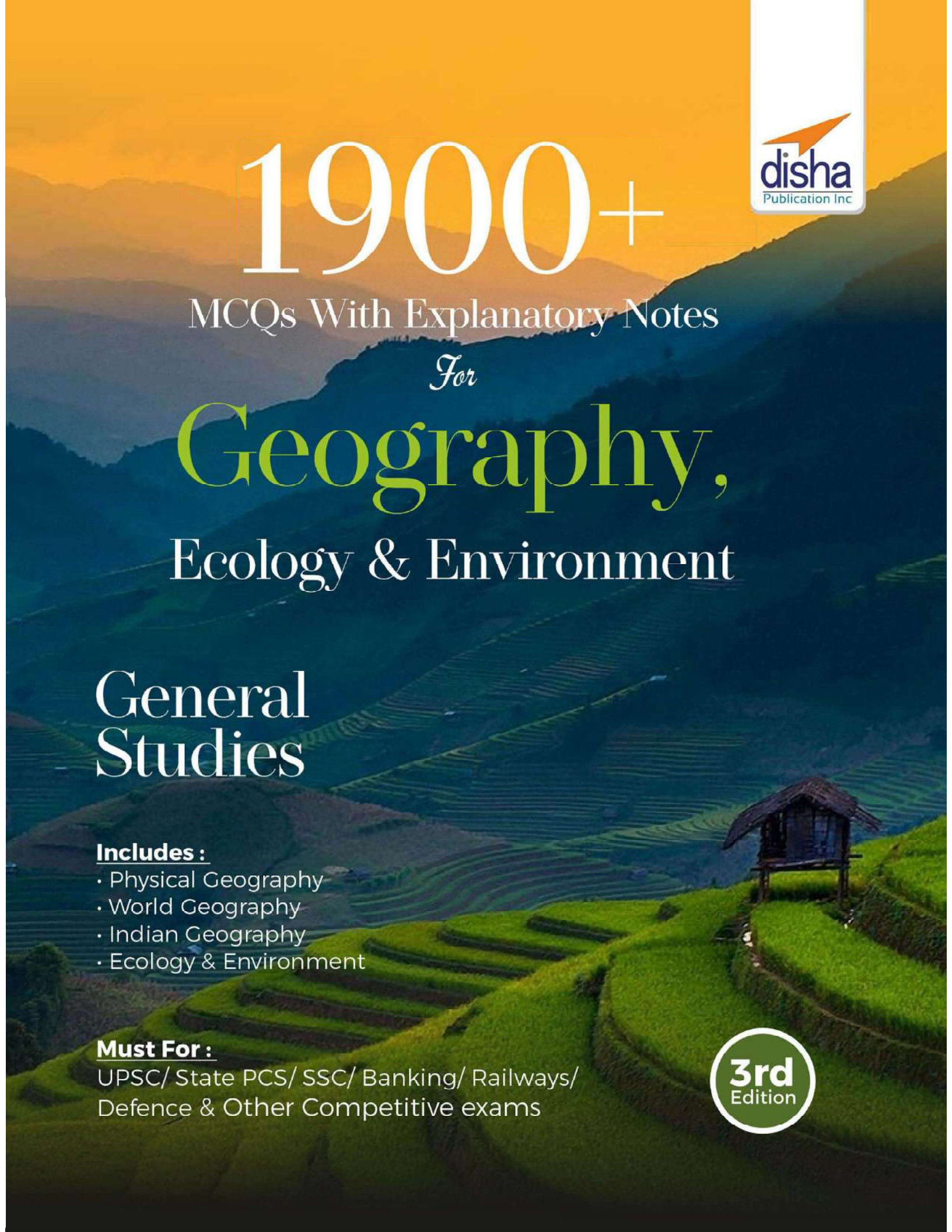
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DISHA PUBLICATION
45, 2nd Floor, Maharishi Dayanand Marg,
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Tel : 49842349 / 49842350

Typeset by Disha DTP Team

Contents

GEOGRAPHY

ECOLOGY & ENVIRONMENT & BIODIVERSITY

1 Physical Geography

Universe/Sun/Planets/Earth

1. The colour of the star is an indication of its
   (a) Distance from the earth
   (b) Distance from the sun
   (c) Temperature
   (d) Luminosity

Ans. (c) The colour of the star is an indication of its temperature. The glowing is caused by something called Black-Body radiation, which has to do with the heat energy trying to radiate away in more and more energetic wavelengths. Red stars are relatively cool at only a few thousand degrees Celsius, white stars are hot at about ten thousand degrees, and blue stars are the hottest.

2. The planet nearest to the sun is
   (a) Mercury (b) Earth
   (c) Venus (d) Pluto

Ans. (a) The planet nearest to the sun is mercury. Mercury is the smallest and closest to the Sun of the eight planets in the Solar System, with an orbital period of about 88 Earth days.

3. The group of stars arranged in a definite pattern is called
   (a) Milky Way (b) Constellation
   (c) Andromeda (d) Solar system

Ans. (b) The group of stars arranged in a definite pattern is called constellation. In modern astronomy, a constellation is an internationally defined area of the celestial sphere. These areas are grouped around asterisms, which are patterns formed by prominent stars within apparent proximity to one another on Earth's night sky.

4. The Asteroid belt is found between which of the following?
   (a) Earth and Mars (b) Jupiter and Saturn
   (c) Mars and Jupiter (d) Saturn and Uranus

Ans. (c) The Asteroid belt is found between Mars and Jupiter. The large majority of known asteroids orbit in the asteroid belt between the orbits of Mars and Jupiter, or are co-orbital with Jupiter.

5. Which one of the following is the largest satellite in solar system?
   (a) Ganymede (b) Titan
   (c) Europa (d) Triton

Ans. (a) Ganymede is the largest satellite in solar system. Ganymede is a satellite of Jupiter and the largest moon in the Solar System. It is the seventh moon and third Galilean satellite outward from Jupiter. Completing an orbit in roughly seven days, Ganymede participates in a 1:2:4 orbital resonance with the moons Europa and Io, respectively. It has a diameter of 5,268 km (3,273 mi), 8% larger than that of the planet Mercury, but has only 45% of the latter's mass.

6. Which planet takes the longest time to go around the sun?
   (a) Earth (b) Jupiter
   (c) Uranus (d) Neptune

Ans. (d) Neptune takes the longest time to go around the sun. Neptune orbits the Sun at an average distance of 4.5 billion km. Like all the planets in the Solar System, Neptune follows an elliptical path around the Sun, varying its distance to the Sun at different points along its orbit.

7. The planet which is called twin sister of the Earth is
   (a) Mercury (b) Venus
   (c) Mars (d) Uranus

Ans. (b) The planet which is called twin sister of earth is Venus. Venus is known as the Earth's twin because of its similar size, chemical composition and density. However, due to its toxic atmosphere, Venus is not habitable.

8. The distance of Moon from the Earth is
   (a) 384 thousand kms. (b) 300 thousand kms.
   (c) 350 thousand kms. (d) 446 thousand kms.

Ans. (a) The distance of moon from the Earth is 384 thousands kms. The Moon is the only natural satellite of the Earth and the fifth largest moon in the Solar System. It is the largest natural satellite of a planet in the Solar System relative to the size of its primary, having 27% the diameter and 60% the density of Earth, resulting in 1⁄81 its mass.

9. Which planet was named after the Roman God Zeus?
   (a) Earth (b) Mars
   (c) Venus (d) Jupiter

Ans. (d) Jupiter was named on the Roman God Zeus. Zeus is the "Father of Gods and men" who rules the Olympians of Mount Olympus as a father rules the family according to the ancient Greek religion. He is the God of sky and thunder in Greek mythology. Zeus is etymologically cognate with and, under Hellenic influence, became particularly closely identified with Roman Jupiter.

10. Which of the following planets is smaller in size than the Earth?
    (a) Venus (b) Uranus
    (c) Saturn (d) Neptune

Ans. (a) Venus is smaller in size than the Earth. Diameter of earth is 12,742 km while that of Venus is 12,100 km

11. The largest planet in our solar system is
    (a) Earth (b) Uranus
    (c) Jupiter (d) Saturn

Ans. (c) The largest planet in our solar system is Jupiter. Jupiter is the fifth planet from the Sun and the largest planet in the Solar System. It is a gas giant with mass one-thousandth of that of the Sun but is two and a half times the mass of all the other planets in the Solar System combined.

12. Which of the following planets has largest number of satellites or moons?
    (a) Jupiter (b) Neptune
    (c) Earth (d) Saturn

Ans. (a) Jupiter has largest number of satellites or moons. The planet Jupiter has 67 confirmed moons. This gives it the largest retinue of moons with "reasonably secure" orbits of any planet in the Solar System.

13. Which of the following planets is called "Blue planet"?
    (a) Venus (b) Earth
    (c) Uranus (d) Mercury

Ans. (b) Earth is called the 'Blue Planet' due to the abundant water on its surface. This is because liquid water covers most of the surface of the planet. The Earth has the right mass, chemical composition, and location can support liquid water.

14. The approximate diameter of Earth is
(a) 4200 km (b) 6400 km
(c) 3400 km (d) 12800 km

Ans. (d) The approximately diameter of Earth is 12800 km. The rotation of the planet has slightly flattened it out, so it has a larger diameter at the equator than at the poles. The equatorial diameter of Earth is 12,756 km, its polar diameter is 12,713 km, and its average diameter, which is referred to in common usage, is 12,742 km or 7,926 miles.

15. The Earth rotates around its axis from
(a) North to South (b) South to North
(c) East to West (d) West to East

Ans. (d) The Earth rotates around its axis from west to east. Earth's rotation is the rotation of the solid Earth around its own axis. The Earth rotates from the west towards the east. As viewed from the North Star or polestar Polaris, the Earth turns counter-clockwise.

16. What is the time taken by the Earth to complete one rotation on its axis?
(a) 23 hr 52 min 4 sec (b) 23 hr 56 min 4 sec
(c) 24 hr (d) 24 hr 12 min 6 sec

Ans. (b) The time taken by the Earth to complete one rotation on its axis is 23 hr-56 min 4 sec.

17. Which of the following is the nearest star of Earth?
(a) Sirius (b) Sun
(c) Rigel (d) Vega

Ans. (b) The distance from sun to Earth is called an astronomical unit (AV) one of the Nearest star sirius is more than thousands of AV distance from earth.

18. Which one of the following planets is the brightest?
(a) Mars (b) Mercury
(c) Venus (d) Jupiter

Ans. (c) Venus is the brightest planet. It is third brightest object in sky after the sun and moon.

19. The mean radius of the Earth is
(a) 3200 km (b) 6400 km
(c) 8400 km (d) 12800 km

Ans. (b) The mean radius of Earth is 6371 km or approximately a 6400 km

20. Which one of the following planets rotates clockwise?
(a) Earth (b) Mars
(c) Venus (d) Mercury

Ans. (c) The planet Venus rotates clock wise. On Venus, the rotation is backwards, or clockwise, which is called retrograde. Standing on the surface of Venus, one would be able to see the sun rising from the west.

21. The nuclear fuel in the Sun is
(a) Helium (b) Hydrogen
(c) Oxygen (d) Uranium

Ans. (b) The nuclear fuel in the sun is Hydrogen. Actually the sun isn't "burning," but instead its heat and light comes from its core where the element hydrogen is continuously being converted into the element helium. This known as nuclear fusion and is basically the same thing a hydrogen bomb does.

22. The outermost layer of the sun is called
(a) Chromosphere (b) Photosphere
(c) Lithosphere (d) Corona

Ans. (d) The outermost layer of the sun is called corona. A corona is a type of plasma that surrounds the Sun and other celestial bodies. The Sun's corona extends millions of kilometers into space and is most easily seen during a total solar eclipse, but it is also observable with a coronagraph.

23. The surface temperature of sun is nearly
(a) 2000 K (b) 4000 K
(c) 6000 K (d) 8000 K

Ans. (c) The surface temperature of Sun is 5778 K or approximately 6000 K.

24. What is meant by the term "Midnight Sun"?
(a) Twilight
(b) Rising sun
(c) Very bright moon
(d) Sun shining in the polar circle for long time

Ans.(d) Midnight Sun occurs in Polar region in Summer months where sun remains visible at local midnight.

25. Which of the following planets is known as "Red Planet"?
(a) Earth (b) Mars
(c) Jupiter (d) Saturn

Ans. (b) Mars is known as Red planet. Mars is the fourth planet from the Sun and the second smallest planet in the Solar System. Named after the Roman God of war, it is often described as the "Red Planet" because the iron oxide prevalent on its surface gives it a reddish appearance. Mars is a terrestrial planet with a thin atmosphere, having surface features reminiscent both of the impact craters of the Moon and the volcanoes, valleys, deserts, and polar ice caps of Earth.

26. The planet whose period of rotation is longer than the period of revolution around the sun is
(a) Mercury (b) Mars
(c) Venus (d) Neptune

Ans. (c) Venus is the planet whose period of rotation is longer than the period of revolution around the sun. The period of rotation for Venus is 243 days. In other words, Venus takes 243 days to turn once on its axis so that the stars are in the same position in the sky.

27. The last stage in the life cycle of a star is
(a) Black Hole (b) Supernova
(c) Red Giant (d) White Dwarf

Ans. (d) The last stage in the life circle of a star is white dwarf. Small stars, like the Sun, will undergo a relatively peaceful and beautiful death that sees them pass through a planetary nebula phase to become a white dwarf.

28. Time taken by Sun's light to reach Earth is
(a) 8 min 20 sec (b) 9 min
(c) 9 min 18 sec (d) 6 min 18 sec

Ans. (a) On an average Sunlight reaches on Earth in 8 min. 20 sec.

29. Time taken by Moon's light to reach Earth is
(a) 58 sec (b) 1.26 sec
(c) 1.58 sec (d) 2.32 sec

Ans. (b) Moonlight reaches on Earth around 1.3 sec.

30. Space between Earth and Moon is known as
(a) Cislunar (b) Fulalunar
(c) Nebula (d) None of these

Ans. (a) Space between Earth and Moon is known as Cislunar. Pertaining to the space between the earth and the orbit of the moon.

31. Our solar system is located in which Galaxy?
(a) Proxima Centauri (b) Alpha Centauri
(c) Milky Way (d) Andromeda

Ans. (c) Our solar system is located in Milky Way Galaxy. The Milky Way is the galaxy that contains our Solar System. Its name "milky" is derived from its appearance as a dim glowing band arching across the night sky in which the naked eye cannot distinguish individual stars.

32. Which of the following stars is also known as Pulsar?
(a) Red Giant (b) White Dwarf
(c) Neutron Star (d) Massive Star

Ans. (c) Neutron star is also known as Pulsar. A neutron star is a type of stellar remnant that can result from the gravitational collapse of a massive star.

33. Which of the following stars is known as Fossil star?
(a) Protostar (b) Dog Star
(c) Red Giant (d) White Dwarf

Ans. (d) White Dwarf is known as Fossil star. They are supported by electron degeneracy pressure. It amplifies the contrast with red giants. They are both very hot and very small. They are the opposite of black holes. They are the end-products of small, low-mass stars.

34. The energy of sun is produced by
(a) Nuclear fission (b) Ionisation
(c) Nuclear fusion (d) Oxidation

Ans.(c) Sun generates its energy by nuclear fusion of hydrogen nuclei into helium.

35. Which of the following does not belong to solar system?
(a) Asteroids (b) Comets
(c) Planets (d) Nebulae

Ans. (d) Nebulae is an interstellar cloud of dust in outer space.

36. Which one of the following planets is nearest to the earth?
(a) Mercury (b) Venus
(c) Mars (d) Uranus

Ans. (b) Venus is nearest planet to Earth. Although distance is not fixed and it may vary from 38 million to 261 million Km depending upon orbital motion.

37. Cycle of sunspots is
(a) 9 years (b) 10 years
(c) 11 years (d) 12 years

Ans. (c) The number of sunspots observed on the surface of the sun varies from year to year in a cyclical way. The length of the cycle is around 11 years on average.

38. The group of small pieces of rocks revolving round the sun between the orbits of Mars and Jupiter are called
(a) Meteors (b) Comets
(c) Meteorites (d) Asteroids

Ans. (d) The group of small pieces of rocks revolving round the sun between the orbits of Mars and Jupiter are called asteroids.

39. Which one of the following conditions is most relevant for the presence of life on Mars?
(a) Atmospheric composition
(b) Thermal conditions
(c) Occurrence of ice cap and frozen water
(d) Occurrence of ozone

Ans. (c) Presence of ice cap and frozen water on Mars is one of the most significant reasons for presence of life forms.

40. Among the following which planet takes maximum time for one revolution around the sun?
(a) Earth (b) Jupiter
(c) Mars (d) Venus

Ans. (b) Jupiter takes maximum time for one revolution around the sun. Jupiter revolves or orbits around the Sun once every 11.86 Earth years, or once every 4,330.6 Earth days. Jupiter travels at an average speed of 29,236 miles.

41. Which planet is called "Evening star"?
(a) Mars (b) Jupiter
(c) Venus (d) Saturn

Ans. (c) Venus is called the Evening star. Because it trails the Sun in the sky and brightens into view immediately after the Sun sets and when the sky is dark enough. When Venus is at its brightest, it appears visible merely minutes after the Sun has set.

42. The Earth distance becomes minimum from the sun?
(a) 3rd January (b) 4th July
(c) 22nd March (d) 21st September

Ans. (a) The Earth shows minimum distance from the Sun on 3rd January.

43. Which planet is surrounded by ring?
(a) Saturn (b) Mars
(c) Venus (d) Earth

Ans. (a) Saturn is surrounded by ring. Saturn has a ring around it because it is believed to be very big and has lots of moons, meaning it has a strong pull of gravity. Another major reason is that the asteroids fling into its orbit and the rings are not solid.

44. Lunar eclipse occurs
(a) When moon lies between earth and sun
(b) When earth lies between sun and moon
(c) When sun lies between earth and moon
(d) None of these

Ans. (b) In Lunar eclipse Earth comes between Sun and Moon.

45. By how much degree the earth is inclined on its own axis
(a) 23 1/2 (b) 66 1/2
(c) 24 1/2 (d) 69 1/2

Ans. (a) Earth is inclined by 23 1/2 degree on its axis.

46. The planet Pluto has been abandoned from the group of conventional planet and kept in the group of dwarf planet by a summit held in
(a) Paris (b) London
(c) Geneva (d) Prague

Ans. (d) The planet Pluto has been declared as a dwarf planet in the summit held in Prague. In August 2006 the International Astronomical Union (IAU) downgraded the status of Pluto to that of "dwarf planet." This means that from now on only the rocky worlds of the inner Solar System and the gas giants of the outer system will be designated as planets.

47. Which of the following elements occurs the most abundantly in our universe?
(a) Hydrogen (b) Oxygen
(c) Nitrogen (d) Helium

Ans. (a)

48. Two planets which have no satellites
(a) Earth and Uranus (b) Mercury and Venus
(c) Mercury and Mars (d) Venus and Mars

Ans. (b)

49. The Astronaut looks the sky in the space
(a) Blue (b) Black
(c) Red (d) White

Ans. (b) The sky looks black from the space. In space, sunlight or any kind of star light does not have anything from which to bounce off.

50. The black part of the moon is always calm and dark which is called
(a) Sea of tranquility (b) Ocean of storms
(c) Area of storms (d) none of these

Ans. (a) The black part of the moon is called sea of tranquility. Sea of tranquility is not an actual sea but rather the point at which Apollo 11 first landed on when it reached the moon. It is a lunar mare which mainly consists of basalt rock and is located on the Tranquillitatis basin which is on the Moon. The mare has a tint which is slightly blue in colour and stands out from the rest of the moon.

51. What is the most accurate description of the shape of the earth ?
(a) A circle (b) A sphere
(c) A geoid (d) An oblate sphere

Ans. (d)

52. When the earth is at its maximum distance from the sun it is said to be in
(a) aphelion (b) perihelion
(c) apogee (d) perigee

Ans. (a)

53. What is the primary cause of the day and night ?
(a) Earth's annual motion
(b) Earth's rotation on its axis
(c) Inclination of the earth's axis and its rotation
(d) Inclination of the earth's axis and its revolution

Ans. (b)

54. What causes the change of seasons ?
(a) Earth's rotation and revolution
(b) Earth's revolution
(c) Earth's revolution and inclination of its axis
(d) Earth's rotation and inclination of its axis

Ans. (c) The revolution of the earth around the sun alone is not enough for change of seasons. Had the axis of the earth been vertical, the sun would have been vertical at the same latitude throughout the year. Therefore the revolution of the earth and its inclination, both are necessary for the change of seasons.

55. On which planet would one witness sunrise in the west ?
(a) Jupiter (b) Venus
(c) Saturn (d) Mercury

Ans. (b) The direction of the sunrise depends upon the direction of the rotation of the earth on its axis. Any planet rotation on its axis from west to east will experience sunrise in the east and vice versa. Venus rotates on its axis from east to west and thus experiences sunrise in the west.

56. The latitude is the angular distance of a point on the earth's surface with respect to the
(a) Equator (b) Prime meridian
(c) Pole star (d) Tropic of Cancer

Ans. (a) Latitude is distance North or south of the equator. It may also be defined as an angle which ranges from 0° at the equator to 90° at the poles.

57. The longitude of a place is its
(a) angular distance east or west of the prime meridian
(b) angular distance north or south of the equator
(c) angular distance east or west of International Date Line
(d) angular distance with respect to the pole star

Ans. (a) Longitude is measured in degrees East or West of the Prime Meridian.

58. On which date is the earth in perihelion ?
(a) June 21 (b) Dec 22
(c) January 3 (d) July 4

Ans. (c) The Earth is closest to the Sun or at the perihelion on January 3, when it is winter in the Northern Hemisphere.

59. The earth is in aphelion on
(a) June 21 (b) Dec. 22
(c) Sept. 23 (d) July 4

Ans. (d) The Earth is farthest from the sun at the Aphelion on July 4, when it is summer in the Northern Hemisphere.

60. The sun is veritical over the Tropic of Cancer on
(a) March 21 (b) June 21
(c) Sept. 23 (d) Dec. 22

Ans. (b) Sun is vertical over the tropic of cancer on June 21 or Summer Solstice.

61. What is most important about the Arctic and the Antarctic circles ?
(a) Within these circle only can the days and nights be longer than 24 hours
(b) The days and nights are never more than 24 hours long here
(c) Both areas frozen continents
(d) Both regions are uninhabited

Ans. (a)

62. What is true about the equinox ?
(a) Vertical sun over the Tropic of Cancer
(b) Vertical sun over the Tropic of Capricorn
(c) Vertical sun over the equator
(d) Continuous day in the polar regions

Ans. (c)

63. How much is the mass of the moon when compared with that of the earth ?
(a) 1/49 (b) 1/81
(c) 1/51 (d) 1/8

Ans. (b)

64. How much of the total surface area of the moon is never visible from the earth
(a) 41 per cent (b) 47 per cent
(c) 53 per cent (d) 59 per cent

Ans. (a)

65. The average distance between the moon and the earth's
(a) 384,000 km (b) 267,000 km
(c) 540,000 km (d) 576,000 km

Ans. (a)

66. The average distance between the sun and earth is
(a) 145 million km (b) 150 million km
(c) 155 million km (d) 160 million km

Ans. (b)

67. Greenwich mean time is ———— IST.
(a) 5.5 hours ahead (b) 12 hours ahead
(c) 4.5 hours behind (d) 5.5 hours behind

Ans. (d)

68. What is the unit of measurement of distance between celestial bodies ?
(a) Nautical mile (b) Statute mile
(c) Light year (d) Kilometre

Ans. (c)

69. On the surface of the moon
(a) the mass of an object is more but it weighs lesser
(b) the mass and weight both remain unchanged
(c) the mass is the same but the weight is lesser
(d) the mass is more but the weight is lesser

Ans. (c)

70. The shortest route between two places is along the
(a) latitudes (b) longitudes
(c) rivers (d) direction of winds

Ans. (b) The shortest ditance between two places on the earth surface is along the Great Circles. The property of a great circle is that a plane passed along it passes through the centre of the earth and divides it into two equal parts or hemispheres. Among the latitudes only the equator is a great circle while among longitudes all of them are great circles.

71. Consider the following statements regarding asteroids:
1. Asteroids are rocky debris of varying sizes orbiting the Sun.
2. Most of the asteroids are small but some have diameter as large as 1000 km.
3. The orbit of asteroids lies between orbits of Jupiter and Saturn.

Which of the statements given above are correct?
(a) 1 and 2 only (b) 2 and 3 only
(c) 1 and 3 only (d) 1, 2 and 3

Ans. (a) Asteroids are rocky debris of varying sizes orbiting the Sun. They are generally small but some has the diameter of 1000 km. Asteroids are minor planets whose orbits lie between Jupiter and Mars. These are said to be the fragments of a larger planet disrupted long ago. Their number is estimated to be 30,000 pieces of rocky debris out of which more than half are known.

72. Which one of the following statements is correct with reference to our solar system?
(a) The earth is the densest of all the planets in our solar system.
(b) The predominant element in the composition of Earth is silicon.
(c) The Sun contains 75 percent of the mass of the solar system.
(d) The diameter of the sun is 190 times that of the Earth.

Ans. (a) The Earth is the densest planet in the solar system. The density of Earth is 5.513g/cm3. This is an average of all the material on the planet.

73. Match List-I with List-II and select the correct answer using the codes given below the list:

List-I (Special characteristic)	**List-II (Name of Planet)**
A. Smallest planet of the solar system	1. Mercury
B. Largest planet of the solar system	2. Venus
C. Planet second from the Sun in the Solar system	3. Jupiter
D. Planet nearest to the Sun	4. Saturn

Codes:

	A	B	C	D
(a)	2	3	4	1
(b)	3	4	1	2
(c)	1	1	2	3
(d)	1	3	2	1

Ans. (d) Smallest planet of the solar system is Mercury while the largest is Jupiter. Planet second from the Sun in the solar system is Venus; planet nearest to the Sun is Mercury.

74. Diamond Ring is a phenomenon observed
(a) at the start of a total solar eclipse.
(b) at the end of a total solar eclipse.
(c) only along the peripheral regions of the totality trail.
(d) only in the central regions of the totality trail.

Ans. (c) Diamond Ring is the phenomenon which occurs along the peripheral regions of the totality tail. As the last bits of sunlight pass through the valleys on the moon's limb, and the faint corona around the sun is just becoming visible, it looks like a ring with glittering diamonds on it.

75. The term 'syzygy' is referred to when
(a) The Earth is at perihelion and the Moon at perigee.
(b) The Earth is at aphelion and the Moon at apogee.
(c) The Moon and the Sun are at right angles with reference to the Earth.
(d) The Moon, Sun and Earth lie along a straight line.

Ans. (d) The term 'syzygy' is referred to when the moon, sun and earth lie along a straight line. As seen from the Earth, a solar eclipse is a type of eclipse that occurs when the Moon passes between the Sun and Earth, and the Moon fully or partially blocks ("occults") the Sun. This can happen only at new moon, when the Sun and the Moon are in conjunction as seen from Earth in an alignment referred to as syzygy. In a total eclipse, the disk of the Sun is fully obscured by the Moon. In partial and annular eclipses only part of the Sun is obscured.

76. Consider the following two statements, one labelled as the Assertion (A) and the other as Reason (R). Examine these two statements carefully and select the correct answer by using the codes given below:
Assertion (A): To orbit around Sun, the planet Mars takes lesser time than time taken by the Earth.
Reason (R): The diameter of the planet Mars is less than that of 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.