

CSS • PPSC • GENERAL KNOWLEDGE

ASTRONOMY

MCQs

50 Fully Solved Questions — Verified Answers
& Explanations

50

QUESTIONS

100%

FACT-
CHECKED

50

EXPLANATIONS

Astronomy — Solved MCQs

Every correct answer is highlighted & ticked in green, with a short explanation below.

1

What is the mass of the Sun?



A $1.5 \times 10^{30} \text{ kg}$



B $1.98 \times 10^{30} \text{ kg}$



C $4.5 \times 10^{30} \text{ kg}$



D $8 \times 10^{30} \text{ kg}$

✓ **Correct Answer: B — $1.98 \times 10^{30} \text{ kg}$**

Why? The Sun's mass is approximately $1.989 \times 10^{30} \text{ kg}$ — about 333,000 times the mass of the Earth.

2

What is the temperature at the centre of the Sun?



A 6 million °C



B 10 million °C



C 15 million °C



D 20 million °C

✓ **Correct Answer: C — 15 million °C**

Why? The Sun's core reaches about 15 million °C, hot enough to sustain nuclear fusion of hydrogen into helium.

3

The top atmosphere of the Earth directly reflects back into space nearly what part of the total amount of sun's energy coming to it?



A 10%



B 20%



C 30%



D 50%

✓ **Correct Answer: C — 30%**

Why? Earth's average albedo is about 30% — roughly a third of incoming solar energy is reflected straight back into space by clouds, the atmosphere and the surface.

4

The phases of the moon are partially the result of the:



A

Changes in the shape of the moon



B

Revolution of the moon around the earth



C

Variations in the moon's gravitation



D

Variation in the speed of rotation of the moon

✓ Correct Answer: B — Revolution of the moon around the earth

Why? As the Moon revolves around the Earth, the amount of its sunlit side visible to us changes, producing the cycle of phases.

5

Constellations referred to as zodiac, are:



A

Imaginary regions that encompass the path of the planets



B

Signs of Roman gods



C

A group of stars



D

None of these

✓ Correct Answer: A — Imaginary regions that encompass the path of the planets

Why? The zodiac is the band of 12 constellations that lies along the apparent path (ecliptic) traced by the Sun, Moon and planets across the sky.

6

'Black holes' refers to:



A

Holes
occurring in
heavenly
bodies



B

Bright spots on
the sun



C

**Collapsing
object of high
density**



D

Collapsing
object of low
density

✓ **Correct Answer: C — Collapsing object of high density**

Why? A black hole forms when a massive star collapses under its own gravity into an extremely dense object whose escape velocity exceeds the speed of light.

7

Which one of the following is not a unit of distance?



A Parsec



B Astronomical Unit



C Light Year



D Foot Candle

✓ **Correct Answer: D — Foot Candle**

Why? A foot-candle is a unit of illuminance (light intensity falling on a surface), not distance. Parsec, Astronomical Unit and Light Year all measure distance.

8

Which one of the following planets orbits around the sun in a clockwise direction?



A Earth



B Mercury



C Jupiter



D Venus

✓ **Correct Answer: D — Venus**

Why? Venus is famous for retrograde motion — it spins on its axis clockwise (east to west), opposite to most planets, which is what this question refers to.

9

Isobars are the lines connecting the places having same:



A Pressure



B Rainfall



C Height



D Temperature

✓ **Correct Answer: A — Pressure**

Why? Isobars join points of equal atmospheric pressure on a weather map (compare: isotherms = temperature, contours = height).

10

Spring tides occur on new moon and full moon days because on these days:



A

Sun, moon and earth are in a straight line



B

Sun and earth are at right angles



C

Sun and moon are at right angles



D

Earth and moon are at right angles

✓ **Correct Answer: A — Sun, moon and earth are in a straight line**

Why? When the Sun, Earth and Moon align, the gravitational pulls of the Sun and Moon combine, producing unusually high spring tides.

11

The position of earth in its orbit, when it is at its greatest distance from sun is called:



A Aphelion



B Perihelion



C Perigee



D Apogee

✓ **Correct Answer: A — Aphelion**

Why? Aphelion is Earth's farthest point from the Sun; perihelion is the closest. Perigee/apogee refer to the Moon's orbit around Earth, not the Sun.

12

Which of the following planets is fastest rotating planet?



A Mercury



B Mars



C Jupiter



D Venus

✓ **Correct Answer: C — Jupiter**

Why? Jupiter spins once on its axis in under 10 hours — the fastest rotation of any planet in the solar system.

13

Which of the following planets has the smallest diameter?

**A Mercury****B Mars****C Pluto****D Venus**

✓ **Correct Answer: A — Mercury**

Why? Among the eight planets, Mercury has the smallest diameter (about 4,879 km). Pluto is smaller still, but it is classified as a dwarf planet, not a planet.

14

Which of the following is the largest planet?



A Neptune



B Jupiter



C Saturn



D Mars

✓ **Correct Answer: B — Jupiter**

Why? Jupiter is the largest planet in the solar system, with a diameter over 11 times that of Earth.

15

The most abundant element in the earth's crust is:



A Oxygen



B Aluminium



C Iron



D Silicon

✓ **Correct Answer: A — Oxygen**

Why? Oxygen makes up about 46% of the Earth's crust by mass, mostly locked up in silicate and oxide minerals.

16

Who was the first to measure earth's radius?



A Galileo



B Copernicus



C Ptolemy



D **Eratosthenes**

✓ **Correct Answer: D — Eratosthenes**

Why? The Greek scholar Eratosthenes (c. 240 BC) calculated Earth's circumference using shadow angles measured at two different locations.

17

Name the nearest star to our sun.**A****Proxima
Centauri****B**

Alpha Scorpii

**C**

Beta Orionis

**D**

Vega

✓ Correct Answer: A — Proxima Centauri

Why? Proxima Centauri, part of the Alpha Centauri system, lies about 4.24 light-years from the Sun — the closest known star.

18

Name the nearest regular galaxy to our milky way:



A NGC 185



B Small
Magellanic
Cloud



C Magellanic
Cloud



D **Andromeda**

✓ **Correct Answer: D — Andromeda**

Why? The Magellanic Clouds are closer but are small, irregular satellite galaxies. Andromeda is the nearest large, regular spiral galaxy to the Milky Way, about 2.5 million light-years away.

19

The lunar eclipse occurs when:



A

Moon is
between the
earth and the
sun



B

**Earth is
between the
sun and the
moon**



C

Sun is between
the earth and
the moon



D

Earth is at right
angles to the
direction of the
sun and the
moon

✓ **Correct Answer: B — Earth is between the sun and the moon**

Why? A lunar eclipse happens when the Earth passes directly between the Sun and the Moon, casting its shadow on the Moon.

20

Most important effect of moon on earth is that it:



A

Causes
weather
change



B

Causes
earthquakes



C

Causes solar
and lunar
eclipse



D

**Effects tides of
the ocean**

✓ **Correct Answer: D — Effects tides of the ocean**

Why? The Moon's gravitational pull is the dominant force generating ocean tides on Earth.

21

Among the planets of the Solar system the position of the Earth from the Sun is:



A Second



B Third



C Fourth



D Fifth

✓ **Correct Answer: B — Third**

Why? Order from the Sun: Mercury, Venus, Earth, Mars — making Earth the third planet.

22

Hailey's comet is visible after every:



A 84 years



B 76 years



C 1000 years



D 365 years

✓ **Correct Answer: B — 76 years**

Why? Halley's Comet has an orbital period of about 76 years; it was last seen in 1986 and will next appear around 2061.

23

Which of the following spacecraft enabled man to step on the moon first?



A Sputnik I



B Luna II



C Vostok I



D **Apollo XI**

✓ **Correct Answer: D — Apollo XI**

Why? NASA's Apollo 11 mission (1969) carried Neil Armstrong and Buzz Aldrin, who became the first humans to walk on the Moon.

24

The setting sun often looks oval in shape because of:



A

The fact that sun really becomes oval in the evening



B

Refraction of rays of sun passing through the atmosphere



C

Optical illusion



D

Dispersion

✓ **Correct Answer: B — Refraction of rays of sun passing through the atmosphere**

Why? Near the horizon, sunlight passes through more atmosphere; differential refraction of the top and bottom edges of the solar disc flattens its apparent shape.

25

Which one of the following is applicable to the planet 'Venus'?



A Smallest



B **Brightest**



C Most dense



D Largest

✓ **Correct Answer: B — Brightest**

Why? Venus's thick, highly reflective cloud cover makes it the brightest planet as seen from Earth.

26

Which of the following planets is popularly known as 'Morning Star'?

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

✓ **Correct Answer: D — Venus**

Why? When Venus appears just before sunrise on the eastern horizon, it is popularly called the 'Morning Star' (and the 'Evening Star' when seen after sunset).

27

The first astronaut to set foot on moon was:



A Yuri Gagarin



B Neil
Armstrong



C Alen Shepherd



D Edwin Aldrin

✓ **Correct Answer: B — Neil Armstrong**

Why? Neil Armstrong stepped onto the lunar surface on 20 July 1969, famously saying it was 'one small step for man, one giant leap for mankind.'

28

The position of a planet when it is nearest to the sun is:

**A Perihelion****B Aphelion****C Apogee****D Perigee**

✓ **Correct Answer: A — Perihelion**

Why? Perihelion is the point in a planet's orbit closest to the Sun; aphelion is the farthest point.

29

Name the largest moon in our solar system:

**A Ganymede****B Titan****C Callisto****D Miranda**

✓ **Correct Answer: A — Ganymede**

Why? Ganymede, a moon of Jupiter, is the largest moon in the solar system — even bigger than the planet Mercury.

30

The sun arises on the North pole on the 21st March and this pole remains in light till?



A 23rd Sept



B 21st Oct



C 22nd June



D 22nd Dec

✓ Correct Answer: A — 23rd Sept

Why? From the March equinox until the September equinox (about 23 Sept), the North Pole receives continuous daylight.

31

The greatest single mass of ice on the Earth is found in:



A Canada



B Siberia



C Antarctica



D Greenland

✓ **Correct Answer: C — Antarctica**

Why? The Antarctic ice sheet holds roughly 90% of the world's ice and about 70% of its fresh water — the largest single ice mass on Earth.

32

The mass of the moon in comparison to the Earth is:



A $1/4$



B $1/81$



C $1/100$



D None of these

✓ **Correct Answer: B — $1/81$**

Why? The Moon's mass is about $1/81$ st of Earth's mass.

33

Excluding the sun and moon, the celestial object which appears brightest in the sky is:



A Venus



B Jupiter



C Polestar



D Cirrus

✓ **Correct Answer: A — Venus**

Why? Venus, thanks to its proximity and reflective clouds, is the brightest planet/object in Earth's sky after the Sun and Moon.

34

The heaviest mass revolving around the sun is:



A Moon



B **Jupiter**



C Neptune



D Pluto

✓ **Correct Answer: B — Jupiter**

Why? Jupiter is by far the most massive planet, containing more mass than all other planets combined.

35

The rising of the evening star indicates the:



A South pole



B North pole



C East



D West

✓ **Correct Answer: D — West**

Why? The 'evening star' (Venus) is seen low in the western sky shortly after sunset, so its appearance points toward the West.

36

Which is the hottest planet in our solar system?



A Venus



B Neptune



C Mars



D Jupiter

✓ **Correct Answer: A — Venus**

Why? Venus's thick carbon dioxide atmosphere traps heat via a runaway greenhouse effect, giving it surface temperatures around 465°C — hotter than Mercury despite being farther from the Sun.

37

Which of the following does not qualify as a planet of our solar system?



A Pluto



B Eris



C Ceres



D All of these

✓ **Correct Answer: D — All of these**

Why? Pluto, Eris and Ceres are all classified as dwarf planets under the IAU's 2006 definition, so none of them qualify as full planets.

38

Which planet is known as the evening star?**A** Saturn**B** Venus**C** Jupiter**D** Mars**✓ Correct Answer: B — Venus**

Why? Venus, visible in the west just after sunset, is popularly called the 'Evening Star.'

39

The planet nearest to the Earth is:**A** Mercury**B** Mars**C** Venus**D** Saturn**✓ Correct Answer: C — Venus**

Why? Venus's orbit brings it closer to Earth, on average, than any other planet.

40

The planet nearest to the Sun is:



A Mars



B Mercury



C Jupiter



D Saturn

✓ **Correct Answer: B — Mercury**

Why? Mercury, the smallest planet, orbits closest to the Sun at an average distance of about 58 million km.

41

On which planet are scientists hopeful of the existence of some type of life?



A Venus



B Saturn



C Mars



D Jupiter

✓ **Correct Answer: C — Mars**

Why? Mars has evidence of past liquid water and conditions that could once have supported microbial life, making it the prime focus of astrobiology research.

42

Which of the following planets is a dwarf planet?



A Makemake



B Ceres



C Pluto



D All of these

✓ **Correct Answer: D — All of these**

Why? Makemake, Ceres and Pluto are all officially recognized dwarf planets.

43

The time taken by Uranus to revolve round the sun is approximately:



A 76 years



B 80 years



C 84 years



D 90 years

✓ **Correct Answer: C — 84 years**

Why? Uranus takes about 84 Earth years to complete one orbit of the Sun.

44

Bodies which usually fall from the sky on the Earth are called:



A Comets



B Meteors



C Meteoroids



D None of these

✓ **Correct Answer: B — Meteors**

Why? A meteoroid is the rock while still travelling through space; once it enters Earth's atmosphere and streaks/burns across the sky, it is called a meteor ('falling' or 'shooting star'). Since the question describes a body actually falling through the sky, the correct term is meteor.

45

Comets are luminous celestial bodies moving round the:



A Sun



B Moon



C Earth



D Jupiter

✓ **Correct Answer: A — Sun**

Why? Comets are icy bodies that orbit the Sun, usually in highly elongated elliptical paths.

46

Sun rises in the east and sets in the west due to the:



A

Shape of the Earth



B

Revolution of the Earth around the Sun



C

Rotation of the Earth on its axis



D

Movement of the Sun

✓ **Correct Answer: C — Rotation of the Earth on its axis**

Why? Earth spins west to east on its axis, which makes the Sun appear to rise in the east and set in the west.

47

The umbra is:



A

The inner and dark portion of the shadow



B

Formed by tangents to the sun and moon



C

Both (a) and (b)



D

None of these

✓ **Correct Answer: A — The inner and dark portion of the shadow**

Why? The umbra is the darkest, innermost part of a shadow, where the light source is completely blocked — as opposed to the lighter, partially-lit penumbra surrounding it.

48

Lunar eclipse occurs only on:**A** First quarter**B Full moon****C** New moon**D** Last quarter**✓ Correct Answer: B — Full moon**

Why? A lunar eclipse can only happen at full moon, when the Earth can pass directly between the Sun and the fully-lit Moon.

49

What are comets made of?**A Ice and dust****B Rock****C Hydrogen****D Metal****✓ Correct Answer: A — Ice and dust**

Why? Comets are often called 'dirty snowballs' — composed of ice, frozen gases and dust that vaporize into a glowing tail as they near the Sun.

50

Solar eclipse occurs on:



A

First quarter
day



B

Full moon day



C

New moon day



D

Last quarter
day

✓ **Correct Answer: C — New moon day**

Why? A solar eclipse occurs at new moon, when the Moon passes directly between the Earth and the Sun, blocking sunlight.