

Astrophysics and the Natural World

Astrophysics · Answer Key · 15 Questions

1. Which celestial body is the primary source of energy for photosynthesis in plants on Earth?

- A) The Moon
- B) The Sun**
- C) Mars
- D) Jupiter

2. What natural phenomenon on Earth is primarily caused by the gravitational pull of the Moon?

- A) Earthquakes
- B) Tides**
- C) Volcanic eruptions
- D) Wind patterns

3. Which nocturnal animal is known to use the position of stars and the Milky Way to navigate during migration?

- A) Dung beetle**
- B) African elephant
- C) Great white shark
- D) Honey bee

4. What is the name of the star that appears almost stationary in the night sky and has been used by migratory birds for navigation?

- A) Betelgeuse
- B) Polaris**
- C) Sirius
- D) Rigel

5. The Earth's atmosphere is primarily kept from drifting away into space by which force?

- A) Magnetism
- B) Gravity**
- C) Solar wind
- D) Static electricity

6. How long does it take for light from the Sun to reach the surface of the Earth?

- A) 8 seconds
- B) 8 minutes**
- C) 8 hours
- D) 8 days

7. Which planet in our solar system has a day-night cycle most similar in length to Earth's?

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

8. What is the source of the Earth's magnetic field, which protects animal life from harmful solar radiation?

- A) The Moon's gravity
- B) The Sun's heat
- C) The Earth's molten iron core**
- D) Atmospheric pressure

9. Which celestial event causes a temporary darkness that can influence the behavior of some animals, such as birds returning to their nests?

- A) Lunar eclipse
- B) Solar eclipse**
- C) Meteor shower
- D) Planetary alignment

10. What provides the light that the Moon reflects toward Earth during the night?

- A) The Moon creates its own light
- B) The Sun**
- C) The Earth
- D) Starlight

11. The study of the potential for life on other planets is known as what?

- A) Geology
- B) Astrobiology**
- C) Meteorology
- D) Paleontology

12. Which layer of the Earth's atmosphere acts as a shield against ultraviolet radiation from the Sun?

A) Troposphere

B) Ozone layer

C) Mesosphere

D) Exosphere

13. Approximately what percentage of the Earth's surface is covered by water, influenced by celestial gravity?

A) 50%

B) 71%

C) 90%

D) 25%

14. What is the main substance that makes up the Sun, providing the heat necessary for life on Earth?

A) Liquid water

B) Hydrogen and helium

C) Solid rock

D) Frozen carbon dioxide

15. Which planet is famous for its ring system, which can be studied by astronomers using telescopes?

A) Saturn

B) Mercury

C) Mars

D) Venus