

Cosmic Geometry and Chromatics

Space Science · Answer Key · 18 Questions

1. What is the primary physical shape of a star like the Sun due to hydrostatic equilibrium and rotation?

- A) Perfect sphere
- B) Oblate spheroid**
- C) Geoid
- D) Perfect cube

2. What is the scientifically determined average color of the observable universe, often referred to as 'Cosmic Latte'?

- A) Deep violet
- B) Beige white**
- C) Pitch black
- D) Neon green

3. Which planet appears deep blue in color due to the presence of methane in its upper atmosphere absorbing red light?

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

4. What specific geometric shape do accretion disks around black holes typically take?

- A) Spherical shell
- B) Toroidal
- C) Flat, thin disk**
- D) Conical

5. What shape do planetary nebulae often exhibit, resulting from the interaction of binary stars and magnetic fields?

- A) Bipolar or hourglass**
- B) Perfectly circular
- C) Irregular amorphous
- D) Pyramidal

6. The color of a star's photosphere is determined by its surface temperature; which color indicates the hottest stellar surface?

- A) Red
- B) Yellow
- C) White
- D) Blue**

7. What is the geometric shape of the path that planets follow around the Sun, as described by Kepler's First Law?

- A) Perfect circle
- B) Ellipse**
- C) Parabola
- D) Hyperbola

8. Which chemical compound gives the planet Mars its distinct reddish-orange appearance?

- A) Iron oxide**
- B) Methane ice
- C) Sulfur dioxide
- D) Solid nitrogen

9. What shape describes the overall structure of the Milky Way galaxy?

- A) Elliptical
- B) Irregular
- C) Barred spiral**
- D) Lenticular

10. What is the color of the 'glow' emitted by a supernova remnant when viewed in X-ray wavelengths?

- A) Invisible to human eye**
- B) Solid gold
- C) Deep crimson
- D) Neon blue

11. What is the shape of the 'terminator line' on the Moon when it is at the first quarter phase?

- A) Curved
- B) Zig-zag
- C) Straight line**
- D) Elliptical arc

12. What is the dominant color of the light emitted by an 'M-type' dwarf star?

- A) Blue
- B) White
- C) Yellow

D) Red

13. The scattering of light in the atmosphere of Titan gives it what primary observable color?

A) Orange-brown

- B) Bright green
- C) Pure white
- D) Deep violet

14. What geometric term describes the 'shadow' cast by a planet during a solar eclipse, specifically the darkest central part?

A) Penumbra

B) Umbra

- C) Antumbra
- D) Corona

15. Which planet is characterized by its pale yellow color caused by ammonia clouds?

A) Saturn

- B) Uranus
- C) Venus
- D) Mercury

16. What shape does the 'Local Group' of galaxies generally occupy in 3D space?

A) A flat sheet

B) An irregular cluster

- C) A perfect cube
- D) A line

17. What color represents the 'redshift' of light from a galaxy that is moving rapidly away from the observer?

A) Shift toward longer wavelengths

- B) Shift toward shorter wavelengths
- C) No change in color
- D) Shift to ultraviolet

18. What is the shape of the magnetic field surrounding the Earth, compressed by solar wind?

A) Perfect sphere

B) Tear-drop

C) Cube

D) Dodecahedron