

# BRITISH ASTRONOMICAL ASSOCIATION

## Christmas Quiz 2016



### ROUND 1: Constellations

**1. What is the brightest star in the constellation of Orion?**

- (A) Betelgeuse
- (B) Capella
- (C) Rigel
- (D) Bellatrix

**2. In which constellation does the star Sirius lie?**

- (A) Monoceros
- (B) Canis Minor
- (C) Canis Major
- (D) Ursa Minor

**3. In which constellation does the southern celestial pole lie?**

- (A) Octans
- (B) Corona Australis
- (C) Tucana
- (D) Pavo

**4. Only one constellation contains no stars brighter than fifth magnitude. Which is it?**

- (A) Monoceros
- (B) Mensa
- (C) Circinus
- (D) Crater

**5. In which constellation would you find the galaxy below?**

- (A) Ursa Major
- (B) Canes Venatici
- (C) Triangulum
- (D) Sculptor



## ROUND 2: Earth and Moon

**6. What constellation does the Quadrantid meteor shower appear to originate from?**

- (A) Gemini
- (B) Leo
- (C) Taurus
- (D) Boötes

**7. What percentage of the Sun will be obscured during the solar eclipse in August 2017, as viewed from London, UK?**

- (A) 0%
- (B) 1%
- (C) 4%
- (D) 9%

**8. What atom is responsible for the green colour in an auroral display:**

- (A) Argon
- (B) Nitrogen
- (C) Oxygen
- (D) Xenon

**9. Which of these combinations correctly match the annual meteor shower and the month their maximum occurs in?**

- (A) Lyrids in April, Perseids in August, Leonids in November.
- (B) Leonids in April, Perseids in August, Lyrids in November.
- (C) Perseids in April, Leonids in August, Lyrids in November.
- (D) Lyrids in April, Leonids in August, Perseids in November.

**10. Roughly how often is there no full moon in the month of February?**

- (A) Four times every 1000 years
- (B) Four times every 500 years
- (C) Four times every 100 years
- (D) Four times a decade



### ROUND 3: Technical Teasers

**11. How many orbital elements are required to fully describe a Keplerian orbit?**

- (A) 3
- (B) 6
- (C) 9
- (D) 12

**12. If the zenith is the point in the sky directly above the observer, what is the opposite point called, directly beneath the observer?**

- (A) Syzygy
- (B) Nadir
- (C) Apocentre
- (D) Point of osculation



**13. Who is credited with discovering helium?**

- (A) Ernest Rutherford
- (B) Joseph von Fraunhofer
- (C) Joseph Normal Lockyer
- (D) Annie Jump Cannon

**14. What is the device below called?**

- (A) Bahtinov Mask
- (B) Hartmann Mask
- (C) Kolmogorov-Smirnov Filter
- (D) Bayer Filter



**15. What type of mount is shown below?**

- (A) Cross axis mount
- (B) Horseshoe mount
- (C) Inverted fork mount
- (D) Yoke mount



## ROUND 4: Rocky worlds

**16. How many moons in total do the terrestrial planets have in our solar system?**

- (A) 1
- (B) 2
- (C) 3
- (D) 4



**17. What is the furthest angular distance Mercury appears to move away from the Sun as viewed from Earth?**

- (A) 18 degrees
- (B) 28 degrees
- (C) 35 degrees
- (D) 40 degrees

**18. Which was the first spacecraft to take close-up images of the surface of Mars?**

- (A) Mars 1
- (B) Mars 4
- (C) Mariner 4
- (D) Mariner 6

**19. The Venera 13 lander operated on the surface of Venus for longer than any other probe. For how long after touchdown did it transmit data?**


- (A) 30 minutes
- (B) 1 hour
- (C) 2 hours
- (D) 4 hours

**20. The prime meridian of Mars passes through the small circular feature on Mars, *Sinus Meridiani*. To whom is its naming attributed?**

- (A) Camille Flammarion
- (B) George Airy
- (C) Giovanni Schiaparelli
- (D) Johan Heinrich von Mädler







## ROUND 5: Beyond the Frost Line

**21. In which decade were the rings of Uranus discovered?**

- (A) 1920s
- (B) 1930s
- (C) 1950s
- (D) 1970s

**22. How long does it take light to travel from the Sun to Neptune?**

- (A) 1 hour
- (B) 2 hours
- (C) 3 hours
- (D) 4 hours

**23. Which of these asteroids has the smallest mass?**

- (A) Ceres
- (B) Hygiea
- (C) Pallas
- (D) Vesta

**24. The great comet of 1858 is named after whom?**

- (A) Coggia
- (B) Donati
- (C) Halley
- (D) Hyakutake

**25. Which of Jupiter's moons has an orbital period of just over 7 days?**

- (A) Callisto
- (B) Europa
- (C) Ganymede
- (D) Io



## ROUND 6: Instruments Old and New

**26. Which observatory is this?**

- (A) Lick Observatory
- (B) Lowell Observatory
- (C) Mount Wilson Observatory
- (D) Palomar Observatory



**27. William Herschel's 40-foot telescope had a primary mirror of what diameter?**

- (A) 23 inches
- (B) 47 inches
- (C) 62 inches
- (D) 94 inches

**28. How much data does the European Space Agency download from Gaia each day?**

- (A) 40 gigabytes
- (B) 400 gigabytes
- (C) 40 terabytes
- (D) 400 terabytes

**29. What will be the total mass of the James Webb Telescope?**

- (A) 500 kg
- (B) 2500 kg
- (C) 4500 kg
- (D) 6500 kg



**30. In the illustration of a Yagi antenna below, what name is given to the rod marked with the red arrow?**

- (A) Boom
- (B) Director
- (C) Driven element
- (D) Reflector



## ROUND 7: Outside the Solar System

**31. The Pillars of Creation were imaged by the Hubble Space Telescope. But in which Messier object can they be found?**

- (A) M8
- (B) M16
- (C) M20
- (D) M78

**32. The Hubble Ultra-Deep Field image was taken in which constellation?**

- (A) Cetus
- (B) Fornax
- (C) Sculptor
- (D) Sagittarius

**33. What is the name of this nebula?**

- (A) California Nebula
- (B) Cone Nebula
- (C) Triffid Nebula
- (D) Carina Nebula





**34. What is the most observed variable star in the Variable Star Section's visual database?**

- (A) Mira
- (B) R Leonis
- (C) Delta Cephei
- (D) R Coronae Borealis

**35. What is this planetary nebula known as?**

- (A) Blinking Planetary Nebula
- (B) Eskimo Nebula
- (C) Lemon Slice Nebula
- (D) Little Ghost Nebula

