

Name: _____ Date: _____

Rocket Through the Cosmos: College Galaxy & Universe Quiz

Undergraduates identify galactic morphologies, explain expansion evidence, and classify cosmic structures during this high-energy introductory astronomy formative assessment.

1. Which specific light-year distance best approximates the diameter of the Andromeda Galaxy (M31), a neighbor often compared to our own?

- A. 10,000 light-years
- B. 220,000 light-years
- C. 2.5 million light-years
- D. 93 billion light-years

2. Edwin Hubble's observations of Cepheid variables in the 'Andromeda Nebula' proved that such objects were distinct galaxies outside our own.

- A. True
- B. False

3. The Sombrero Galaxy (M104) is famous for its massive central bulge and prominent dust lane, categorizing it primarily as a _____ galaxy.

- A. Lenticular
- B. Irregular
- C. Spiral
- D. Elliptical

4. What is the primary characteristic of 'S0' galaxies on the Hubble Tuning Fork diagram?

- A. They have active star formation in prominent spiral arms.
- B. They are purely spherical with no disk component.
- C. They possess a disk but lack visible spiral arm structures.
- D. They are the result of recent galactic collisions.

5. The 'Great Attractor' is a massive gravitational anomaly in intergalactic space that is pulling the Milky Way and other clusters toward it.

- A. True
- B. False

6. Arp 220 is a well-known example of an Ultra-Luminous Infrared Galaxy (ULIRG), which is typically caused by _____.

- A. The death of a first-generation star
- B. A galactic merger triggering starbursts
- C. Evaporation of a supermassive black hole
- D. The cooling of the cosmic microwave background

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7. Which discovery by Vera Rubin provided strong evidence for the existence of dark matter within galaxies?

- A. The observation of gravitational waves
- B. The redshift of distant quasars
- C. Flat galaxy rotation curves
- D. The temperature of the solar corona

8. Most of the galaxies we observe in the local universe are moving toward the Milky Way due to gravity.

- A. True
- B. False

9. The Laniakea Supercluster is the specific cosmic structure that contains which of the following?

- A. The Milky Way and the Virgo Cluster
- B. Only the planets in our solar system
- C. The first stars ever formed in the universe
- D. The entire observable universe

10. The 'Cosmic Dawn' refers to the era in the universe's history when _____ first began to shine.

- A. Planetary nebulae
- B. Supermassive black holes
- C. The first stars (Population III)
- D. Dark energy particles