

TAKEN FROM HORIZONS 7TH EDITION CHAPTER 13 TUTORIAL QUIZ

1.

Which of the following statements is FALSE?

- a. Ring galaxies can be produced by head-on collisions between galaxies.
- b. The ratio of the number of elliptical to spiral galaxies remains constant over time.
- c. The Magellanic Clouds may eventually be "cannibalized" by our Galaxy.
- d. The shape of a galaxy can be influenced by collision with another galaxy.

answer: b

2.

What are the implications if your astronomy teacher discovers that methods of determining distances to galaxies are off by 100%, that galaxies are one-half as distant as we currently believe them to be?

- a. None of these choices. It would not alter our theories in any important way.
- b. The Hubble constant would be one-half as great.
- c. The mv's of all the galaxies are one-half what we currently calculate them to be.
- d. The sizes of the galaxies are twice what we currently calculate them to be.

answer: b

3.

Of the following, the one that is the least likely consequence of the collision of two galaxies is

- a. distortion of the appearances of the galaxies.
- b. bursts of star formation within the galaxies.
- c. a merger of the galaxies.
- d. collisions of many stars within the galaxies.

answer: d

4.

With respect to the Local Group,

- a. the Andromeda galaxy is the nearest galaxy to the Milky Way.
- b. the Milky Way is at the center, around which other galaxies revolve.
- c. it contains mostly elliptical galaxies.
- d. it contains billions of galaxies.

answer: c

5.

The Andromeda and Milky Way galaxies are classified as _____ galaxies.

- a. SBa
- b. Irregular
- c. E4
- d. Sb

answer: d

6.

The presence of giant elliptical galaxies at the centers of rich clusters of galaxies lends evidence to the theory that

- a. massive black holes are responsible for poor clusters merging into rich clusters.
- b. elliptical galaxies merge to become spiral galaxies.
- c. none of these choices. Giant elliptical galaxies are not found in rich clusters.
- d. elliptical galaxies can form by the merging of two or more spiral galaxies.

answer: d

7.

The manner in which a galaxy forms and evolves is strongly influenced by the

- a. look-back time of the galaxy.
- b. amount of gas and dust in the galaxy.
- c. the number of galaxies in the cluster to which it belongs.
- d. none of these choices. Astronomers don't know why galaxies form and evolve the way they do.

answer: b

8.

Galaxies appear to differ dramatically in

- a. size.
- b. mass.
- c. all of these choices.
- d. luminosity.

answer: c

9.

Which of the following statements about galaxies is TRUE?

- a. The largest galaxies known are those of the elliptical type.
- b. It is easy to find the size of a galaxy if we know its mass.
- c. The diameter and luminosity of a galaxy determine its type.
- d. Most spiral galaxies are much larger than the Milky Way Galaxy.

answer: a

10.

What is the method by which the rate of rotation of a galaxy is calculated?

- a. Hubble Constant.
- b. Velocity dispersion method.
- c. Doppler effect applied to spectra taken of opposite sides of the galaxy.
- d. Comparison of series of photographs taken over a long period of time.

answer: c

11.

Knowing the rate of rotation of a galaxy, we can determine its

- a. age.
- b. luminosity.
- c. none of these choices can be determined just because we know its rate of rotation.
- d. mass.

answer: d

12.

Which of the following is NOT a method of determining the mass of a galaxy?

- a. Rotation curve method.
- b. Velocity dispersion method.
- c. Cluster method.
- d. Tuning fork method.

answer: d

13.

Which of the following is arranged in approximate order of increasing gas, dust, and rate of star formation?

- a. E0, E7, S0, Sa, Sb, Sc, Irr.
- b. Sc, Sb, Sa, S0, Irr, E0, E7.
- c. Irr, E0, E7, SBc, SBb, SBc, Sc, Sb, Sa.
- d. E7, E0, S0, Sa, Sb, Sc, Irr.

answer: a

14.

What is it that allowed for discovery of other galaxies in the universe as late as the 1920s?

- a. Large enough optical telescopes and sensitive enough photographic plates.
- b. Earth-orbiting satellites carrying optical telescopes.

- c. None of these choices. Galaxies were known to exist long before the beginning of the current century.
- d. Radio telescopes.

answer: a

15.

How do S0 galaxies differ from other spiral galaxies?

- a. They lack the basic ingredients for star formation.
- b. They are round in shape (hence the 0-designation).
- c. They do not differ from other spiral galaxies
- d. They have no spiral arms.

answer: a

16.

What can we say about the galaxies classified in the order of Sa, Sb, Sc, Sd?

- a. Increasing order in terms of rate of rotation.
- b. Decreasing order in terms of percentage of gas and dust.
- c. Increasing order in terms of mass.
- d. Decreasing order in terms of size of nucleus.

answer: d

17.

Which is a good example of a head-on collision between two galaxies?

- a. An SO galaxy.
- b. the Cartwheel Galaxy.
- c. All of these choices. All galaxies are thought to form from collisions between galaxies.
- d. the Magellanic Clouds.

answer: b

18.

Rich clusters are more prone to _____ than poor clusters.

- a. contain elliptical galaxies
- b. being discovered by using Hubble's law
- c. contain irregular and spiral galaxies
- d. being discovered by the velocity dispersion method

answer: a
