

NAME: _____

- 1) Go online or use your textbook to find examples of each of the following types of objects. For each object, write down how it is identified. This identification should look something like *M31*, or *NGC 6245*, or *IC 1234*, or *Arp 220*, or maybe even something else entirely. If you can't see any obvious identification, find another example that is identified.

A spiral galaxy with prominent spiral arms: _____

A spiral galaxy with faint or no spiral arms: _____

A barred spiral galaxy: _____

An elliptical galaxy that is highly spherical: _____

An elliptical galaxy that is elongated: _____

An irregular galaxy: _____

Another irregular galaxy: _____

A quasar: _____

A radio galaxy with amazing "jets": _____

A starburst galaxy: _____

A galaxy cluster: _____

- 2) The largest galaxies in the Universe are...
- a) spiral galaxies b) elliptical galaxies c) irregular galaxies
- 3) In a spiral galaxy, where is most of the star formation going on?
- a) in the disk b) in the hub c) in the halo
- 4) How does the amount of interstellar gas in an elliptical galaxy compare to that in a spiral galaxy?
- a) much less than in a spiral b) much more than in a spiral c) about the same
- 5) How does the percentage of young stars in an elliptical galaxy compare to that in a spiral galaxy?
- a) much less than in a spiral b) much more than in a spiral c) about the same
- 6) Which of the following are types of active galaxies? (mark *all* that apply)
- a) quasars b) pulsars c) blazars d) Seyfert galaxies e) radio galaxies
- 7) Which of the following statements are true concerning *quasars* as compared to *normal galaxies*? (mark *all* that apply)
- a) quasars are much smaller b) quasars are usually more luminous
- c) quasars have more massive black holes in their centers

(OVER →)

- 8) Draw two diagrams of our galaxy, one “face-on” and one “edge-on.” The diagrams should have labels indicating the following information:

Face-on view: the disk; the bulge; the spiral arms; our location in the Galaxy

Edge-on view: the disk; the bulge; the halo; our location in the Galaxy

Face-on

Edge-on

- 9) What is the approximate diameter of the disk of our galaxy, in light-years?
 a) 10,000 b) 50,000 c) 28,000 d) 100,000 e) 300,000
- 10) Approximately how far are we right now from the center of our galaxy, in light-years?
 a) 10,000 b) 50,000 c) 28,000 d) 100,000 e) 300,000
- 11) How does the percentage of young stars in the halo of our Galaxy compare to that in the disk?
 a) much less than in the disk b) much more than in the disk c) about the same
- 12) Which of the following is the best estimate of the mass of the black hole in the center of our Galaxy?
 a) $30 M_{\text{Sun}}$ b) $30,000 M_{\text{Sun}}$ c) $3,000,000 M_{\text{Sun}}$ d) $3,000,000,000 M_{\text{Sun}}$
- 13) You are looking at a *nebula* in your telescope. Identify three things that it could be.
 1: _____ 2: _____ 3: _____