

Name: _____

Intro Astro Lab Prep Quiz: Lab 11: Galaxies

Instructions: There are $(10 + x)$ multiple-choice problems each worth 10 marks for a total of $(100+10x)$ marks altogether. Choose the **BEST** answer, completion, etc., and **DARKEN** fully the appropriate circle on the table provided below. Read all responses carefully. **NOTE** long detailed responses won't depend on hidden keywords: keywords in such responses are bold-faced capitalized. This is a 10-or-so-minute quiz.

Answer Table for the Multiple-Choice Questions

	a	b	c	d	e		a	b	c	d	e
1.	O	O	O	O	O	6.	O	O	O	O	O
2.	O	O	O	O	O	7.	O	O	O	O	O
3.	O	O	O	O	O	8.	O	O	O	O	O
4.	O	O	O	O	O	9.	O	O	O	O	O
5.	O	O	O	O	O	10.	O	O	O	O	O

011 qmult 00100 1 4 5 easy deducto-memory: galaxies defined

1. "Let's play *Jeopardy!* For \$100, the answer is: They are large gravitationally bound systems of stars which have undergone multiple cycles of star formation, evolution, and death. In some cases, the cycles have nearly ended and almost all the stars are now just aging. In other cases, the cycles continue to the present epoch of cosmic time and are likely to continue for many billions of years into the future."

What are _____, Alex?

- a) planetary systems b) binaries c) globular clusters d) bulges e) galaxies

SUGGESTED ANSWER: (e)

Wrong answers:

- a) As Lurch would say AAAARGH.

Redaction: Jeffery, 2013jan01

011 qmult 00130 1 4 3 easy deducto-memory: Hubble's law discoverer

2. "Let's play *Jeopardy!* For \$100, the answer is: This pioneer of extragalactic astronomy is the discoverer of Hubble's law as an observational result. The mathematical statement of the law includes as a factor the relative rate of the expansion of the universe at cosmic present. The said pioneer also devised the empirical galaxy morphological classification scheme that bears his name."

Who is _____, Alex?

- a) William Parsons, 3rd Earl of Rosse (1800–1867) b) Vesto Slipher (1875–1969)
 c) Edwin Hubble (1889–1953) d) Carl Seyfert (1911–1960) e) Allan Sandage (1926–2010)

SUGGESTED ANSWER: (c)

Wrong answers:

- a) As Lurch would say AAAARGH.

Redaction: Jeffery, 2013jan01

011 qmult 00150 1 4 4 easy deducto-memory: Carl Seyfert

3. "Let's play *Jeopardy!* For \$100, the answer is: This pioneer of extragalactic astronomy was the founding director of Dyer Observatory—Dyer, not Dire—in Nashville, Tennessee."

Who is _____, Alex?

- a) William Parsons, 3rd Earl of Rosse (1800–1867) b) Vesto Slipher (1875–1969)
 c) Edwin Hubble (1889–1953) d) Carl Seyfert (1911–1960) e) Allan Sandage (1926–2010)

SUGGESTED ANSWER: (d)

Wrong answers:

- a) As Lurch would say AAAARGH.

Redaction: Jeffery, 2013jan01

011 qmult 00200 1 1 3 easy memory: Hubble sequence

4. The _____ sequence is an empirical galaxy classification scheme that nowadays has a theoretical understanding. Its eponym (the person after which it is named) concluded it was premature to interpret the _____ sequence as an evolutionary sequence. We now know that it is not, in fact, an evolutionary sequence in a simple sense.

- a) Rosse b) Slipher c) Hubble d) Seyfert e) Sandage

SUGGESTED ANSWER: (c)

Wrong answers:

- a) William Parsons, 3rd Earl of Rosse, pioneer of extragalactic astronomy.

Redaction: Jeffery, 2013jan01

011 qmult 00210 1 4 1 easy deducto-memory: hubble tuning fork diagram

5. The two most common galaxy morphological classification schemes are conventionally illustrated with a _____ diagram.

- a) tuning fork b) pitchfork c) Southfork d) South Park e) Gosford Park

SUGGESTED ANSWER: (a)

Wrong answers:

- a) As Lurch would say AAAARGH.

Redaction: Jeffery, 2013jan01

011 qmult 00220 1 1 1 easy memory: main galaxy types: ellipticals

6. The 6 main galaxy types are _____, lenticulars, spirals, intermediate spirals, barred spirals, and irregulars.

- a) ellipticals b) perpendiculars c) spectaculars d) chroniculars e) consulars

SUGGESTED ANSWER: (a)

Wrong answers:

- e) Named for the consuls of the Roman Republic.

Redaction: Jeffery, 2013jan01

011 qmult 00230 1 4 1 easy deducto-memory: ellipticals described

7. “Let’s play *Jeopardy!* For \$100, the answer is: These galaxies are spheroidal in shape, largely lack interstellar dust, and consist mainly of very old stars.”

What are _____, Alex?

- a) ellipticals b) lenticulars c) spirals d) barred spirals e) irregulars

SUGGESTED ANSWER: (a)

Wrong answers:

- a) As Lurch would say AAAARGH.

Redaction: Jeffery, 2013jan01

011 qmult 00300 1 1 2 easy memory: galaxy clusters

8. Galaxies are often found in gravitationally bound systems called:

- a) bunches. b) clusters. c) flocks. d) gaggles. e) prides.

SUGGESTED ANSWER: (b)

Wrong answers:

- d) Sounds right to me.

Redaction: Jeffery, 2013jan01

011 qmult 00320 1 4 2 easy deducto-memory: rich and poor clusters

9. "Let's play *Jeopardy!* For \$100, the answer is: Rich ones typically have thousands of galaxies, poor ones hundreds of galaxies."

What are _____, Alex?

- a) galaxies b) galaxy clusters c) binaries d) Hubbles e) millionaires

SUGGESTED ANSWER: (b)

Wrong answers:

- e) Millions.

Redaction: Jeffery, 2013jan01

011 qmult 00340 1 1 5 easy memory: Virgo cluster location constellation

10. The Virgo cluster is mostly in the constellation:

- a) Alien b) Lyra c) Norma d) Scorpius e) Virgo

SUGGESTED ANSWER: (e)

Wrong answers:

- a) Not so mundane a constellation that you could ever find it if you tried.

Redaction: Jeffery, 2013jan01