

Name: _____

Intro Astro Lab Quiz All: Lab 1: Constellations

Instructions: There are $(10 + x)$ multiple-choice problems each worth 1 mark for a total of $(10 + x)$ 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 minute quiz.

001 qmult 00100 1 4 5 easy deducto-memory: naked-eye astronomy defined

1. "Let's play *Jeopardy!* For \$100, the answer is: It is observing the sky without instruments."

What is _____, Alex?

- a) astronomy b) cosmology c) cosmetology d) free-eye astronomy
e) naked-eye astronomy

SUGGESTED ANSWER: (e)

Wrong answers:

- c) Yes, cosmetology and cosmology are nearly the same thing.
d) Reasonable guess, but wrong.

Redaction: Jeffery, 2013jan01

001 qmult 00110 1 1 2 easy memory: naked-eye astronomical objects

2. Naked-eye astronomical objects include the Moon, the 5 non-Earth inner planets, bright stars, constellations, _____, and, under dark-sky conditions, a few nebulae (meaning cloudy objects in this context).

- a) the moons of Jupiter b) the Milky Way c) the ionosphere d) cumulus clouds
e) ions

SUGGESTED ANSWER: (b)

Wrong answers:

- e) Well you do see them in a sense, but this is not the best answer.

Redaction: Jeffery, 2013jan01

001 qmult 00200 1 4 2 easy deducto-memory: celestial sphere defined

3. "Let's play *Jeopardy!* For \$100, the answer is: It is an imaginary sphere centered on the Earth, set at infinity, and used to project all astronomical objects on for mapping."

What is the _____, Alex?

- a) celestial globe b) celestial sphere c) celestial cube d) Boundless
e) sphere of the fixed stars

SUGGESTED ANSWER: (b)

Wrong answers:

- d) This is Anaximander's (c. 610–c. 546 BCE) principle or substance for all things.
e) This is the historical ancestor of the modern celestial sphere.

Redaction: Jeffery, 2013jan01

001 qmult 00210 1 1 2 easy memory: zenith, nadir defined

4. Directly overhead is the _____ and in the opposite position on the celestial sphere is the _____.

- a) nadir; zenith b) zenith; nadir c) zenith; the meridian d) the meridian; nadir
e) the horizon; the meridian

SUGGESTED ANSWER: (b)

Wrong answers:

- a) A nonsense answer.

Redaction: Jeffery, 2013jan01

001 qmult 00220 1 4 5 easy deducto-memory: the meridian defined

5. “Let’s play *Jeopardy!* For \$100, the answer is: It is a great circle on the celestial sphere that intersects due north, the zenith, due south, and the nadir.”

What is the _____, Alex?

- a) ecliptic b) zenith c) nadir d) meringue e) meridian

SUGGESTED ANSWER: (e)

Wrong answers:

- a) As Lurch would say AAAARGH.

Redaction: Jeffery, 2013jan01

001 qmult 00230 1 1 1 easy memory: transit of the meridian

6. When a astronomical object crosses the meridian due to the daily rotation of the celestial sphere on the celestial axis, the event is called in astro jargon a _____ of the meridian.

- a) transit b) crossing c) saltation d) leaping e) telescoping

SUGGESTED ANSWER: (a)

Wrong answers:

- c) Saltation: A leap, jump or dance.
e) A nonsense answer.

Redaction: Jeffery, 2013jan01

001 qmult 00300 1 1 3 easy memory: equatorial coordinates

7. _____ are the main coordinates for locating astronomical objects on the sky (which in this context is also the celestial sphere). They are analogous to longitude and latitude with _____ replacing longitude and _____ replacing latitude.

- a) Equatorial coordinates; right ascension; destination
b) **EQUILATERAL** coordinates; right ascension; declination
c) Equatorial coordinates; right ascension; declination
d) Equatorial coordinates; right dissension; declination
e) **EQUILATERAL** coordinates; right dissension; destination

SUGGESTED ANSWER: (c)

Wrong answers:

- e) Everything is wrong.

Redaction: Jeffery, 2013jan01

001 qmult 00400 1 4 4 easy deducto-memory: planisphere defined

8. “Let’s play *Jeopardy!* For \$100, the answer is: It is a primitive sort of analog computer used for calculating the local sky above the horizon for any time for a fixed latitude.”

What is a _____, Alex?

- a) telescope b) cellphone c) sky map d) planisphere e) celestial globe

SUGGESTED ANSWER: (d)

Wrong answers:

- b) Nowadays this will calculate the local sky and a lot more, but it is not analog.
c) This is not a computer in any reasonable sense of the word.

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001 qmult 00500 1 1 1 easy memory: bright stars defined

9. When one says _____ in the context of astronomical observations, one usually means stars of high apparent brightness. “Apparent” in astronomy has the meaning “as observed from the Earth”.

a) bright stars b) dim stars c) dim moons d) artificial satellites e) asteroids

SUGGESTED ANSWER: (a)

Wrong answers:

b) Exactly wrong.

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001 qmult 00510 1 1 1 easy memory: named stars

10. The brightest stars in the sky often have traditional names mostly derived either from Latin or Arabic. These stars are called:

a) named stars. right b) unnamed stars. c) unnameable stars d) dim stars.
e) death stars.

SUGGESTED ANSWER: (a)

Wrong answers:

e) Oh, c'mon.

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001 qmult 00520 1 1 5 easy memory: star name spelled backwards

11. Which of the following named stars is a man's name spelled backwards?

a) Aldebaran b) Algol c) Ankaa d) Antares e) Navi

SUGGESTED ANSWER: (e) Astronaut Gus Grissom gave the star Gamma Cassiopeiae another name, his own middle name Ivan spelled backwards.

Wrong answers:

b) Logla?

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001 qmult 00530 1 1 3 easy memory: Bayer designation

12. Many bright stars have a Bayer designation. The designation is a Greek letter followed by the genitive form of the star's parent constellation's Latin name. The Greek letters are assigned approximately in order of apparent brightnesses of the stars: the brightest star being alpha (or α), the 2nd brightest being beta (or β), etc. The originator of the Bayer designation system is:

a) Callisto (fl. 1300? BCE). b) King Arthur (fl. 500 CE). c) Johann Bayer (1572–1625).
d) Joseph Barbera (1911–2006). e) Bear Bryant (1913–1983).

SUGGESTED ANSWER: (c)

Wrong answers:

a) Turned in a bear in myth.

b) If there ever was a historical King Arthur, he may have been nicknamed the Bear.

d) The creator of *Johnny Quest*.

e) A football coach of some note.

Redaction: Jeffery, 2013jan01

001 qmult 00540 1 1 1 easy memory: Bayer designation alpha stars

13. In the Bayer designation scheme for bright stars in constellations, the star of highest apparent brightness in a constellation is **USUALLY** usually labeled:

a) alpha (α). b) beta (β). c) gamma (γ). d) delta (δ). e) epsilon (ϵ).

SUGGESTED ANSWER: (a)

Wrong answers:

- b) C'mon.

Redaction: Jeffery, 2013jan01

001 qmult 00542 1 1 2 easy memory: Bayer designation beta stars

14. In the Bayer designation scheme for bright stars in constellations, the star of second highest apparent brightness in a constellation is usually labeled:

- a) alpha (α). b) beta (β). c) gamma (γ). d) delta (δ). e) epsilon (ϵ).

SUGGESTED ANSWER: (b)

Wrong answers:

- a) C'mon.

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001 qmult 00550 1 1 4 easy memory: Bayer designation 2nd brightest star in Taurus

15. What is the Bayer designation for the 2nd brightest star (by tradition if not always in fact) in the constellation Taurus?

- a) α Orionis. b) β Orionis. c) α Tauri. d) β Tauri. e) γ Tauri.

SUGGESTED ANSWER: (d)

Also called Elnath.

One has to insert the “by tradition” in the question since the Bayer designations sometimes do not correspond to the actual brightness order. Bayer or his acolytes sometimes got the brightness order wrong—they goofed—understandable in the pre-modern era.

Wrong answers:

- a) Why would it be in Orion?
c) Would the 2nd brightest star be an alpha?

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001 qmult 00552 1 1 4 easy memory: Bayer designation 5th brightest star in Taurus

16. What is the Bayer designation for the 5th brightest star (by tradition if not always in fact) in the constellation Taurus? Recall the Greek alphabet: $\alpha\beta\gamma\delta\epsilon\zeta\eta\theta\iota\kappa\lambda\mu\nu\xi\omicron\rho\sigma\tau\upsilon\phi\chi\psi\omega$.

- a) χ Orionis. b) ω Orionis. c) δ Tauri. d) ϵ Tauri. e) ψ Tauri.

SUGGESTED ANSWER: (d)

Also called Ain or Oculus Borealis both of which mean eye.

One has to insert the “by tradition” in the question since the Bayer designations sometimes do not correspond to the actual brightness order. Bayer or his acolytes sometimes got the brightness order wrong—they goofed—understandable in the pre-modern era.

Wrong answers:

- a) Why would it be in Orion?
c) Would the 5th brightest star be a delta?

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001 qmult 00600 1 4 4 easy deducto-memory: constellation defined

17. “Let’s play *Jeopardy!* For \$100, the answer is: This astronomical object is traditionally defined as a traditionally recognized group of stars that are relatively close in angle on the sky. In three-dimensional space, the stars can be very far apart and they are usually not physically interacting with each other. In modern astronomy, the object is defined as a patch on the sky. There are only 88 of such modern objects each containing their traditional analogue. The 88 patches tile the whole sky without overlap. Thus, any other astronomical object can be located in a patch.”

What is a _____, Alex?

- a) galaxy b) planetary system c) nebula d) constellation e) planisphere

SUGGESTED ANSWER: (d)

Wrong answers:

- a) As Lurch would say AAAARGH.

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001 qmult 00610 1 1 4 easy memory: constellation appearance

18. Overwhelmingly most constellations look _____ like the things they are named for.

- a) exactly b) nearly exactly c) 70 % d) nothing much e) exactly inversely

SUGGESTED ANSWER: (d)

The suggested answer is a strong statement, but it is closer to the truth than any of the others.

Usually the object a constellation is named for can be mapped onto the constellation with stars located at critical points. But the mapping is highly non-unique. If a person saw a set of constellation stars, they could plausibly map almost anything they like onto to it.

There are a few constellations which look like the thing they are named for, but still not uniquely so. For example, the Big Dipper does look like a dipper. But it has also been called the Wain (i.e. wagon) and the Plough, and it is part of Ursa Major (the Big Bear).

Wrong answers:

- e) A nonsense answer.

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001 qmult 00630 1 1 3 easy memory: three northern sky constellations

19. Three constellations relatively near the north celestial pole (the NCP) are:

- a) Mars, Jupiter, Pluto. b) Ursa Major, Ursa Minor, the Southern Cross.
c) Ursa Major, Ursa Minor, Cassiopeia. d) Ursa Major, Ursa Minor, the Northern Cross.
e) Frankenstein, Dracula, the Mummy.

SUGGESTED ANSWER: (c)

Wrong answers:

- a) Oh, c'mon.

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001 qmult 00632 1 1 3 easy memory: three northern sky constellations 2

20. Three constellations relatively near the north celestial pole (the NCP) are Ursa Major, Ursa Minor, and:

- a) Pluto. b) the Southern Cross. c) Cassiopeia. d) the Northern Cross.
e) the Mummy.

SUGGESTED ANSWER: (c)

Wrong answers:

- a) Oh, c'mon.

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001 qmult 00750 1 1 1 easy memory: your sign is Aries

21. Say the Sun was in the sign of Aries (which is approximately where the constellation Aries was in 500 BCE) when you were born. Your astrological sign is:

- a) Aries. b) Scorpio. c) Canis Major. d) Democritus. e) Taurus.

SUGGESTED ANSWER: (a)

Wrong answers:

- c) Not a zodiac constellation.
d) He ought to have a constellation. I think we could boot out Ophiuchus. Only very rare people would be Democrituses.

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001 qmult 00752 1 1 5 easy memory: your sign is Taurus

22. Say the Sun was in the sign of Taurus (which is approximately where the constellation Taurus was in 500 BCE) when you were born. Your astrological sign is:

- a) Virgo. b) Scorpio. c) Canis Major. d) Democritus. e) Taurus.

SUGGESTED ANSWER: (e)

Wrong answers:

- c) Not a zodiac constellation.
- d) He ought to have a constellation. I think we could boot out Ophiuchus. Only very rare people would be Democrituses.

Redaction: Jeffery, 2013jan01