



## Review Test Submission: CHAPTER QUIZ

User	Wenyin San
Course	1501_Stars Galaxies and the Universe [1501_ASTR_1960_00]
Test	CHAPTER QUIZ
Started	1/27/15 5:52 PM
Submitted	1/27/15 6:33 PM
Due Date	2/3/15 7:00 AM
Status	Completed
Attempt Score	20 out of 25 points
Time Elapsed	41 minutes out of 1 hour and 30 minutes.
Instructions	

### Question 1

1 out of 1 points



What is astronomy?

Selected  
Answer:



a.  
an attempt to understand the physical laws and  
processes of the universe

Correct  
Answer:



d.  
an attempt to understand the physical laws and  
processes of the universe

Response  
Feedback:

FEEDBACK: Astronomy is more than cataloging objects in the sky. Astronomy is the search for understanding of the physical principles that govern the universe (page 4).

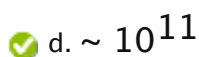
### Question 2

1 out of 1 points



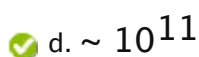
How many galaxies are in the universe?

Selected Answer:



d.  $\sim 10^{11}$

Correct Answer:



d.  $\sim 10^{11}$

Response  
Feedback:

FEEDBACK: It is estimated that about as many galaxies exist in the universe as stars exist in the Milky Way Galaxy—several hundred billion (page 4).

## Question 3

0 out of 1 points



How quickly does light travel?

Selected Answer: c. around Earth in one second

Correct Answer: b. around Earth in a fraction of a second

Response Feedback: FEEDBACK: Light can encircle Earth in less than 1/7 of a second (page 5). See also the Lookback Time Simulator.

## Question 4

1 out of 1 points



What is the universe?

Selected Answer: b.  
all matter and energy, including Earth, stars, galaxies, and the contents of intergalactic spaceCorrect Answer: a.  
all matter and energy, including Earth, stars, galaxies, and the contents of intergalactic space

Response Feedback: FEEDBACK: The universe is our term for the cosmos as a whole; we can observe objects in our universe to about 13.7 billion light-years away (page 4).

## Question 5

1 out of 1 points



Pluto

Selected Answer: b. has been reclassified from planet to dwarf planet.

Correct Answer: c. has been reclassified from planet to dwarf planet.

Response Feedback: FEEDBACK: Pluto's orbit about the Sun has not changed and it is still a member of our Solar System. Since it bears a resemblance to many other dwarf objects in our Solar System, Pluto has been reclassified as a dwarf planet (page 17).

## Question 6

0 out of 1 points



Which of the following is NOT a scientific hypothesis?

Selected Answer: c. The Moon is made of cheese

Correct Answer: b. Light travels on a medium called aether.

Response Feedback: FEEDBACK: A scientific hypothesis must be falsifiable or

Feedback: disprovable, and only after repeated attempts to disprove it, does a hypothesis start to become accepted as reality. (page 9).

### Question 7

1 out of 1 points



What is the cosmological principle?

Selected Answer:

☒ c.

the proposition that natural laws should behave the same everywhere in the universe

Correct Answer:

☒ a.

the proposition that natural laws should behave the same everywhere in the universe

Response Feedback:

FEEDBACK: The cosmological principle is the assumption that laws of physics are the same throughout all of space and time (page 9).

### Question 8

1 out of 1 points



The time it takes light to travel from the Sun to Earth is about

Selected Answer:

☒ c. 8 minutes.

Correct Answer:

☒ c. 8 minutes.

Response Feedback:

FEEDBACK: The Sun is about 93,000,000 miles away and light travels at 186,000 miles per second; dividing the former by the latter gives 500 seconds, or about 8 minutes (page 5). See also the Lookback Time Simulator.

### Question 9

0 out of 1 points



Which of the following lists of sizes are in order from smallest to largest?

Selected Answer:

☒ a.

Neptune's orbit, the diameter of our galaxy, the size of the universe

Correct Answer:

☒ d.

the diameter of our galaxy, Neptune's orbit, the size of the universe

Response Feedback:

FEEDBACK: The size of our Solar System is much smaller than the size of our galaxy, and there are many galaxies within our universe (page 5).

**Question 10**

1 out of 1 points



Compared to other stars, we find the Sun remarkable because

Selected Answer: ☒ c. it is the star that Earth orbits.

Correct Answer: ☒ c. it is the star that Earth orbits.

Response Feedback: **FEEDBACK:** There are many other stars similar to the Sun in size, temperature, and color, but specifically, it is the star that gives us the light and energy we need to live (page 4).

**Question 11**

0 out of 1 points



Understanding the processes of stars helps us to understand

Selected Answer: ☒ c. why the universe came into existence.

Correct Answer: ☒ a. where elements such as oxygen, carbon, and iron come from.

Response Feedback: **FEEDBACK:** Nuclear reactions within stars are the only way elements found in abundance on Earth are formed (page 5).

**Question 12**

1 out of 1 points



What is/was Sputnik?

Selected Answer: ☒ c. the first satellite launched from Earth

Correct Answer: ☒ c. the first satellite launched from Earth

Response Feedback: **FEEDBACK:** Sputnik ushered in the space age, as it was the first human-made satellite to be launched successfully into space (page 7).

**Question 13**

1 out of 1 points



Which of the following are used in astronomy?

Selected Answer: ☒ b. All the possible answers are correct.

Correct Answer: ☒ a. All the possible answers are correct.

Response  
Feedback: FEEDBACK: In order to learn more about our universe, we use telescopes to see (and more) what is in space, space probes to gather information, and computers to process data and calculate models to understand phenomena occurring in stars and galaxies (page 7).

**Question 14**

1 out of 1 points



Which field of science has remained exclusive to the planet Earth?

Selected Answer: ☒ c. biology

Correct Answer: ☒ d. biology

Response  
Feedback: FEEDBACK: Astrobiologists are searching for life beyond Earth, but they have not found it yet. Two locations in our solar system that are currently being extensively investigated for signs of life are the planet Mars and the Jupiter's moon Europa (page 18).

**Question 15**

0 out of 1 points



When we say "we are stardust,"

Selected Answer: ☒ c. we imply a poetic statement about our origin.

Correct Answer: ☒ b. we mean that previous generations of stars formed all the material in our Solar System, including the material in our own bodies.

Response  
Feedback: FEEDBACK: Except for hydrogen, helium, and trace amounts of light elements, all other chemical elements were formed during fusion reactions in the interior of stars (page 7).

**Question 16**

1 out of 1 points



The number 384,000,000 can also be written as

Selected Answer: ☒ c.  $3.84 \times 10^8$ .

Correct Answer: ☒ c.  $3.84 \times 10^8$ .

Response  
Feedback: FEEDBACK: Large numbers may be rewritten using scientific notation in order to make the numbers more manageable. The decimal place in 384,000,000 may be moved to the left eight places, thus rewriting the number

as 3.84 times  $10^8$  (page 15).

### Question 17

1 out of 1 points



In order to describe the patterns we observe in the sky, we use the language of

Selected Answer: ☒ b. mathematics.

Correct Answer: ☒ a. mathematics.

Response Feedback: **FEEDBACK:** Mathematics is the language that best describes the observed patterns in our universe; the other answer options are fields of science that offer explanations for what we observe (page 13).

### Question 18

1 out of 1 points



Which of the following are in order from smallest to largest?

Selected Answer: ☒ d.  
the Milky Way Galaxy, the Local Group, the Virgo supercluster

Correct Answer: ☒ b.  
the Milky Way Galaxy, the Local Group, the Virgo supercluster

Response Feedback: **FEEDBACK:** The Local Group is an association of the galaxies nearest us, which belongs to a large association of galactic clusters called the Virgo supercluster (page 5).

### Question 19

1 out of 1 points



“Astronomy” most closely means

Selected Answer: ☒ c. patterns among the stars.

Correct Answer: ☒ c. patterns among the stars.

Response Feedback: **FEEDBACK:** “Astronomy” (from the Greek) can also be translated as “the culture of the stars” (page 4).

### Question 20

1 out of 1 points



Light travels across the diameter of the Solar System in about

Selected Answer:

☒ a. 8 hours.

Correct Answer: ☒ d. 8 hours.

Response Feedback: **FEEDBACK:** If we define the diameter of the Solar System as the size of the orbit of Neptune, then light can traverse that distance in 8.3 hours, to be precise (page 6). See also the Lookback Time Simulator.

### Question 21

1 out of 1 points



Nuclear fusion is a process found

Selected Answer: ☒ d. inside stars.

Correct Answer: ☒ d. inside stars.

Response Feedback: **FEEDBACK:** Nuclear fusion is the process whereby smaller nuclei like hydrogen and helium are combined to form the heavier nuclei of heavier elements such as carbon and iron and beyond. The only place where this process can take place is in the very hot and dense interiors of stars (page 7).

### Question 22

1 out of 1 points



Which of the following phrases should a scientist probably NOT use in talking about the production of scientific knowledge?

Selected Answer: ☒ c. absolute truth

Correct Answer: ☒ a. absolute truth

Response Feedback: **FEEDBACK:** Art and music are judged by a human jury, but in science, evidence from nature itself, through the application of the scientific method, determines which theories survive (page 11).

### Question 23

1 out of 1 points



Einstein's special and general theories of relativity may be considered

Selected Answer: ☒ d. a scientific revolution.

Correct Answer: ☒ b. a scientific revolution.

Response Feedback: **FEEDBACK:** Einstein's theories of relativity represent a scientific revolution that showed that Newtonian mechanics was only a special case of a more inclusive set

of physical laws. In Einstein's theories, changes in the measurement of space and time are coupled to each other (page 12).

**Question 24**

1 out of 1 points



The ultimate tester of the correctness of scientific knowledge is

Selected Answer: ☒ a. nature.

Correct Answer: ☒ a. nature.

Response Feedback: FEEDBACK: Evidence from nature itself, through the application of the scientific method, determines which theories will be maintained (page 11).

**Question 25**

1 out of 1 points



When using the scientific method, a hypothesis that would explain a particular observation

Selected Answer: ☒ d. must be able to be tested.

Correct Answer: ☒ b. must be able to be tested.

Response Feedback: FEEDBACK: The scientific method requires that all hypotheses be put to rigorous tests before they can be accepted as viable theories (page 9).

Tuesday, January 27, 2015 6:34:03 PM EST

← OK