NSCI 111 ASTRONOMY TEST #1 6/3/19 Dr. Holmes NAME

Partial key

ANSWER ALL THE QUESTIONS. THE WORTH OF EACH QUESTION IS CIRCLED BY THE QUESTION NUMBER.

1) [20] The constellations of the zodiac:

NAME	Decl.	R. A	month it crosses meridian at noon i.e., month that the sun is in this
Pisces	**0**	**1**	**April**
Aries	**+**	**3**	**May**
Taurus	**+**	**5**	**June**
Gemini	**+**	**7**	**July**
Cancer	**+**	**9**	**August**
Leo	**0**	**11**	**September**
Virgo	**0**	**13**	**October**
Libra	**-**	**15**	**November**
Scorpius	**-**	**17**	**December**
Sagittarius	**-**	**19**	**January**
Capricornus	**-**	**21**	**February**
Aquarius	**0**	**23**	**March**

2) a) What is the approximate declination [1] **+60^{o}** and right ascension [1] **11 hrs** of the Big Dipper?

[6] b) Draw the Big Dipper and place the North Star on the diagram also.

3) a) [3] What is the zenith?

b) [3] What is the ecliptic?

c) [3] What is a heliacal rising?

d) [3] What is the summer solstice?

4) Tell me two bits of data (observations) about the moon:

1. [2]

2. [2]

5) [10] Briefly discuss one of the ancient (non-Greek) civilization's ideas on astronomy.

6) [10] Briefly discuss one of the major Greek's ideas on astronomy.

7) [10] Briefly discuss **one** of the following's influence on or work in astronomy:
Copernicus, Brahe, Kepler, Galileo or Newton. (use the back of the page if necessary)

8) Describe Newton's three laws of motion **in words**:

First Law: [4]

Second Law: [4]

Third Law: [4]

9) [4] What are the steps in the Scientific Method?

10) [10] TRUE OR FALSE: (for each: +1 if correct, 0 if you leave it blank, -1 if wrong)
(or based on subtracting from 100: -0 if correct, -1 if blank, -2 if wrong)
(Note: I flip a coin on each question to see if it will be true or false.)

__T__ a) On or around March 21, the sun appears to rise due East and to set due West.

__F__ b) While the planets always move across the sky from East to West, the planets **always** move through the constellations of the zodiac from West to East.

__F__ c) If a star appears at the zenith in Memphis at midnight local time, that same star will appear at the zenith **in New Orleans** (assume different latitude but same longitude) at midnight local time.

__F__ d) The stars rise about 4 minutes **later** each day.

__F__ e) The planets were called wandering stars because they wandered **throughout the whole sky**.

__T__ f) Mercury, Venus, Mars, Jupiter, and Saturn are the only planets visible to the naked eye (at one time or another).

__F__ g) The North Star **is** one of the 10 brightest stars in the night sky.

__F__ h) According to Newton's Law of Gravity, the Earth's gravity **ends at the top of the atmosphere**.

__F__ i) Newton and Columbus **were** contemporaries.

__F__ j) At the time of Columbus, sailors (at least the navigators) could tell position, **both** their latitude (North-South location) **and their longitude** (East-West location), by looking at the stars.