

FAMILY NAME : \_\_\_\_\_  
(Please PRINT!)

GIVEN NAME : \_\_\_\_\_  
(Please PRINT!)

Signature: \_\_\_\_\_

## ASTRONOMY 4

DeAnza College  
Winter 2017

First Midterm Exam

**MAKE ALL MARKS DARK AND COMPLETE.**

### Instructions:

1. On your Parscore sheet (using a #2 pencil):
  - a. Write and fill in the bubbles for your 8-digit ID number. Leave the right-most two columns blank.
  - b. Write and bubble in your name in LastName FirstName form (i.e. family name then given name separated by a space). Don't leave any blank spaces on the left.
  - c. Leave blank: areas for phone number, exam number, and code.
2. Please print your name and sign your name in the appropriate spaces at the top of this page.
3. **This is a closed-book, closed-notes exam. No reference materials of any kind are to be used during the exam.**
4. Your exam should have five pages (including this one).  
Please check to make sure that it does.
5. Mark your answers on this booklet as well as filling in the bubbles on your Parscore sheet.
6. Turn in your Parscore sheet inside your exam booklet.

Good luck!

**On your Parscore sheet:**

**A = A correct answer (“True”)**

**B = An incorrect answer (“False”)**

A. Which of the following is/are part of the Solar System?

- T F 1) The Sun
- T F 2) The Earth
- T F 3) The Moon
- T F 4) All of the stars visible to the unaided eye

B. The notion that the Earth goes around the Sun rather than vice versa is

- T F 5) called “geocentric”.
- T F 6) called “heliocentric”.
- T F 7) what Copernicus thought was true.
- T F 8) what Galileo thought was true.

C. Which of the following is/are true about motions in the solar system that cause changes in the sky as seen from Earth?

- T F 9) Earth rotates counterclockwise as seen from the North.
- T F 10) Earth revolves counterclockwise as seen from the North.
- T F 11) The Moon revolves counterclockwise as seen from the North.
- T F 12) The planets revolve counterclockwise as seen from the North.

D. How did Kepler get his mother into trouble?

- T F 13) He wrote a story in which he implied that she could cast spells.
- T F 14) He refused to pay taxes for her.
- T F 15) His problems with the church led to charges of heresy against her.
- T F 16) He accused her of beating him when he was a child.

E. Which of the following is/are contribution(s) made by Galileo Galilei to science?

- T F 17) The finding that a planet's distance from the Sun is related to its orbital period.
- T F 18) The discovery of four moons of Jupiter.
- T F 19) The discovery of the phases of Venus.
- T F 20) The discovery that the Milky Way consists of numerous faint stars.

F. What does the size of a star's image in a photograph tell you?

- T F 21) How bright it appears relative to other stars in the picture.
- T F 22) How big the star is.
- T F 23) How far away the star is.
- T F 24) Nothing.

G. Which of the following is/are true about the terms *rotation* and *revolution*?

- T F 25) *Rotation* means orbiting around something else
- T F 26) *Revolution* means orbiting around something else
- T F 27) The Earth's *revolution* period is one day
- T F 28) The two terms mean the same thing.

- H. The term "retrograde" refers to
- T F 29) a planet which appears to be moving in its usual direction against the background of the stars.
  - T F 30) a planet which appears to be moving in the opposite direction from the way it usually does.
  - T F 31) a planet that is neither Terrestrial nor Jovian.
  - T F 32) a planet that is older than the rest of the solar system.
- I. Galileo used his observations of the changing phases of Venus to demonstrate that
- T F 33) the Sun moves around the Earth.
  - T F 34) the Universe is infinite in size.
  - T F 35) the Earth is a sphere.
  - T F 36) the Moon orbits around the Earth.
  - T F 37) Venus follows an orbit around the Sun rather than around the Earth.
- J. The Sun is
- T F 38) a star.
  - T F 39) a planet.
  - T F 40) a satellite.
  - T F 41) the center of the solar system according to geocentric theories.
- K. In modern astronomy, the constellations are
- T F 42) more than 50 sky regions covering the whole sky.
  - T F 43) a small number (less than 10) of well-defined groups of stars in our sky which are close to each other in space (also called "star clusters").
  - T F 44) 12 specific regions through which the planets and Moon appear to move in our sky.
  - T F 45) used to describe directions in space, but the "pictures" they appear to make are not considered to have any fundamental physical importance.
- L. At what point in its orbit is Earth closest to the Sun?
- T F 46) at the Summer solstice
  - T F 47) at the Vernal equinox
  - T F 48) at perihelion
  - T F 49) at aphelion
- M. If we see a galaxy about two million light years away from us, then
- T F 50) we are seeing it as it was about two million years ago (not as it is right now).
  - T F 51) it is closer to us than most galaxies are.
  - T F 52) it is one of the most distant galaxies that we can detect with current technology.
- N. Which of the following can be seen from Northern California on a clear, dark Winter night at around 8pm?
- T F 53) the constellation Orion (the Hunter)
  - T F 54) the star Sirius
  - T F 55) the constellation Taurus (the Bull)
  - T F 56) the planet Neptune

- O. Which of the following is/are regularities that the major planets in our solar system share?
- T F 57) They all orbit in about the same plane.
  - T F 58) They all orbit in the same direction.
  - T F 59) They are all made mostly of hydrogen and lithium.
  - T F 60) They are all made mostly of rock and metal.
- P. What was an "epicycle" supposed to explain?
- T F 61) Solar eclipses.
  - T F 62) Seasons.
  - T F 63) Phases of the Moon.
  - T F 64) Retrograde motion of the planets.
- Q. An Astronomical Unit is
- T F 65) a unit of distance.
  - T F 66) a unit of mass.
  - T F 67) the average distance from Earth to the Sun.
  - T F 68) the average distance from Earth to the Moon.
  - T F 69) any unit which expresses an astronomical quantity.
- R. A light year is
- T F 70) a time unit that is shorter than an ordinary year.
  - T F 71) a time unit that is longer than an ordinary year.
  - T F 72) a time unit that is the same as an ordinary year.
  - T F 73) not a unit of time at all, but rather the *distance* that light travels in one year.
- S. Which one(s) of the following believed in the heliocentric model of the solar system?
- T F 74) Copernicus
  - T F 75) Galileo
  - T F 76) Kepler
  - T F 77) Ptolemy
  - T F 78) Everyone did, up until about 400 years ago.
- T. From Kepler's laws, we know that
- T F 79) the distance from the Earth to the Sun may not be constant.
  - T F 80) the Earth travels more rapidly in its orbit than do planets closer to the Sun.
  - T F 81) periods of orbiting bodies depend only on their masses.
  - T F 82) the Earth travels more slowly when farther from the Sun.
- U. Which of the following is most likely to be a distance between two planets in our solar system? (Mark only one of these "true" and all the others "false".)
- T F 83) 2 miles
  - T F 84) 2 light years
  - T F 85) 2 Astronomical Units
  - T F 86) 2 million light years

V. You write your home address in the order of street, town, state, and so on. Suppose you were writing your cosmic address in a similar manner. Which of the following presents parts of your cosmic address in correct order from smaller to larger?

T F 87) Earth-Moon System, Milky Way Galaxy, Solar System, Local Group

T F 88) Earth-Moon System, Local Group, Solar System, Milky Way Galaxy

T F 89) Earth-Moon System, Solar System, Milky Way Galaxy, Local Group

T F 90) Solar System, Earth-Moon System, Milky Way Galaxy, Local Group

W. Which of the following is/are true concerning systematic differences between Terrestrial and Jovian planets?

T F 91) Terrestrials are all smaller than Jovians.

T F 92) Terrestrials are all closer to the Sun than the Jovians are.

T F 93) Terrestrials all have higher densities than Jovians do.

T F 94) Terrestrials all rotate faster than Jovians do.

X. Which of the following is/are Jovian planets?

T F 95) Mercury

T F 96) Jupiter

T F 97) Earth

T F 98) Uranus

T F 99) Venus

T F 100) Pluto

**END OF TEST. PLEASE TURN IN YOUR PARSCORE SHEET INSIDE THIS EXAM BOOKLET.**