Quiz #9 **Physical Science 111 FHK** **Name** _____

I. Written question. (**must** be answered (in 2-3 sentences) for the paper to be graded). *Discuss, in 2-3 sentences, some reasons why early peoples were more knowledgeable about astronomy, and why such knowledge was important for them.* [1.2]

_____

_____

_____

_____

II. Short answers. *Place the answer (a single capital letter from those found in each question) on the line at left. Do not circle answers. Where there is a list (matching-type questions) any answer may be used more than once, or not at all.* [0.7/question]

____ 1. Which (if any) of these is NOT one of the "seven wanderers" observed by early peoples?

A. Mars B. Saturn C. Jupiter D. Neptune H. the Moon K. the sun L. all are

____ 2. Which (if any) of these is NOT a true motion?

A. revolution B. rotation C. retrograde motion D. two are not E. none (all are true motions)

Match the person described below in #s 2-7 with a name from the list.

____ 3. He made many accurate astronomical observations with the naked eye, but found no stellar parllax.

____ 4. He is known for proposing a 'heliocentric' universe with planets in circular orbits

____ 5. One of his laws related a planet's distance from the sun and its orbital speed

____ 6. He proposed the law referred to as "action-reaction"

____ 7. He used variations in the length of the shadow of a stick to accurately estimate the earth's size.

____ 8. He discovered several of Jupiter's moons, which helped to discredit the 'geocentric' theory.

A. Eratosthenes B. Brahe C. Copernicus D. Ptolemy J. Newton K. Kepler

N.none of these

____ 9. Small circular orbits in Ptolemy's theory (that are within larger orbits called deferents) are named

A. bicycles B. tricycles C. lunar cycles D. epicycles N. none of these

____ 10. Copernicus believed (that the)

A. sun was at center of circular planetary orbits
B. sun was at center of elliptical planetary orbits
C. sun was off center of circular planetary orbits
D. sun was off center of elliptical planetary orbits E. none of these

____ 11. According to which of Kepler's laws do planets move fastest when they are closest to the sun?

A. harmonic law B. law of elliptical orbits C. law of areas D. law of gravity N. none of these

____ 12. Which (if any) of these is NOT one of Newton's laws of motion?

A. inertia B. F=ma C. harmonic law D. gravity H. action-reaction

K. all are Newton's laws of motion

____ 13. Kepler derived the laws of planetary motion as a mathematician. Later on, Newton's laws showed why they worked.Which two of Newton's laws showed why the law of areas works?

A. inertia and *F = ma*
B. *F = ma* and action-reaction
C. action-reaction and gravity
D. inertia and action-reaction
H. inertia and gravity
J. *F = ma* and gravity
N. none of these

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L. *F = ma* and action-reaction
M. action-reaction and gravity
S. inertia and action-reaction
T. inertia and gravity
V. *F = ma* and gravity
X. no pair shown