X1.1a **1060**

PHYS-104 (1) (Kaldon-44497) **Name** _____

WMU - Fall 2003
Exam 1 - 150,000 points **Movie Title** _____

Rev. 10/07/02 Tu.2.r.1

Do Not Open This Test Until Told To Do So
Select the Answer Which BEST Completes the Statement (30 questions – 5,000 points each)
Unless Stated Otherwise, All Observational Questions Are From West Michigan

Bubble Sheets – Fill in Your NAME

Use Your 5-digit PID Number Instead of Your Student ID Number (Fill in at RIGHT)

EXAM 1 [FORM - A]

PHYS-104 (KALDON-1)

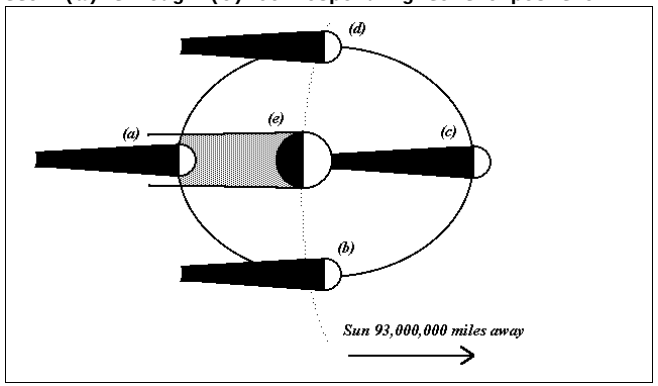
FALL 2003

WMU

The Moon is Full and Red Mars is Nigh…

Now Pay Attention – You Can Do This (150,000 points) *Multiple-Guess-Fill-In-The-Bubbles*

Using the diagram of the Earth-Moon system and its shadows below, select the letter (a) through (e) corresponding to the position:



1.) ... a Full Moon.

2.) ... a Third Quarter.

3.) A Solar Eclipse could occur at this position.

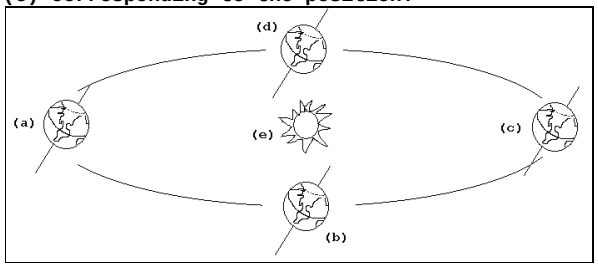
4.) A Lunar Eclipse could occur at this position.

5.) The Shadow for a Lunar Eclipse comes from here.

6.) Aphelion for the Moon's orbit on this diagram.

7.) Perihelion for the Moon's orbit on this diagram.

Using the diagram of the Earth-Sun system below, select the letter (a) through (e) corresponding to the position:



8.) Our Summer (the summer solstice)

9.) Our Winter (the winter solstice)

10.) Our Fall (the autumnal equinox)

11.) Our Spring (the vernal equinox)

12.) Aphelion for the Earth (don't try to measure from this sketch)

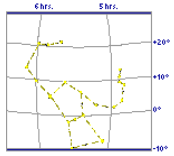
13.) Perihelion for the Earth (don't try to measure from this sketch)

14.) Astronomers can use *Parallax* to find the distance to objects which are…
A – very bright in the sky.
B – located on the ecliptic.
C – relatively close to the Earth.
D – have strong colors.
E – None of the above

15.) Both the strength of a gravitational force and the apparent brightness of an object vary with…
A – the distance between them. (r)
B – the square of the distance between them. (r^2)
C – one over the distance between them. ($\frac{1}{r}$)
D – one over the square of the distance between them. ($\frac{1}{r^2}$)
E – None of the above

16.) The Solar System is several _____ miles wide.
A – hundred
B – thousand
C – million
D – billion
E – None of the above

17.) The three stars that make up the Belt of Orion might be described as…
A – a constellation.
B – the zenith.
C – an ecliptic.
D – an asterism.
E – None of the above



18.) The three stars that make up the Belt of Orion lie on the equator of the celestial sphere. That means during the night we see these stars…
A – moving North.
B – stay near the horizon.
C – remain fixed in the sky.
D – follows the ecliptic.
E – None of the above

19.) Fanciful stories and drawings to form the constellations arose because in olden times…
A – there was too much air pollution to see the stars directly.
B – the random arrangements of the stars meant that people had to call them *something*.
C – Jay Leno's predecessors would travel from village to village and interview the stars.
D – without city lights, it was much easier to see the stars, so they were more important.
E – None of the above

20.) The face of the Far Side of the Moon cannot be seen because…
A – the New Moon is in shadow.
B – it occurs during the day near the Sun.
C – the Earth is in the way, blocking the view of the Moon.
D – the Sun is in the way, blocking the view of the Moon.
E – None of the above

21.) The Moon is a tiny sliver located near the setting sun. The next Full Moon will occur…
A – in about 7 days.
B – in about 14 days.
C – in about 21 days.
D – in about 28 days.
E – None of the above

22.) The Moon is a tiny sliver located near the setting sun. The Moon lit halfway such that only the western side of the Moon is visible will occur…
A – in about 7 days.
B – in about 14 days.
C – in about 21 days.
D – in about 28 days.
E – None of the above

23.) A particular New Moon occurs when the Moon is at its closest to the Earth and the Earth is the farthest from the Sun. Under the right conditions…
A – you might see a Total Solar Eclipse that day.
B – you might see an Annular Solar Eclipse that day.
C – you might see a total Lunar Eclipse that day.
D – you might see a partial Lunar Eclipse that day.
E – None of the above

24.) We get to see more Lunar Eclipses than Solar Eclipses because…
A – the Earth is tilted on its axis.
B – the Moon's orbit about the Earth is tilted to the Earth's orbit about the Sun.
C – they wouldn't be so darn special otherwise.
D – the Earth's shadow is bigger than the Moon's shadow.
E – None of the above

25.) Betelgeuse (pronounced Beetle-juice) is the brightest star in Orion and is 520 light years from the Earth. The light we see now from Betelgeuse, left that star…
A – earlier today. B – in the year 1745.
C – in the year 1485. D – in the year 965.
E – None of the above

26.) Alpha Centauri is about 4.4 light years from the Earth and has an apparent visual magnitude of 0.1. Betelgeuse is nearly as bright yet is 520 light years away. If Betelgeuse were 4.4 light years from us, it would be…
A – 118 times brighter. (118 = 520 ÷ 4.4)
B – 520 times brighter.
C – 118^2 times brighter.
D – 520^2 times brighter.
E – None of the above

27.) Star B appears to be 16 times dimmer that Star A. Star A has an apparent visual magnitude of 3.0. The apparent visual magnitude of Star B would be…
A – -3.0 B – 0.0 C – +3.0
D – +6.0 E – None of the above

28.) The celestial sphere of fixed stars rotating about the Earth is a scientific model. We use it because it is…
A – absolutely correct.
B – a useful method of describing what we see in the sky.
C – the Earth is the center of the universe.
D – you can't really trust scientists and their models.
E – None of the above

29.) Mars was very bright in the night sky during Fall 2003 because…
A – there is a large fire on Mars.
B – a huge dust storm has made Mars reflect more light than usual.
C – it's always bright every August through October.
D – the distance from Earth to Mars is the closest it has been in 60,000 years.
E – None of the above

30.) Our Milky Way contains 100 _____ stars.
A – hundred
B – thousand
C – million
D – billion
E – None of the above

31.) The observable universe appears to contain 100 _____ galaxies.
A – hundred
B – thousand
C – million
D – billion
E – None of the above