Q:What do small moons in the solar system have in common?

Question 1 options:

They are usually non-spherical in shape

Q: Which planet do the Galilean moons orbit?

A:

Jupiter

Q:This satellite's interior has probably warmed enough by tidal stressing to have a liquid water ocean below an icy crust.

A: Europa

Q:Which of the following describes Jupiter's moon Io?

A: It has no impact craters

Q: What role do Europa and Ganymede play in helping to make Io geologically active?

A:

They help keep Io's orbit eccentric by periodically pulling on it together

Q: Which of the following most closely matches the average thickness of Saturn's rings?

A:

A ten-story apartment building

Q

:Which of the following is not a likely source of the rings around the Jovian planets?

A:

As leftover unaccreted material from the same time that the planets themselves formed

Q: What role does Mimas play in helping to form the Cassini division in Saturn's rings?

A:

It periodically tugs on any particles that appear in the division, making their orbits elliptical

Q: What did the Huygens probe discover about Saturn's moon Titan?

A:

Methane rains onto the surface, evaporates, and rains again cyclically

Q: What do the moons Ariel, Titania, Umbriel, and Miranda have in common?

A:

They are moons of Uranus, and named after characters in Shakespeare's plays

Q: Why is Triton referred to as Neptune's "backward" moon?

A:

It orbits in the opposite direction of its revolution

Q: How massive is Pluto's moon Charon, compared to Pluto?

A:

one tenth as massive

Q: Where do the majority of confirmed dwarf planets in the solar system reside?

A:

The Kuiper Belt

Q: What do the orbits of the confirmed dwarf planets have in common?

A:

They are more eccentric than the planets' orbits

Q: Pluto doesn't gravitationally dominate its neighbourhood and cleared it of debris

TRUE

Q: How long is a solar day on the surface of Mars?
A: 24 Hours 37 MIN

Q: Which two planets have the most elliptical orbits?
A: Mercury and Mars

Q: Which of the following features are NOT present on the Martian surface?

A: Canals

Q: How does the pressure of the Martian atmosphere compare to Earth's and Venus'?

A: Lower than both Earth's and Venus'

Q: What is the main constituent of Mars' atmosphere?

A: Carbon Dioxide

Q: What major discovery did the phoenix lander make about Mars?

A: Water exists in the ground in the form of ice

Q: Which of the following do they Jovian planets **NOT** have in common?

A: They are all less dense than water

Q: Which of the following are correctly ranked in order of increasing distance from the Sun?

A: Mars, Saturn, Uranus

Q: Which of the following planets were found using Newton's laws after discrepancies were observed in another planet's orbit?
A: Neptune

Q: Which planets contain liquid metallic hydrogen in their interior?

A: Jupiter and Saturn

Q: Starting from the edge of the outer atmosphere, how does the temperature vary with depth in a Jovian planet?
A: It decreases with depth until reaching the highest layer of clouds, then it increases with depth

Q: Which of the following statements about Jupiter's atmosphere is correct?

A: Bright regions are rising gases and dark regions are falling gases

Q:Compared to the amount of solar energy they absorb, Jupiter and Saturn are observed to do what?

A: Radiates more energy

Q: under which category of planets do both Venus and Mars fall?
A: Terrestrial

Q: Which planet has the greatest orbital inclination?

A: Mercury

Q: At what special time in Mercury's orbit might we be able to see a solar transit?

A: Inferior Conjuction

Q: What best describes Mercury's surface presently?

A: Numerous ancient craters and some large impact basins

Q: Which of the following objects has a solar day that is nearly half an Earth-year?

A: Mercury

Q: Which of the following objects has the densest atmosphere?

A: Venus

Q: How would you describe Venus' retrograde rotation?

A: It rotates very slowly in a direction opposite its revolution

Q: What best describes Venus' surface presently?

A: About 90% lowland, with plateus showing evidence of volcanic activity

Q: Why is there more carbon dioxide in Venus' atmosphere than on Earth's?

A: Venus was too close to the sun to keep oceans that could have dissolved the carbon dioxide

Q: Which of the following does Venus not possess?

A: A magnetic field

Q: How long does it take for the Earth to revolve around the Sun once?

A: 362.5 days

Q: What is the largest constituent of Earth’s present atmosphere?

A: Nitrogen

Q: What function does the ozone layer provide on the Earth?

A: It shields us from ultraviolet radiation that is harmful to life

Q: What slow process is responsible for the formation of folded mountain ranges on the Earth?

A: Plate tectonics

Q: Which component of our atmosphere has steadily increased in the last 100 years and has led to warming temperatures?

A: Carbon Dioxide

Q: What causes the Aurora Borealis and Aurora Australis?

A: Changed particles from the magnetosphere colliding with the atmospherea

Suppose that the sun were to suddenly disappear from our solar system. What would happen to earth's motion.
It would begin travelling in a straight line heading out of the solar system

Which of the following statements about electrons is not true.
Electrons are actually neutrons that have acquired an electrical charge

The Metonic Cycle is the
19 year period over which the lunar phases occur on about the same dates

Which statement about the cosmological principle is valid
It is based on two tenents involving the universality of the laws of physics and chemistry and the belief that there is nothing special about earth

Considering einsten's famous equation E=MC2 which of the following is true
A small amount of mass can be turned into a large amount of energy

Which of the following best describes the origin of the ocean tides on earth
Tides are caused by the difference in the force of gravity exerted by the moon across the sphere of the earth

What does temperature measure
The average kinetic energy of particles in a substance

Upon what quantities does angular momentum depend
3 quanitities – an objects mass, its rotational speed, etc

The amount of matter contained in an object is called its mass. Which of the following is false.
The average adult human mass is about 160 pounds

Where does the energy come from that your body uses to keep you alive
Mostly it comes from the foods you each

Without telescopes or other aid we can see the moon in the night sky because
It reflects light

The scientific method is best described by which of the following
A system collecting analyzing data, formulating a hypothesis, testing it and forming it as needed

If your mass is 60kg on earth would would it be on Jupiter
60kg

The names of the 7 days of the week are based on
Seven naked eye objects that appear to move among constellations

Which of the following is not one of nor followings Kepler's law
When a planet travels slower it must be nearer to the sun and it speeds up far from the sun

Ptolemy was important in history of astronomy because he
Developed a model of the solar system that made sufficiently accurate predictions of planetary positions to remain in use of centuries

Radioactive energy is
Energy carried by light

Retrograde motion is observable for what objects
Planets located more distant from the sun than earth

The doppler shift is a wave phenomenon that
Uses change in wavelength of light to determine speed of a moving star

At which lunar phases are tides smallest
Both first and 3rd

When Copernicus 1st created his sun centred model it not lead to better predictions than Ptolemaic why
Copernicus used perfect circles for the orbits of the planets

A skater can spin faster by pulling arms closer to her body and slower by pulling out
Conservation of angular momentum

From lowest energy to highest energy electromagnetic radiation
Radio, infrared, visible, ultraviolet, x rays, gamma rays

Spectral line formed by hydrogen appears at a wavelength of 486.1 nanometres the spectrum of a star sows the same hydrogen line appearing at 4.85 what can we conclude
The star is moving towards us

Which of the following is not a unit of energy
Kilowatt

The frequency of a wave is
All of the other answers are true

Spectroscopy can be used to
All of the above

Which of the following statements best describes the principle advantage of telescopes over eyes
Telescopes can collect far more light with far better angular resolution

A green apple looks green because
It reflects green light and absorbs all other colours

The wavelength of a wave is
The distance between two adjacent peaks of the wave

Kinetic energy
Energy of motion

What would happen if the space shuttle were launched with greater speed then earths escape velocity
It would travel away from the earth into the solar system

What do astronomers mean by light pollution
Refers to light used for human activities that brightens the sky and hinders astronomical observations

Which of the following statements it not one of newton's laws of motion
The net force applied to an object is equal to its mass times velocity

Which of the following statements correctly described the law of conservation of energy
The total quantity of energy in the universe never changes

Which of the following statements about x rays and radio waves is not true
Nether x rays nor radio waves can penetrate the earth's atmosphere

Which of the following is not an advantage of the HST over ground based telescopes
Although it orbits the earth and is outside the atmosphere, it is closer to the stars

When hold a rock potential energy, drop it kinetic, hits the ground what happens
The energy goes to producing sound and to heating the ground rock, air

The trouble with refraction telescopes is that
Different colours of visible starlight get focused to different points in space making the image blurry

Suppose the angular separation of 2 stars is smaller than the angular resolution of your eyes how will stars appear to your eyes
The 2 stars look like a single point of light

Galileo observed that venus had phases very similar to the phases our moon goes through. From this he concluded that
Venus must, therefore, orbit the sun and not earth

Using Kepler's third law of planetary motion…
11.8 years

Which statement best describes the difference between your mass and your weight
Your mass is a measure of the amount of matter you contain and your weight is a measure of the amount of gravitational pull on your body

How did kepler's first law of planetary motion alter the Copernican system?
It changed the perfect circles to ellipses

Galileo was a very important figure in the development of astronomy. Which of the following statements about Galileo's accomplishments is false?
Galileo looked at the moon through his telescope and observed rivers flowing with some kind of high liquid

Which of the following is not an example of a "pseudoscience"
Astronomy

Where is Stonehenge located
In England, west of London

Ptolemy was important in the history of astronomy because he
Developed a model of the solar system that made sufficiently accurate predictions of planetary positons to remain in use for many centuries

Galileo observed that Jupiter has moons. From this information you may conclude that
There are so-called heavenly objects that do not orbit the earth and although its clear that the moon orbits earth there is, then, no reason why the earth-moon combination cannot orbit the sun

What determines the date for easter
The Sunday following the first full moon following the spring equinox

At which lunar phases are the tides most pronounced?

Both new and full moons

Which of the following is not regarded as a heat transfer mechanisms
Segregation

Which of the following are systems for measuring temperature
Only A, B, and D

Betelgeuse and Rigel are two bright stars in the constellation Orion. Betelgeuse emits primarily red light while rigel appears a blue colour. What can you determine from this observation
Riel is hotter than Betelgeuse

Which of the following statements about Isaac newton is not true
Newton grew up in Germany

Consider a loaded dump truck and you in your smartcar driving along the 401 highway. Which of the following statements about linear momentum is true
As long as you follow the truck, both travelling at the same speed, your combined momentum or total momentum, is conserved

A neap tide is when the rides are least pronounced, during which lunar phrase do neap tides occur?
Both first and third quarter moons

The two basic types of telescopes are what?
Reflection and refraction

What is the main problem that ground-based telescopes have to deal with
All A, B, and C

Spectroscopy can be used to
All of A, B, C, and D

Most of everything we know from outside earth we know because of our use of what?
Light

Which of the following objects would not be considered an optical device
Your bedroom window

What is the main advantage of the hubble space telescope
It orbits above the earth's atmosphere

Which of the following statements about exoplanets is false?
Answer: no planets have been found orbiting their stars at radii less than mercury's orbital radius

Which statement best describes the direct detection technique for finding exoplanets?
Answer: actually, seeing the exoplanet orbiting the star through our more powerful telescopes

Which of the following techniques has so far yielded the fewest detections of an exoplanet?
Answer: astrometric method

Why would a star continuously wobble back and forth in space?
Answer: because it is revolving around a common centre of mass with other planets

What is the name of the exoplanet that has been found closest to our solar system?
Answer: alpha centauri Bb

which of the following statements about exoplanets is true?
Answer: only a and c are true

What does the exoplanet descriptor "hot Jupiter" mean?
Answer: it's an exoplanet just like Jupiter but orbiting much closer to its sun than 5 AU

Why is it easier to find exoplanets that are much more massive than the earth?
Answer: because their transits and tugging on their stars are easier to detect

Thinking about our own solar system which planet will have the greatest effect on the suns movement about the solar system?
Answer: Jupiter because of its huge mass

Which statements best describes the transit technique for finding exoplanets?
Answer: observing slight dip in the brightness of a star as the planet moves across its face

Which of the following three factors would affect the size of a stars Doppler shift caused by an exoplanet?
Answer: only a and b

Which statement best describes the astrometric technique for finding exoplanets?
Answer: Observing the slight side-to-side movement of the star in space cause by an exoplanet orbiting it

which of the following space telescope missions was dedicated entirely to discovering exoplanets?
Answer: Kepler

The terrestrial planet cores contain mostly metal because?
Answer: only metals condensed closest to the sun in the solar nebula and the rocks accreted around them as the protoplanets cooled

The terrestrial planets and the giant Jovian planets have different compositions because?
Answer: the terrestrial planets are closer to the sun

How were the moons of the Jovian planets likely formed?
Answer: probably through the same process as the planets themselves formed

The first solid grains or flake formed in our solar system by the process of _____ the addition of material to an object an atom….
Answer: condensation

Which of the following is the most likely to describe a comet but not an asteroid?
Answer: comets are mainly composed of ice and snow with some dust and rocky bits

What is the differentiation in planetary geology?
Answer: the process by which gravity separates materials according to density

Why did the solar nebula heat up as it collapsed?
Answer: as the cloud shrank its gravitational potential energy was converted to kinetic energy and then into thermal energy

The sticking together of small but solid particles is an important feature of the solar nebular theory. What is this process known as?
Answer: accretion

What constitutes the solar wind?
Answer: it’s the continuous emission of charged particles(electrons, protons) from the solar surface

The nebular theory of formation of the solar system successfully predicts all but one of the following. Which one does the theory not predict?
Answer: the equal number of terrestrial and Jovian planets

Which on the following solar system moons likely formed through the same process as our solar system
Answer: Jupiter's so called Galilean moon

What was the frost line of the solar system?
Answer: the distance from the sun beyond which temperatures we low enough for hydrogen compounds and methane to condense into the present-day orbits of mars and Jupiter

Why are the inner planets made of denser materials that the outer planets?
Answer: in the inner part of the nebula only metals and rocks were able to condense because of the high temperatures

What is plantsman?
Answer: a small building block of planets

Which of the following statements about asteroids is false?
Answer: an asteroid in just a failed comet

Where are most of the known asteroids found?
Answer: between mars and jupiter

The age of our solar system is approximately?
Answer: 4.6 billion years

Which of the following statements about comets is false?
Answer: the nucleus of a comet is quite large about 100 km across

Which of the following statements about the moons of the solar system is false?
Answer: all planets have moons except mercury

Rank the following planets in order of size from the smallest to the largest?
Answer: mercury, mars, earth, Uranus, Saturn

When we examine of the types of planets making up the solar system we notice the following?
Answer: there are two types of planets, terrestrial and Jovian

Which of the following is not characteristics of the terrestrial planets?
Answer: they have more moons than the Jovian planets

What is the origin of the atoms of hydrogen, oxygen, and sodium into eh perspiration that exits your body during this…
Answer: the hydrogen nuclei were produced a few minutes after the big bang event 13.8 billion years ago…

Which of the following characteristics of the Jovian planets is correct?
Answer: none of a, b or c are correct

The rotation of the planets are?
Answer: all in the same direction (with exception of Venus and Uranus)

Which of the following statements about meteorites is true?
Answer: A meteorite is what's left of a meteor when it hits the earth's surface

Ring systems around planets are?
Answer: quite common among the large, gas planets; all Jovian planets have them
---

As of now most known extrasolar planets have been discovered by
Answer: Doppler technique

Which of the following is not a characteristic of the moons of the solar system planets
Answer: all of the eight classical planets have at least one moon

Which of the following statements about asteroids is not true
Answer: no asteroids have been found beyond the asteroid belt

Atmospheres formed around some terrestrial planets because
Answer: outgassing through volcanic activity

what was the ice or frost line of the solar system
Answer: between present day orbits of mars and Jupiter

why haven't we detected low mass planets close to their stars and high mass planets far from their stars
Answer: Both A and B above

To date about how many extrasolar planets have been discovered
Answer: 700

what are the main constituents of the jovian planets

Answer: hydrogen and helium

the first small solid grains or flakes formed in our solar system by the process of
Answer: condensation

what is an extrasolar planet
Answer: a planet that orbits a star that is not our sun

What is an exoplanet moon
Answer: it is an object orbiting an exoplanet

at first the sun's present data rotation seems to contradict the prediction of the nebular theory because
Answer: sun should have been rotating fast when it formed, but the actual rotation is fairly slow

Which of the following statements about the Jovian planets is not true
Answer: The outermost Jovian planet, Uranus, is also the least massive

Which one of the following is a characteristic of jovian planets
Answer: low average density

based on available data what kind of objects in our solar system do most of the known extrasolar planets resemble
Answer: jovian planets

the planet closest in size to earth is
Answer: venus

51 pegasi is important because
Answer: it is the first star like our sun that was found to have a planet orbiting it

which of the following is the origin of almost all the large moons around the jovian planets
Answer: they were formed by condensation and accretion in disk of gas around the planet

which type of exoplanet would you expect to cause the largest Doppler shift
Answer: massive planet close to its star

rank the 5 worlds in order of size from large to small
Answer: earth, venus, mars, mercury, moon

the asteroid belt is found where
Answer: mars and Jupiter

according to our theory of solar system formation what is Pluto
Answer: one of the largest Kuiper belt objects

which detection technique has been used to find orbital distance
Answer: Doppler technique

About how much of the solar nebula consisted of elements heavier than hydrogen and helium
Answer: 2% Mass

which of the following statements is not an observed pattern of motion in our solar system
Answer: most planets orbit at the same speed

which of the following is not a technique that could be used to discover extrasolar planet
Answer: direct binocular

why does the solar nebula theory predict that planetary systems are common
Answer: all of the other answers

which of the following is not a characteristic of the general layout of the solar system
Answer: all planets rotate on their polar axes at about the same rate
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According to our theory of solar system formation what is the origin of asteroids and comets
Answer: asteroids are the leftover planetesimals of the inner solar system and comets are the leftover planetesimals that formed beyond the frost line

Which of the following characteristics of the terrestrial planets is (are) correct?
Answer: They are relatively small, high density objects with solid surfaces on which to walk

We have determined the age of the solar system through:
Answer: Radioactive dating

What is a comet
Answer: the nucleus of a comet is a collection of various ices mixed with dust and tiny bits of rocky debris

What is meant by the period of heavy bombardment?
Answer: During the 500-700 millions years of the solar system existence…

What is a planetesimal?
Answer: A smaller building block of planets

Which of the following statements about comets is true?
Answer: Comets have a relatively small nucleus (usually less than 10 km in diameter) that develop debris tails as they get close to the sun

Protoplanets grow into planetesimals by which process?
Answer: A combo of A and B

Which statement best describes the transit method of discovering exoplanets?
Answer: Measuring the periodic dimming of light as an exoplanet crosses in front of the star