**TEST 2- Review**

**Diagram** (6 points).

Draw a diagram of the Sun and the major planets in our solar system. Include the Asteroid belt.

**Essays** (20 points; 10 points each).

1. a. Describe how Pangaea broke up and the Atlantic Ocean formed.

b. What evidence is there today for the breakup of Pangaea?

c. Describe what plates are and how they move.

2. Describe the five leading theories on the origin of the Moon. Which do you prefer? Why?

MULTIPLE CHOICE:

1. Charged particles from the Sun comprise the a) auroras; b) van Allen belts; c) solar wind; d) sunspots;.
2. a) 88°; b) 77°; c) 39°; d) 12°;.
3. For which angle with respect to the vertical will the Sun’s rays give the most efficient heating? a) 39°; b) 12°; c) 77°; d) 88°;.
4. For which angle with respect to the vertical will the Sun’s rays be scattered most by the atmosphere? a) 12°; b) 39°; c) 88°; d) 77°;.
5. The a) Autumnal Equinox; b) Winter Solstice; c) Vernal Equinox; d) Summer Solstice; is the day when the Sun occupies its most Northerly position on the ecliptic.
6. The Summer Solstice occurs nearest to a) June 21; b) September 22; c) December 22; d) March 21;.
7. The Winter Solstice occurs nearest to a) June 21; b) September 22; c) December 22; d) March 21;.
8. The a) Summer Solstice; b) Autumnal Equinox; c) Winter Solstice; d) Vernal Equinox; is the day when the Sun is overhead at the equator, heading South.

1. An apparent solar day; b) A mean solar day; c) A sidereal day; d) Local time; is used for Astronomical reference.
2. We use a) sidereal time; b) mean solar time; c) apparent solar time; d) standard time (with time zones); as our official time in the everyday world.
3. Which of the following years would be a leap year? a) 1700; b) 1800; c) 1900; d) 2000;.
4. The Moon’s diameter is a) 2160; b) 3476; c) 12,756; d) 384,400; km.
5. The Moon’s bulk density is a) 12.5; b) 5.515; c) 3.34; d) 2.8; g/cm3.
6. The Moon a) rotates once every 29 ½ days; b) rotates once every 27 1/3 days; c) rotates once every 24 hours; d) does not rotate;.
7. The Moon is at the same mean distance from the Sun as the Earth but has a far larger temperature range. This is because a) the Moon has maria, which the Earth lacks; b) the Moon orbits the Earth, thus significantly changing the Moon’s distance from the Sun during an orbit; c) the Moon has no life; d) the Moon has no atmosphere or oceans, and rotates slowly;.
8. Which feature is not found on the Moon? a) Seas; b) Flat areas; c) Hills; d) Mountains;.
9. The dusty outer layer of the Moon, the regolith, is not found on the Earth and is caused by a process on the Moon that doesn’t happen on the Earth. That process is a) planetesimal bombardment; b) micrometeorite bombardment – these burn up in the Earth’s atmosphere; c) maria basin spillover – no maria on the Earth; d) no life on the Moon – the Earth’s life utilizes what would be the regolith on the Earth;.
10. What corresponds on the Earth to the regolith on the Moon? a) Crust; b) Lithosphere; c) Soil; d) Aesthenosphere;.
11. Why don’t we call the Moon’s regolith soil? a) it’s too thick; b) it’s too thin; c) lack of plate tectonics; d) soil on Earth has a connotation with life in it, which the Moon lacks;.
12. Which of the following is not a volatile? a) Iron; b) H20 ice; c) CO2 ice; d) Sodium;.
13. All rocks on the Moon are a) sedimentary; b) igneous; c) metamorphic; d) basalts;.
14. Which rocks are definitely formed from lava? a) Stones; b) Metamorphic; c) Igneous; d) Sedimentary;.
15. No rocks on the Moon are a) basalts; b) anorthosites; c) igneous; d) sedimentary;.
16. The lunar highlands are composed of a) basalts; b) anorthosites; c) sedimentary rocks; d) planetesimal remains;.
17. The Moon’s surface has a good record of the early history of the solar system, compared to the Earth. The reason is a) There is no life on the Moon; b) The Moon formed before the Earth; c) The Earth didn’t form in the solar system, but the Moon did; d) Unlike the Earth, the Moon has no weathering, erosion, or plate tectonics;.
18. Apollo a) 11; b) 10; c) 9; d) 8; was the first manned landing on the Moon.
19. The solar system is 4.6 a) thousand; b) million; c) billion; d) trillion; years old.
20. The overwhelming majority of craters on the Moon formed from a) lava; b) collapse; c) faulting; d) impacts from meteorites;.
21. Plate tectonics has not been an active process on the Moon for most or all of its history. This statement is proven by a) no visual evidence of any fault-displaced crater segments; b) the igneous nature of lunar rocks; c) crater counts; d) no lunar mountains;.
22. The oldest lunar rocks are all a) 4.6; b) 4.42; c) 3.9; d) 3.1; billion years old.
23. Planetesimal bombardment within the solar system seems to be characteristic of a time a) 2.8; b) 3.1; c) 3.9; d) 4.6; billion years ago.
24. The early bombardment of the Moon is evident from a) people being there at the time and recording the events; b) the igneous nature of the lunar rocks; c) the basalts in the maria; d) crater counts increasing out from the maria;.
25. Lunar geologic activity seems to have ended abruptly a) 3.1; b) 3.9; c) 4.42; d) 4.6; billion years ago.
26. Moonquakes a) are shallower than earthquakes; b) are 10 times deeper than earthquakes; c) are stronger than earthquakes; d) do not exist;.
27. Which of the following is present on the Moon? a) Seas; b) A thick atmosphere; c) organic molecules; d) mountains;.

1. The Sun is a) 50; b) 200; c) 400; d) 700; times larger than the Moon.
2. Lunar eclipses occur when the Moon is at the a) First Quarter; b) Third Quarter; c) New; d) Full; phase.
3. Total solar eclipses never last for more than a) 7 ½ min; b) 1 hr 40 min; c) 23 hr 56 min; d) 24 hr 00 min;.
4. During a total solar eclipse, a) the Sun is in the Moon’s shadow; b) the Earth is in the Moon’s shadow; c) the Moon is in the Earth’s shadow; d) the Sun is in the Earth’s shadow;.
5. On an ideal Earth, there are a) 1; b) 2; c) 3; d) 4; high tides.
6. The astronomical body which is the major source for tides on the Earth is a) Jupiter; b) the Sun; c) the Moon; d) Venus;.
7. The cause of tides on the Earth is a) the Moon’s gravity; b) the Sun’s gravity; c) the centrifugal force due to the Earth’s rotation and revolution around the barycenter; d) the excess of gravity over the centrifugal force or vice-versa at a point on the Earth;.
8. Spring Tides can occur when the Moon is at which one of the following phases? a) Full; b) Gibbous; c) First Quarter; d) Crescent;.
9. Neap Tides can occur when the Moon is at which one of the following phases? a) Full; b) Third Quarter; c) Crescent; d) Gibbous;.
10. Most of the asteroids are located between a) Venus and the Earth; b) the Earth and Mars; c) Mars and Jupiter; d) Saturn and Uranus;.
11. The atmospheres of the Jovian planets are dominated by a) O2; b) H2/He; c) CO2; d) N2;
12. Which is not true about the original H2/He atmospheres of the terrestrial planets? a) They may have leaked away because the terrestrial planets have low gravities; b) They may have leaked away because the terrestrial planets are closer to the Sun and warmer; c) They have remained, but are now dominated by secondary atmospheres of CO2 and N2; d) They may have been blasted away by the early strong solar wind, whose intensity decreases as the square of the distance from the Sun increases;.
13. a) Mercury; b) Jupiter; c) Venus; d) Saturn; is the slowest rotating planet.
14. a) Mercury; b) Jupiter; c) Venus; d) Earth; is the planet having the highest density.
15. Which one of the following planets has a highly eccentric orbit? a) Saturn; b) Pluto; c) Earth; d) Venus;.
16. Which of the following best describes Mercury’s environment? a) has craters; b) has rings; c) has Moons; d) has a thick atmosphere;.
17. Mercury has an atmosphere composed mostly of a) Sodium; b) Carbon Dioxide; c) Hydrogen; d) Oxygen;.
18. Which is not a factor in the large day-night temperature variation of Mercury? a) Slow rotation; b) Thin atmosphere; c) Iron core; d) No water on the surface;.
19. Mercury’s magnetic field strength is closest to a) 0x; b) 100x; c) 1x; d) 1/100; that of Earth.
20. Mercury has a) 0; b) 1; c) 2; d) 3; satellites.
21. Mercury most nearly, but not entirely, resembles which of the following with respect to surface features? a) Earth; b) the Moon; c) Venus; d) Mars;.
22. Venus; b) the Moon; c) Mars; d) Mercury; is known as the Earth’s sister planet.
23. Venus’ rotation period is a) 365 ¼ ; b) 243; c) 225; d) 59.6; days
24. Maxwell is a feature of the planet a) Mars; b) Jupiter; c) Mercury; d) Venus;.
25. The Ishtar Terra is a a) plateau; b) mare; c) volcano; d) chasm;.
26. The Ishtar Terra is a feature of the planet a) Earth; b) Venus; c) Jupiter; d) Mars;.
27. Venus’ atmosphere is composed mostly of a) Oxygen; b) Nitrogen; c) Carbon Dioxide; d) Water Vapor;.
28. Venus’ surface temperature is closest to a) 59; b) 140; c) 600; d) 880; F
29. Venus has a very high surface temperature primarily because a) of the runaway greenhouse effect of its atmospheric constituents; b) it has a large internal heat source; c) it is so close to the Sun; d) large numbers of meteorites strike its surface, heating it up;.