**Astronomy Unit Test**

1.) How does the tilt of the Earth’s axis affect the seasons?

1. By changing the amount of direct solar energy reaching the surface of the Earth
2. By influencing the rate of chemical reactions occurring in the atmosphere
3. By deflecting the harmful rays of radiation emitted by the Sun
4. By changing the speed of the rotation of the Earth

2.) What causes the Earth’s circumference around the equator to be larger than that around the poles and thus creating an equatorial bulge?

1. The direct and intense radiant heat from the Sun
2. High precipitation rate along the equator
3. The earth’s rotation on its axis
4. Subducting tectonic plates cause the formation of mountains along the equator

3.) Which phases of the moon are associated with spring tides?

1. First quarter and last quarter
2. First quarter and third quarter
3. Waxing and waning
4. New and full

4.) The model in which the Sun is at the center of the system of planets is called the…

1. Solar system
2. Heliocentric system
3. Geocentric system
4. Copernicus system

5.) How does a straight alignment between Earth, the Sun, and the Moon impact the tides on Earth?

1. It produces the strongest tides
2. It produces the weakest tides
3. It produces semidiurnal tides
4. It produces diurnal tides

6.) Which concept below provides evidence that the universe is expanding?

1. Precession
2. Nutation
3. Redshift
4. Blueshift

7.) Planet A orbits Planet B. Planet A has a mass that is 1/10 of the mass of Planet B. Where is the barycenter most likely to be located?

1. Closer to Planet B
2. Closer to Planet A’s center
3. In the middle of Planet A and Planet B
4. Near the center of the two planets, but closer to Planet A

8.) Which of the following best describes the precession of the Earth?

1. The Earth revolves around the Sun every 365 days
2. The movement of the circumpolar stars and Polaris
3. The Earth is the third planet from the Sun
4. A slow and continuous change in the orientation of the Earth’s rotational axis

9.) Which describes the difference between nuclear fission and nuclear fusion?

a.) Nuclear fission is the process that produces the energy of stars, and nuclear fusion splits a heavier nucleus into smaller nuclei.

b.) Nuclear fission splits a heavier nucleus into smaller nuclei, and nuclear fusion is the process that produces the energy of the stars.

c.) Nuclear fission produces the energy in the core of the Earth, and nuclear fusion produces energy in nuclear power plants.

d.) Nuclear fission produces energy in nuclear power plants, and nuclear fusion produces the energy in the core of the Earth.

10.) If you were to start at the North Pole and head south along the Prime Meridian what is the correct order for the major lines of latitude?

a.) Arctic Circle, Tropic of Cancer, Equator, Tropic of Capricorn, Antarctic Circle

b.) Antarctic Circle, Tropic of Capricorn, Equator, Tropic of Cancer, Arctic Circle

c.) Artic Circle, Tropic of Capricorn, Equator, Tropic of Cancer, Antarctic Circle

d.) Tropic of Cancer, Arctic Circle, Equator, Antarctic Circle, Tropic of Capricorn

11.) Which of the following best describes Kepler’s first law?

1. Planets orbit in an elliptical pattern around two foci
2. Planets orbit in a circular pattern around one focus
3. Planets orbit in an elliptical pattern around one foci
4. Planets orbit in a circular pattern around two foci

12.) If it is summer in the northern hemisphere, which statement is true?

1. Earth has changed the tilt of its axis by 20 degrees due to its revolution
2. It is winter in the southern hemisphere due to the tilt of Earth’s axis
3. It is summer in the southern hemisphere due to the tilt of the Earth’s axis
4. Earth has reached its closest point to the sun due to its revolution

13.) Which pair of words best completes the following statement?  
The Earth’s circumference is around the equator due to Earth’s .

1. Smaller, rotation
2. Smaller, revolution
3. Larger, rotation
4. Larger, revolution

14.) What part of the Earth is responsible for protecting us from the Sun’s harmful radiation, creating colorful auroras in the process?

a.) ozone layer

b.) magnetic field

c.) clouds

d.) atmosphere

15.) Which occurs as a result of Earth rotating on its axis?  
 a.) movement of tectonic plate  
 b.) deep ocean currents  
 c.) seasonal changes  
 d.) day and night

16.) How does heat from the Sun get to Earth?

a.) by radiation, using electromagnetic waves to transfer the heat

b.) by convection, using liquids and gases to transfer the heat

c.) by conduction, using solids to transfer the heat

d.) by absorption, using primary waves to transfer the heat

17.) In the electromagnetic spectrum, which best describes the relationship between wavelength and frequency?

1. As frequency increases, wavelength decreases
2. As frequency decreases, wavelength decreases
3. As wavelength increases, energy increases
4. They are both proportional

18.) Which statement describes the motion of Earth around the Sun?

1. The speed of Earth is constant regardless of its distance from the Sun.
2. The speed of Earth is constant because the distance remains the same.
3. The speed increases the farther Earth is from the Sun and decreases the closer Earth gets to the Sun
4. The speed increases the closer Earth is to the Sun and decreases the farther Earth get to the Sun.

19.) Which of the following chemical reactions produce the Sun’s energy?

1. Helium nuclei are combined by nuclear fusion
2. Hydrogen nuclei combine through nuclear fusion into helium
3. Oxygen is present to cause combustion of solar fuel molecules
4. Helium and oxygen break down through nuclear fission

20.) What type of electromagnetic radiation is the most harmful to the human body? What type of frequency would this radiation have?

1. Gamma Rays, high frequency
2. Gamma Rays, low frequency
3. Radio, high frequency
4. Visible Light, low frequency

21.) What is the correct hierarchy of the universe? (smallest to largest)

1. Planetary system, planet, galaxy, universe, stars
2. Planet, planetary system, star, galaxy, universe
3. Planet, planetary system, star, universe, galaxy
4. Planet, universe, galaxy, planetary system, star

22.) Which of the following best describes the small irregularity (wobble) in the precession of the equinoxes which makes a slight change to the angle at which the Earth tilts.

1. Precession
2. Nutation
3. Barycenter
4. Center of Gravity

Matching- select the best answer choice for each of the following below.

PART A

A. Mass per unit volume of a material

B. A technique to measure the volume of an irregular object

C. The measure of matter in an object

D. The amount of space an object takes up

A. Telescope that uses an objective lens to bring visible light into focus

B. A tool used to show that the Earth is rotating

C. Classified by frequency and wavelength

D. Telescope that uses mirrors to focus visible light

E. A multi-country space station that provides an environment to study the effect of weightlessness

A. The distance between two peaks or crests

B. The number of waves that occur per second

C. The combination of lightweight, atomic nuclei into heavier nuclei

D. The splitting of heavy atomic nuclei into smaller, lighter nuclei

E. Process that allows plants to grow

1. Density
2. Mass
3. Volume
4. Water Displacement

PART B

27.) Foucault Pendulum

28.) Reflecting Telescope

29.) Refracting Telescope

30.) International Space Station

31.) Electromagnetic Spectrum

PART C

32.) Photosynthesis

33.) Wavelength

34.) Nuclear Fusion

35.) Frequency

36.) Nuclear Fission