1) Which set of laws apply to both celestial (in space) and terrestrial (on earth) objects
   a) Aristotle’s Principle
   b) Pavlov’s Dogs
   c) Cohen’s Rule
   d) Newtonian Synthesis

2) The Universal Law of Gravity applies to
   a) galaxies
   b) planets
   c) stars
   d) All of these

3) What does the m in this formula stand for?
   \[ F \sim \frac{m_1 m_2}{d^2} \]
   a) meters
   b) mass
   c) minutes
   d) none of these

4) The force of gravity is inversely proportional to
   \[ F \sim \frac{m_1 m_2}{d^2} \]
   a) the mass
   b) the distance between the objects squared
   c) diameter of the objects
   d) its rotational inertia

5) Newton’s most celebrated synthesis was and is of
   a) earthly and heavenly laws
   b) weight on earth and weightlessness in space
   c) mass and distance
   d) paths of tossed rocks and paths of satellites
6) What is the G stand for in this formula?

\[ F = G \frac{m_1 m_2}{d^2} \]

a) grams  
b) gramps  
**c) Gravitational constant**  
d) gravitational variable

7) The universal gravitational constant is similar to the mathematical constant?

**a) Pi**  
b) Pie  
c) Tau  
d) Gamma

8) The force of gravity between two planets depends on their

   **a) masses and distances apart**  
b) atmospheres  
c) rotational inertia  
d) all of these

9) If the masses of two planets are each somehow doubled, the force of gravity between them would?

   a) cut in half  
b) double  
**c) quadruple (4x)**

10) Weight is determined by mass and?

   a) distance  
b) positive or negative charge  
c) polarity  
**d) gravity pulling on it**
11) When you are weightless in space, you are missing?

a) support force
b) your parents
c) mass
d) Mr. Cohen-aww

12) When an elevator accelerates upward, your weight reading on a scale is

a) normal
b) more than normal
c) less than normal
d) zero

<table>
<thead>
<tr>
<th>Normal weight</th>
<th>Greater than normal weight</th>
<th>Less than normal weight</th>
<th>Zero weight</th>
</tr>
</thead>
</table>
13) When an elevator accelerates downward, your weight reading on a scale is
a) normal
b) more than normal
c) less than normal
d) zero

14) The differences between ocean levels at different times of the day are called
a) Tides
b) Tide Pods
c) ocean attraction
d) ocean detraction
15) What is the cause of the tides on earth?

a) earth’s core  
b) electrical fields  
c) Gravitational Field  
d) moon & sun

16) Einstein’s Theory of Gravitation states

a) Gravitational field is a warping of space-time  
b) Gravitational fields have no effect on nearby objects  
c) gravitational fields are a warping of space distance  
d) Gravitational field is smoothing out of the space time continuum.
17) When a star's mass is contracted into an area so small and the gravitational force at the surface becomes so large that even light cannot escape the surface it becomes?

a) white dwarf  
b) Super Nova  
c) neutron star  
d) a black hole
18) What do you call an enormous distortion of space-time, but instead of collapsing toward an infinitely dense point, a ________ opens out again in some other part of the universe, different time or different universe!

a) black hole
b) super Nova
c) **Wormhole**
d) Red Giant
19) Why do High tides occur every 12 hours

- a) Because the two bulges are on opposite sides,
- b) because there are two major oceans on different sides of the planet
- c) because the earth rotates
- **d) all of these are reasons**

20) The attraction of one piece of matter on another piece of matter is called?

- a) love
- **b) gravity**
- c) electromagnetism
- d) black hole theory

21) When a star collapses and explodes out an enormous amount of light and energy it is called a?

- a) Super Nova
- b) Chevy Nova
- c) nuclear fission
- d) none of these

22) What is the name of our galaxy?

- a) Snickers
- **b) Milky Way**
- c) Plutonium
- d) KitKat

23) What causes the gases of star to ignite and create nuclear fusion?

- a) matches
- **b) heat and pressure**
- c) separating of protons from neutrons in the core
- d) none of these
24) What elements are involved in creating the nuclear fusion of a star?
   a) hydrogen and helium
   b) oxygen and iron
   c) oxygen and helium
   d) hydrogen and ferrite

25) What created the Crab Nebula?
   a) Super Nova
   b) Black Hole
   c) worm hole
   d) Holy Moly
26) This is a picture of?

a) galaxy
b) black hole
c) crab nebula
d) super nova

27) This is a picture of?

a) Red Giant
b) the event horizon of a black hole
c) super nova
d) sun
28) The closer you get to the Event Horizon, the ___________.

a) the faster you accelerate and slower time goes  
b) the faster you accelerate and the faster time goes  
c) the slower you accelerate and the faster time goes  
d) better seats you have for the event.

29) What keeps a star from collapsing on itself during its lifespan?
   a) worm hole  
   b) the force from the nuclear fusion reactions that produce energy outward  
   c) gravity  
   d) the force of the outer shell of gravity

30) According to Einstein, the faster a body is accelerated...
   a) the slower time frame it experiences  
   b) the faster time frame it experiences  
   c) the more weight it gains  
   d) the more mass it gains