Name:_____ Date:_____

1 Who observed that in the absence of friction, an object in horizontal motion continues to move at the same speed with no additional force.

A Einstein
B Newton
C Galileo
D Aristotle

2 Which one of Newton's Laws of Motion cannot be demonstrated in a typical setting on Earth due to friction and gravity?

A First
B Second
C Third
D All of the above
E None of the above

3 Bernoulli's principle states that since the total energy in a closed system varies, if one element in a fluid system is decreased, another must increase to counterbalance it.

A Change "increased" to "decreased"
B Change "varies" to "is constant"
C Change "decreased" to "increased"
D No changes are needed

4 Which of the following can be done to reduce the effects of shockwaves and sonic booms on supersonic aircraft?
(Input all that apply, then push the ENTER button.)

A decrease thickness of wings
B decrease the length of the nose
C increase wingspan
D sweep wings back

5 Slight increases in the angle of attack of an airfoil (wing) will normally cause

A an increase in speed due to the faster airflow over the top surface
B an increase in drag thus slowing the aircraft to the point of losing lift
C a decrease in lift due to the longer path of airflow over the wing
D an increase in lift due to the longer path of airflow over the wing

6 The vector sum of all the forces acting on an object; also called resultant force

A Net force
B Joules
C Shock wave
D Sonic boom

7 The condition of unrestrained motion in a gravitational field

A G force
B Free fall
C Gravity
D Energy

8 That component of the total aerodynamic force exerted by the air on an airfoil, having a direction opposite to the force of gravity, enabling an aircraft to stay aloft.

A Lift
B Push
C Drag
D Thrust

9 A disturbance that occurs when an object reaches the speed of sound or greater, and pressure waves in front of and behind the object are forced together and compressed.

A Sonic boom
B Sonic wave
C Shock wave
D Doppler effect

10 Change in velocity per unit of time is called what?

A The theory of relativity
B Newtonian motion
C Acceleration
D Aerodynamics

11 Which of the following is NOT a step in the scientific process?

A Performing experiments to verify or disprove the hypotheses
B Publishing results of experiments
C Creating hypotheses
D Solving of the problem

12 Which law states that a body at rest tends to remain at rest, and a body in motion tends to remain in motion in a straight line, unless an outside force acts on the body.

A Newton's Second Law of Motion
B Newton's First Law of Motion
C Newton's Third Law of Motion
D Galileo's Law
E Aristotle's Law

13 When do Newton's laws cease to accurately describe physical motion?

A When an object is moving at or close to the speed of sound.
B Newton's laws always accurately describe the properties of an object in motion.
C When an object is moving at or close to the speed of light.
D When an object is traveling at extremely slow speeds.

14 Which law of motion states that for every action there is an equal but opposite reaction?

A Newton's First Law of Motion
B Newton's Fourth Law of Motion
C Newton's Third Law of Motion
D Newton's Second Law of Motion

15 Where is low pressure developed when air moves over a wing?

A Beneath the wing
B In front of the wing
C Behind the wing
D On top of the wing

16 The English unit for measuring work is known as _____.

A Foot/pounds
B Joules
C Volts
D Horsepower

17 A _____ is a reasoned explanation for a scientific event.

A Scientific principal
B Theory
C Hypotheses
D Research element

18 A book sitting on a tall shelf demonstrates what kind of energy?

A mechanical
B kinetic
C potential
D chemical

19 The science that deals with the motion of bodies moving through air and other gases is known as _____.

A Flight science
B Aerodynamics
C Aerology
D Astrology

20 In aerodynamics, acceleration is often measured in terms of the standard acceleration of gravity and is commonly referred to as:

A Acceleration forces
B Mach Number
C Positive Acceleration
D G forces

Answer Key: NS2-M3C18 - Motion, Force, and Aerodynamics (Exam)

Question:	**Answer**
1	C
2	A
3	B
4	AD
5	D
6	A
7	B
8	A
9	C
10	C
11	D
12	B
13	C
14	C
15	D
16	D
17	B
18	C
19	B
20	D