Multiple Choice Questions for the Flight of the Bumblebee Test

Use the image and the blanks for questions 1 through 4.



1. Which force is A?
	1. Thrust
	2. **Lift**
	3. Drag
	4. Gravity
2. Which force is B?
	1. **Thrust**
	2. Lift
	3. Drag
	4. Gravity
3. Which force is C?
	1. Thrust
	2. Lift
	3. **Drag**
	4. Gravity
4. Which force is D?
	1. Thrust
	2. Lift
	3. Drag
	4. **Gravity**
5. Which direction does Lift force directed?
	1. Down towards the ground.
	2. Forward, in the direction of flight.
	3. **Up away from the ground.**
	4. Backwards, in the direction opposite of the flight.
6. Which direction does Thrust force directed?
	1. Down towards the ground.
	2. Up away from the ground.
	3. **Forward, in the direction of flight.**
	4. Backwards, in the direction opposite of the flight.
7. What is a “Fair Test” when developing an experiment involving variables?
	1. When you change two variables and see which affects the dependent variable more.
	2. When you keep all variables the same and see how it affects the dependent variable.
	3. When you change all variables at once and see how it affects the dependent variable.
	4. **When you change one variable and see how it affects the dependent variable.**
8. What is an “Unfair Test” when developing an experiment involving variables?
	1. **When you change one variable and see how it affects the dependent variable.**
	2. When you change two variables and see which affects the dependent variable more.
	3. When you keep all variables the same and see how it affects the dependent variable.
	4. When you change all variables at once and see how it affects the dependent variable.
	5. A, B, and C.
	6. B, C, and D.
9. Which describes a “Fair Test” when testing pipes for sound produced when being hit?
	1. Having two pipes that are the same material, but different diameters and different lengths.
	2. Having two pipes that are the same material, diameter, and the same lengths.
	3. **Having two pipes that are the same material, diameter, but with different lengths.**
	4. Having two pipes that are the different material, diameter, and lengths.
10. What are the two main types of insect Flight?
	1. Indirect Flight and Aerodynamic Flight
	2. Fixed Wing and Direct Flight
	3. Fixed Wing and Aerodynamic Flight
	4. **Indirect Flight and Direct Flight**
11. Which of these describes muscles attached directly to wings for control in insect flight?
	1. Indirect Flight
	2. **Direct Flight**
	3. Fixed Wing Flight
	4. Aerodynamic Flight
12. Which of these describes how the muscles make the thorax oscillate and control wings for insect flight?
	1. **Indirect Flight**
	2. Direct Flight
	3. Fixed Wing Flight
	4. Aerodynamic Flight
13. What type of flight do bees have?
	1. **Indirect Flight**
	2. Direct Flight
	3. Fixed Wing Flight
	4. Aerodynamic Flight
14. How does a honeybee manipulate it’s wings to fly compared to other insects their size?
	1. They are static and do not move, but the shape of the wings changes air pressure, causing flight.
	2. Slow long arcs.
	3. **Fast short arcs.**
	4. Back and forth.
15. What does an anemometer measure?
	1. Air Pressure
	2. **Wind Speed**
	3. Wind Direction
	4. Air Humidity
16. When flying a kite, which would be the most important meteorological tool?
	1. Thermometer
	2. Barometer
	3. Hygrometer
	4. **Anemometer**
17. Vane, Cup, Laser Doppler, and ultrasonic can all be types of:
	1. Barometers
	2. Rain Gauges
	3. **Anemometers**
	4. Hygrometers
18. What is the purpose of a design brief?
	1. **To develop the results of the design, including audience, criteria, and constraints.**
	2. To develop the results of the design, including audience, aesthetics, and constraints.
	3. To develop the results of the design, including budget, aesthetics, and constraints.
	4. To develop the results of the design, including budget, criteria, and constraints.
19. Which parts of the design brief are not needed?
	1. Criteria and Constraints
	2. Criteria and Aesthetics
	3. Criteria and Budget
	4. Constraints and Aesthetics
	5. Constraints and Budget
	6. **Budget and Aesthetics**
20. Which parts of the design brief are absolutely needed?
	1. Criteria and Aesthetics
	2. Criteria and Budget
	3. **Criteria and Constraints**
	4. Constraints and Aesthetics
	5. Constraints and Budget
	6. Budget and Aesthetics