Assignment: Physics

1. **Physics Assignment (CBSE Class 10th Board)**

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4. **Instructions:** Answer all questions to the best of your ability. Questions 1 and 2 are short answer questions, while questions 3, 4, and 5 are long answer questions.

5.

6. **1. Short Answer Question (2 marks)**

7. What is the difference between speed and velocity? Give an example to illustrate your answer.

8.

9. **2. Short Answer Question (2 marks)**

10. Define acceleration and give the SI unit of acceleration.

11.

12. **3. Long Answer Question (5 marks)**

13. A car travels from city A to city B at an average speed of 60 km/h and returns at an average speed of 40 km/h. If the total distance between the two cities is 240 km, calculate the total time taken for the round trip.

14.

15. **4. Long Answer Question (5 marks)**

16. Explain the concept of buoyancy and Archimedes' Principle. A cylindrical object of height 20 cm and radius 4 cm is partially submerged in water. If the density of the object is 8000 kg/m^3, calculate the buoyant force acting on the object. (Density of water = 1000 kg/m^3)

17.

18. **5. Long Answer Question (6 marks)**

19. Derive the equation of motion under gravity, using the concept of uniformly accelerated motion. A stone is dropped from the top of a building of height 20 m. Calculate the velocity with which it hits the ground and the time taken to reach the ground. (Acceleration due to gravity = 9.8 m/s^2)