Assignment -1

Topic : Force and Motion   **Class: Std- 7**

1. What is the speed of a jet plane that travels 528 meters in 4 seconds?   **(132 m/s)**

2. How long will your trip take (in hours) if you travel 350 km at an average speed of 80 km/hr?   **(4.38 h)**

3. How far (in meters) will you travel in 3 minutes running at a rate of 6 m/s?   **(1,080 m)**

4. A trip to Mount Abu takes 10 hours. The distance is 816 km. Calculate the average speed.   **(81.6 km/h)**

5. How many seconds will it take for a satellite to travel 450 km at a rate of 120 m/s?   **(3,750 s)**

6. What is the speed of a walking person in m/s if the person travels 1000 m in 20 minutes?   **(0.80 m/s)**

7. A ball rolls down a ramp for 15 seconds. If the initial velocity of the ball was 0.8 m/sec and the final velocity was 7 m/sec, what was the acceleration of the ball?   **(0.413 m/s²)**

8. A meteoroid changed velocity from 1.0 km/s to 1.8 km/s in 0.03 seconds. What is the acceleration of the meteoroid?   **(26.7 km/ s²)**

9. A car going 50m/s accelerates to pass a truck. Five seconds later the car is going 80m/s. Calculate the acceleration of the car. **(6m/s²)**

10. The space shuttle releases a space telescope into orbit around the earth. The telescope goes from being stationary to travelling at a speed of 1700 m/s in 25 seconds. What is the acceleration of the satellite?   **(68 m/s²)**

11. A ball is rolled at a velocity of 12 m/sec. After 36 seconds, it comes to a stop. What is the acceleration of the ball? **(-0.33 m/s²)**

12. A train is accelerating at a rate of 2 m/s^2. If its initial velocity is 20 m/s, what is its velocity after 30 seconds?   (80m/s)

13. As a shuttle bus comes to a normal stop, it slows from 9.00m/s to 0.00m/s in 5.00s. Find the average acceleration of the bus. (-1.8m/s^2)

14. Marisa's car accelerates at an average rate of 2m/s^2. Calculate how long it takes her car to accelerate from 24m/s to 26m/s.   (1s)

15. A dog runs with an initial speed of 1.5m/s on a waxed floor. It slides to a stop with an acceleration of -0.3m/s^2. How long does it take for the dog to come to a stop?   (5s)

16. A car accelerates at a rate of 3.0 m/s^2. If its original speed is 8.0 m/s, how many seconds will it take the car to reach a final speed of 25.0 m/s?   (5.7s)

17. A car traveling at a speed of 30.0 m/s encounters an emergency and comes to a complete stop. How much time will it take for the car to stop if it decelerates at -4.0 m/s^2?   (7.5s)

18. A motorcycle traveling at 25 m/s accelerates at a rate of 7.0 m/s^2 for 6.0 seconds. What is the final speed of the motorcycle?(67m/s)

19. A car starting from rest accelerates at a rate of 8.0 m/s^2. What is its final velocity at the end of 4.0 seconds?   (32m/s)

20. As she climbs a hill, a cyclist slows down from 24 m/s to 6 m/s in 10 seconds. What is her deceleration?   (1.8m/s^2)