Class 7th Living science solution 2017-18
Chapter 14. MOTION AND TIME

P. 153 Oral Questions For Formative Assessment

1. metre, kilogram, second, kelvin

2. Yes. We need to measure something that occurs or appears at regular intervals to measure time and this is very difficult to carry out.

3. increases

P. 156 Oral Questions For Formative Assessment

1. s= d/t 2. uniform motion 3. a straight line

P. 157 For Formative and Summative Assessment

A. 1. c 2. b 3. c 4. a 5. b 6. c 7. b

B. 1. physical quantities 2. false 3. true 4. oscillation 5. false 6. alance-wheel

7. stopwatch 8. speed 9. odometer 10. uniform motion

C. 1. Standard units are used in measurements because they can be uniformly used by everyone.

2. Discovery of the simple pendulum by Galileo Galilei made the accurate measurement of time possible. If a weight hung from a string is made to swing, it always completes one to-and-fro motion in exactly the same time.

3. The time taken by a pendulum for one oscillation is known as its time period.

4. The periodic change, rotation of earth on its axis, can be used to measure time.

5. Modern electronic watches have the crystals of a substance called quartz. These crystals can vibrate very fast at a very precise rate. These vibrations are used to measure time accurately.

6. An object is said to be in uniform motion when it travels in a straight line and covers equal distances in equal intervals of time.

D. 1. SI is the abbreviation of 'Systerne International d'Unites' in French. In this system the standard units are metre, kilogram, second and kelvin.

Two other systems of units are FPS system and CGS system.

2., distance (d) = 270 km time (t) = 4.5hrs Thus,

Speed (s) = d = 270/4.5 = 60 km/h

Thus, the speed of the car is 60 km/h.

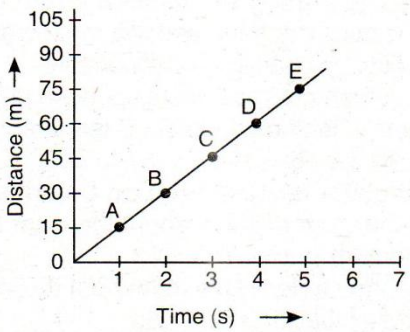
3. a. distance (d) = 200 m time (t) = 10s So, speed (s) = d/t = 200/10 = 20 m/s

b. d = 200 m and t = 10 s So,speed = d/t = 200/10 = 20m/s = 20 x(3600/1000)km/h = 72 km/h

4. An aeroplane takes time to travel from New Delhi to London = 7 h. Plane travels at a speed = 950 km/h

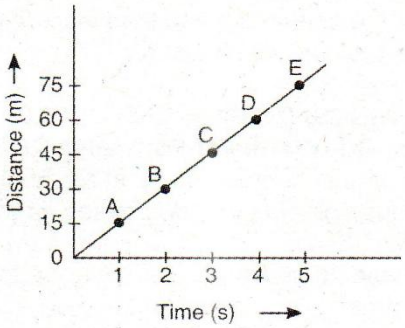
Thus, distance (c/) = s x t= 950 x 7 = 6650 km

5.



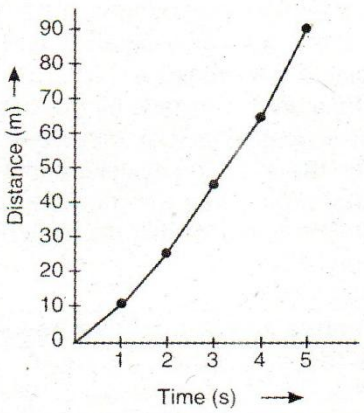
Distance-time graph for uniform motion

6.



The speed of the car is $s = \frac{d}{t} = \frac{60^{15}}{4} = 15$ m/s

7.



The car does not have uniform motion.

8. An object is said to be in uniform motion when it travels in a straight line and covers equal distances in equal intervals of time. The graph of distance versus time for uniform motion is a straight line. A body is said to be in non-uniform motion if the speed or direction of the body does not remain constant. The graph of distance versus time for non-uniform motion is not a straight line.

HOTS Questions

1. Making accurate measurements of length and mass is relatively simpler than making accurate measurement of time. We need to measure something that occurs or appears at regular intervals to measure time and this is very difficult to carry out.

2. By using a string shorter than 25 cm.

3. No, it does not have uniform motion as its direction is changing continuously.

4. Car A won the race as its speed is higher.

5. Object A is at rest. Object B is travelling at infinite speed.