

Comprehensive PHYSICS –XI

Value Based Questions

CHAPTER 3

1. While walking through the hills of Shimla, Satish asked his uncle Ramnath if it was possible to measure the height of a distant hill. Ramnath never thought of this earlier. But he decided to find out the possibility of measuring the height of a distant hill. He talked to many of his friends but could not find a satisfactory answer. Then he went to an engineering college and consulted a teacher. The teacher explained the method of measurement to Ramnath. Ramnath came home and explained the same to Satish who was very happy and thanked his uncle profusely.



- (a) What according to you, are the values displayed by Ramnath ?
- (b) Explain the method of measurement of height of a distant hill.

CHAPTER 7

2. Mrs. Bector was playing the game of carrom board with her son. She decided to give him an idea of different types of motion. She told him that the motion of the carrom coin is a two-dimensional

motion. She asked her son to observe the motion of a mosquito or the motion of a kite flying on a windy day. She explained that these motions are three-dimensional motions. To explain one-dimensional motion, she gave her the example of a ball thrown vertically up.

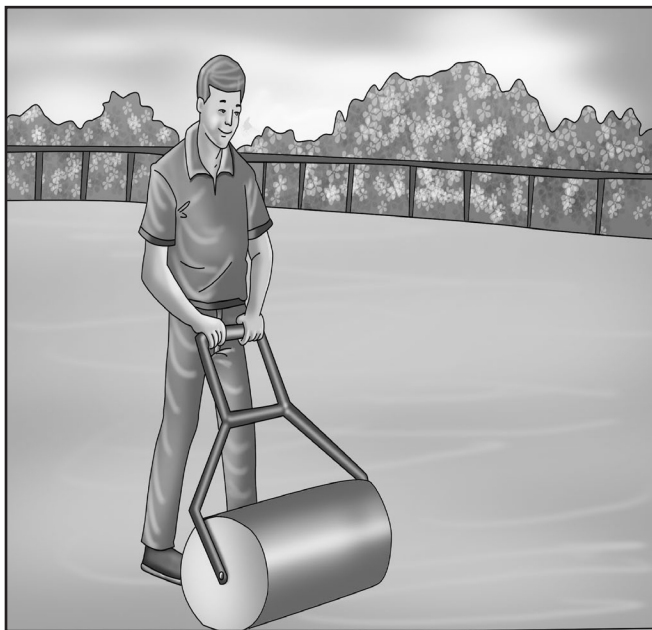


- (a) What according to you, are the values displayed by Mrs. Bector ?
- (b) Define one-dimensional, two-dimensional and three-dimensional motions.

CHAPTER 12

3. Mrs. Babita Kumari's royal estate had many sprawling lawns. Her grandson Saurabh was visiting her in his summer holidays. One day, just for fun, he started pushing and pulling a lawn roller. He felt that it was easier to pull a lawn roller than to push it. He asked Mr. Thomas, the estate officer, the reason of easier pull and difficult push. Mr. Thomas was surprised at this observation of Saurabh. He talked to the gardeners but they knew nothing. Finally, he approached the Physics teacher of Science college run by Mrs. Babita Kumari.

The Physics teacher explained to Thomas that there is more friction at the time of pushing as compared to the friction at the time of pulling. Thomas explained this fact to Saurabh. Saurabh was overjoyed and thanked Thomas.

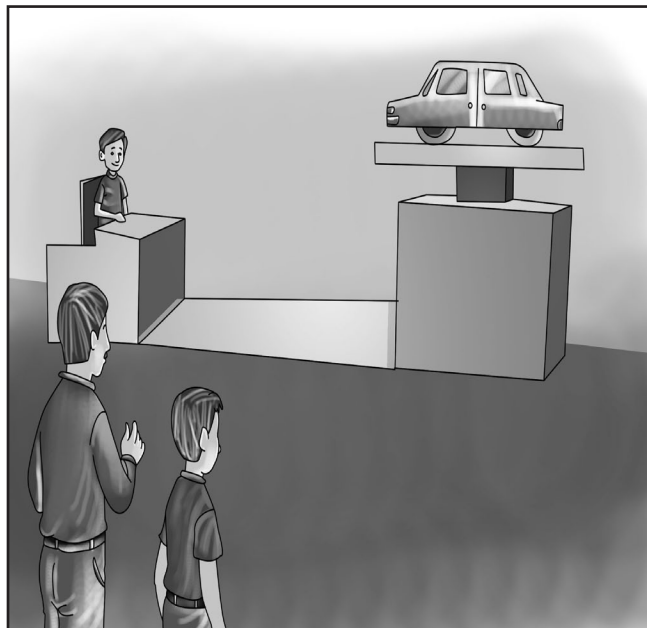


- (a) What according to you, are the values displayed by Thomas ?
- (b) Why is it easier to pull a body than to push it ?

CHAPTER 19

4. Raj accompanied his father Neeraj to the car repair workshop. He saw a car on a big platform. Both the platform and car were being lifted up by a mechanic by applying force on a small piston. Raj was surprised to see this. He invited the attention of his father to this. Raj asked his father as to how is it possible to lift such a heavy object like a car by applying only a small force. Neeraj talked to the mechanic about this but the mechanic did not know anything as to what makes it possible to lift the car. Neeraj talked to many people but drew a blank. One day Neeraj was shifting channels on his TV when he saw a programme of hydraulic lifts on a Science channel. Neeraj started watching and recorded the programme. Now he had the clear concept of hydraulic lifts. When

Raj came back from school, Neeraj showed the recorded programme to him. Raj was so excited to see the programme that he told his father that he wants to become a hydraulic engineer.



- (a) What according to you, are the values displayed by Neeraj ?
- (b) Write a note on hydraulic lift.

CHAPTER 24

5. Maya was feeling uncomfortable because of the harsh cold weather. On an impulse, she started rubbing her hands. To her utter surprise, she found that her hands became warm. She shared this observation with her elder brother Raj. Raj started rubbing his hands and he also found that his hands became warm. Raj decided to find out as to how rubbing of hands produces heat. Raj questioned his science teacher about this observation. The teacher explained to him that when he rubs his hands, he does mechanical work. Due to friction between the hands, some of the mechanical work gets converted into heat energy. Raj explained this to his younger sister Maya who was thrilled with the knowledge of conversion of work into heat. She thanked her elder brother.



- (a) What according to you, are the values displayed by Raj ?
- (b) Write a note on the concept of work, heat and internal energy.

CHAPTER 28

6. Subhashini, accompanied by her daughter Charu, went to the railway station to receive a relative. While standing on the railway platform, Charu observed that when a train was approaching the railway station, the frequency of the sound of whistle of the engine was increasing. She further observed that when the train was receding away from the platform, the frequency of sound of the whistle was decreasing. She was surprised at this

observation and shared this with her mother. Her mother also observed the same when the next train came and went. Subhashini discussed this observation with her friends but nobody could explain it. She finally took the help of a person who was running a science programme on a TV channel. The person gave a satisfactory explanation. Subhashini was satisfied. She explained the facts to her daughter. Her daughter was very happy and thanked her mother for the keen interest she took.



- (a) What according to you, are the values displayed by Subhashini ?
- (b) Find an expression for the apparent frequency of sound when the source of sound is approaching a stationary observer.

ANSWERS**CHAPTER 3**

1. (a) Ramnath is a man of great enthusiasm and strong determination. He shows lot of confidence in his interaction with people.
- (b) See Text.

CHAPTER 7

2. (a) Mrs. Bector is a knowledgeable lady. She likes her son to learn through play. She imparts knowledge in a very simple and intelligent manner.
- (b) See Text.

CHAPTER 12

3. (a) Thomas is a man of great confidence and great determination. His problem-solving ability is beyond doubt. He gives due regards to the guests of the royal estate.
- (b) See Text.

CHAPTER 19

4. (a) Neeraj takes lot of interest in his son's curiosity. He makes good use of electronic media and is an intelligent man.
- (b) See Text.

CHAPTER 24

5. (a) Raj is a curious boy and has great self confidence. He is a seeker of knowledge. He has lots of love and affection for his younger sister.
- (b) See Text.

CHAPTER 28

6. (a) Subhashini is as curious as her daughter and has great mental ability. She has lots of confidence. She makes good use of the electronic media.
- (b) See Text.