

Appendix - G

Interpretations of Physics Concepts from Story

Name:

Roll no:

Std:

Read the story/ Paragraph given below and answer the questions linking it with the physics concepts you have studied:

Story 1: The Hare and the Tortoise

Once there lived in a forest a Hare and a Tortoise. The Hare was very proud of being the fastest runner. He made fun of the Tortoise for being slow. The Tortoise challenged the Hare to have a race with him. The Hare accepted the challenge. The race was to start from one end of the forest to the other end. The race started. The Hare ran very fast. The Tortoise was left much behind. The Hare stopped to take rest under a tree. He soon fell asleep. The Tortoise maintained the same speed throughout the race. The Tortoise passed the Hare and reached the winning post. The Hare woke up and ran as fast as he could. He saw that the Tortoise was already there at the winning point.

1. State the kind of motion exhibited by the tortoise?
2. State the kind of motion exhibited by the hare?
3. Which are the points of zero velocity in the story?
4. Whose motion represents having velocity but zero acceleration? How can you say so?
5. Justify whether displacement and distance are same or different in the story?

Story 2 : The Thirsty Crow

Once upon a time, a crow was very thirsty. The crow searched for water everywhere. At last, he saw a pot with very little water in it. He put his beak inside. However, he could not reach down the water. The crow thought of a plan. He picked up certain objects that lay around. He started picking up some pebbles, rubber cork, a crumpled paper, and some thermocol balls, few iron nails and dropped them into the pot one by one. To his surprise, some of the objects floated while the other sank in water. He now picked up the objects that sank in water and dropped it in water. The water level rose. The crow drank the water and flew away happily.

1. Enlist the objects in the story that floated and sank in water separately.
2. Why do the enlisted objects sink or float in water?
3. Which principle leads to rise in the level of water in the pot?
4. Which forces can be identified in the story?
5. List the scientific concepts/ principles in the story. (Indicate in which aspect of the story the concepts/principles are seen)

Story 3: The Magical Lantern

Once upon a time, there lived Raju who was studying in standard IX. It was exam time and there was a power cut. Raju had to study in the light of a kerosene lantern. Suddenly, the light of the lantern went dim as the short length of the wick was not able to reach the kerosene. He got anxious about what he should do now. There was no extra kerosene available at home. His father then suggested him to carefully pour some water in the fuel container such that it did not wet the wick. He followed his father's instruction and was surprised to see that the light of the lantern became bright again.

1. Is the water acting as a fuel? Justify.
2. What made the lantern lit up again after the water being poured into it?
3. What would have been his observation if he would have poured glycerine instead of water in the lantern containing kerosene?
4. Name any other liquid that can be used instead of water to get the similar effect in the story?
5. List the scientific concepts/principles in the story. (Indicate in which aspect of the story the concepts/principles are seen)

Story 4: The Cricket Match

It was a sunny day. Students were all enjoying the interschool cricket match held in the campus. The batsmen Rohit and Pranay were all set on the ground with their shining shoes with spikes, kneepads and helmet. The wicket keeper Ronald had hand gloves and his eyes were keen on the ball. The last ball of the over was to be delivered and the team needed four runs to win. The Arun bowled the ball and Pranay hit it with all his might. One of the fielders Vishal chasing the ball slipped off the field and fell down. Another fielder Hari trying to catch the fast moving ball with one hand got severe hurt on the palm. The ball bounced back and a third fielder Gaurang gradually pulled his hand backward with the moving ball and succeeded in getting a catch. Gaurang was about to scream but soon he realized that he was standing out of the boundary line. The crowd started cheering the winning team.

1. How do shoes with spikes help Pranay to play better?
2. How does wearing a helmet and kneepads help players to protect themselves?
3. How do the hand gloves help the wicket keeper to perform better in the cricket match?
4. Why is it so that while trying to catch the ball Hari got severe hurt on the palm while Gaurang could easily catch the ball?
5. List all possible scientific concepts and principles in the story. (Indicate in which aspect of the story the concepts/principles are seen)