

Textbook questions

Revision test III

Instructions for students: Follow your teacher's instruction. Also you can attempt this test online and see your result.

[Attempt online and know results](#)

Topic: Textbook questions

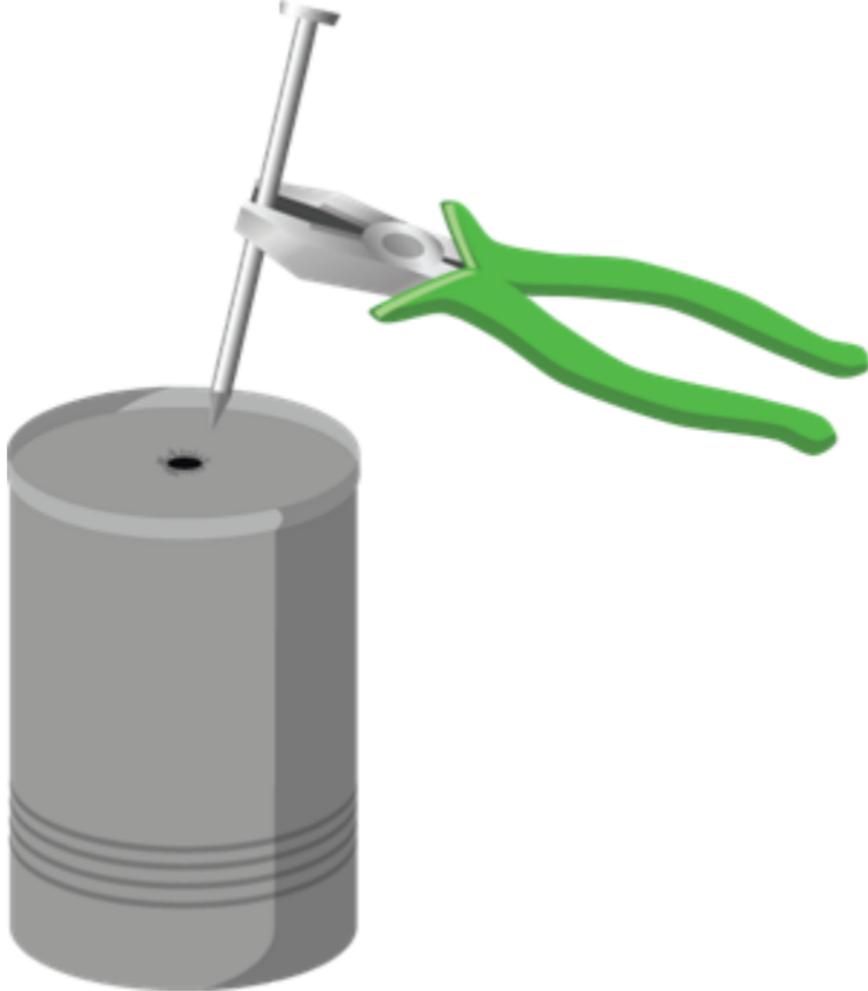
Dates: 05.10.2022 until unlimited

Question count: 3

Total marks: 16

1. Intext - Activity - IV (5 m.)

Hammer a nail into a tin can. Ease the nail out. Put it in again to make sure that the hole is large enough for the nail. Then, holding the nail with a pair of pliers, scissors or forceps, heat the nail over a candle, in hot water, or over the stove.



Try to put it into the hole in the can.

Solution:

You will see that, now it is

- A) hard
- B) easy

to put the nail into the hole. Heat

- A) expands
- B) contracts

solids. The molecules in the solid

A) move slower

B) move faster

A) spread apart

B) closer together

and occupy

A) more space

B) less space

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2. Intext - Activity - V (7 m.)

In this exercise, **an activity is explained to understand linear expansion.**

Materials Required:

1. Bulb
2. Dry cell
3. Candle
4. Cycle spoke
5. Coin (or broad-headed nail)
6. Two wooden blocks.

Procedure:

- Locate one end of the cycle spoke on a wooden block, and an electric wire is attached to it.
- As shown in the figure, put a stone over the spoke to hold it firmly in place on the wooden block.
- The spoke should be parallel to the ground.
- Locate the second wooden block under the free end of the spoke.
- Wind some electric wire around the coin (or nail) and locate it on the block.
- You may place a stone over the coin to hold it in position.
- Attach a bulb and dry cell to the free ends of the wires attached to the coin and the spoke and form the circuit as shown in the above figure.
- When the tip of the free end of the spoke is in contact with the coin, the circuit is closed, and the bulb lights up.
- Verify to ensure this. If the bulb does not glow, it indicates the circuit is not closed, so check your connections properly.
- Now slide a page of your book between the coin and spoke, and then slide it out.
- In this way, you would get a gap between the coin and spoke equal to the thickness of the sheet of paper.

1. Does the bulb light up? If it does not, what could be the reason?

The bulb

A) does not light up

B) light up

because the coin and the spoke do

A) not touch

B) touch

each other. The circuit is

A) closed circuit

B) open circuit.

2. Did the bulb light up after the spoke was heated using a candle for some time?

When the spoke gets **heated**, it will be

A) expanded

B) contacted

. Here,

A) linear expansion

B) linear contraction

takes place. So the spoke

A) touched

B) not touched

the coin. The spoke is heated, which causes the circuit to be

A) completed

B) opened

, and the **bulb**

A) is light up

B) does not light up

3. Why does the bulb go off sometime after the candle is taken away from the spoke?

The spoke **does not get the heat** once the candle is removed. The spoke is

A) expanded further

B) back to its original state

. So the spoke

A) touches

B) does not touch

the coin once again, and the **bulb**

A) goes off

B) is light up

4. What happens to the length of the spoke when it is heated or cooled?

The length of the spoke is

A) contracted

B) expanded

when the spoke is **heated**, and the length of the spoke is

- A) contracted
- B) expanded

when the spoke is **cooled**.

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3. Intext - Activity - VI (4 m.)

Take a metal ball and a metal ring of suitable diameter. Pass the metal ball through the ring.

You can observe that the metal ball can easily go through it.

Now heat the metal ball and then try to pass it through the ring. What will happen?

When the ball is heated the atoms in the ball

- A) gain heat energy
- B) lose heat energy
- C) gain kinetic energy
- D) lose kinetic energy

. They start

- A) moving

- B) vibrating
- C) staying
- D) rotating

and force each other

- A) apart
- B) move
- C) closer

. As a result

- A) an expansion
- B) the contraction

takes place. That's why the ball

- A) did not go
- B) go

through the ring.

Now let the ball cool down, and check whether it passes through the ring..What will happen?

After some time, as the ball lost the heat energy to the surrounding it

- A) came back to its original size
- B) expands

and it

- A) went
- B) did not went

through the ring.

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