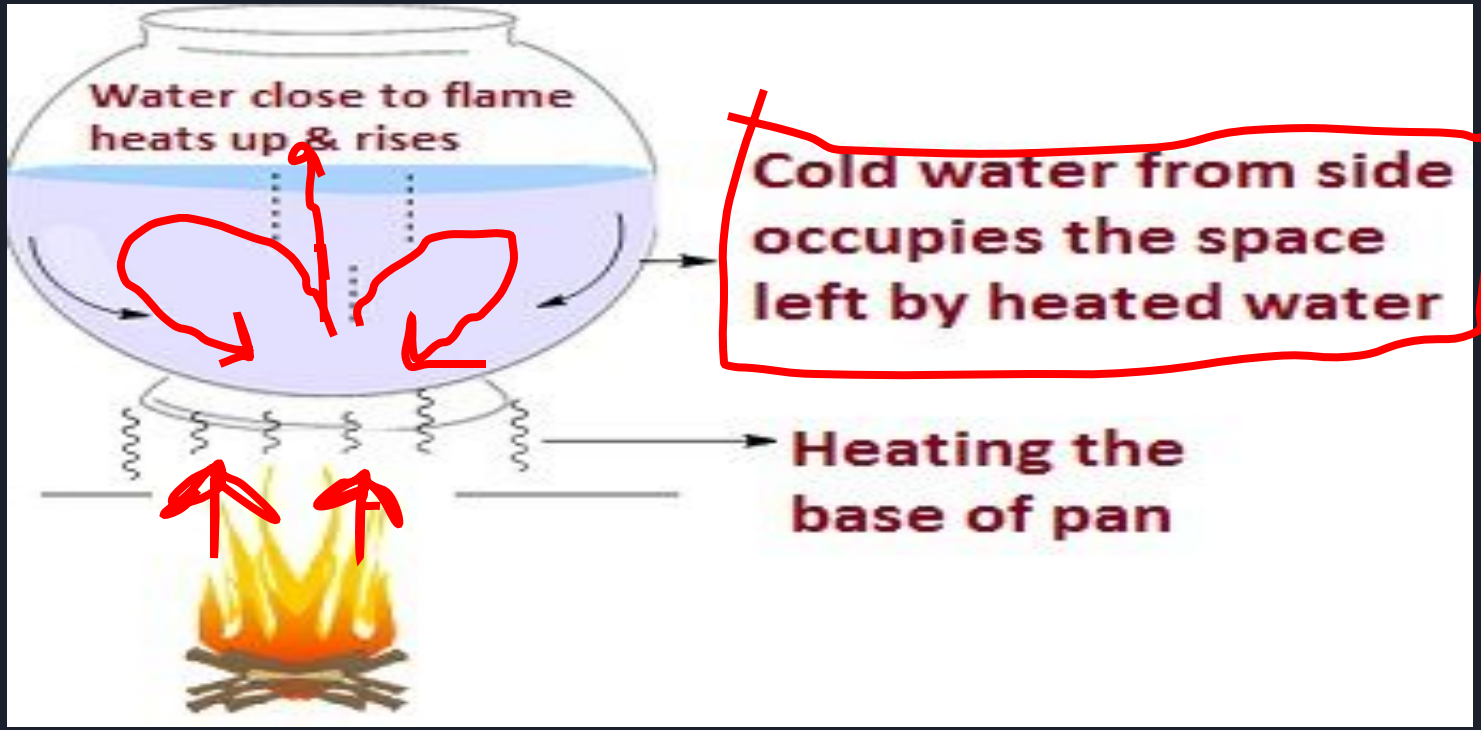
Convection-

- The method of transferring heat by the movement of the particles of substance away from the source of heat is known as convection. It takes place only in liquids and gases.
- On heating the water, the part of it near the flame gets heated up and expands due to which it becomes less dense and consequently rises up.

- This creates a vacuum and the cold water from the sides slides down to occupy the space near the flame.
- This water also gets heated up and rises.
- Again the cold water slides down. So it is like a cycle that continues again and again until and unless the entire water is heated up.

- This process continues unless the whole water present in the beaker gets heated up.
- The air too gets heated up by this process. The air near the heat source gets heated up and rises. The cold air from the sides slides to occupy the space. In this way the air gets heated.



- Due to this reason the air just above the flame of candle is hotter than the air at the side.

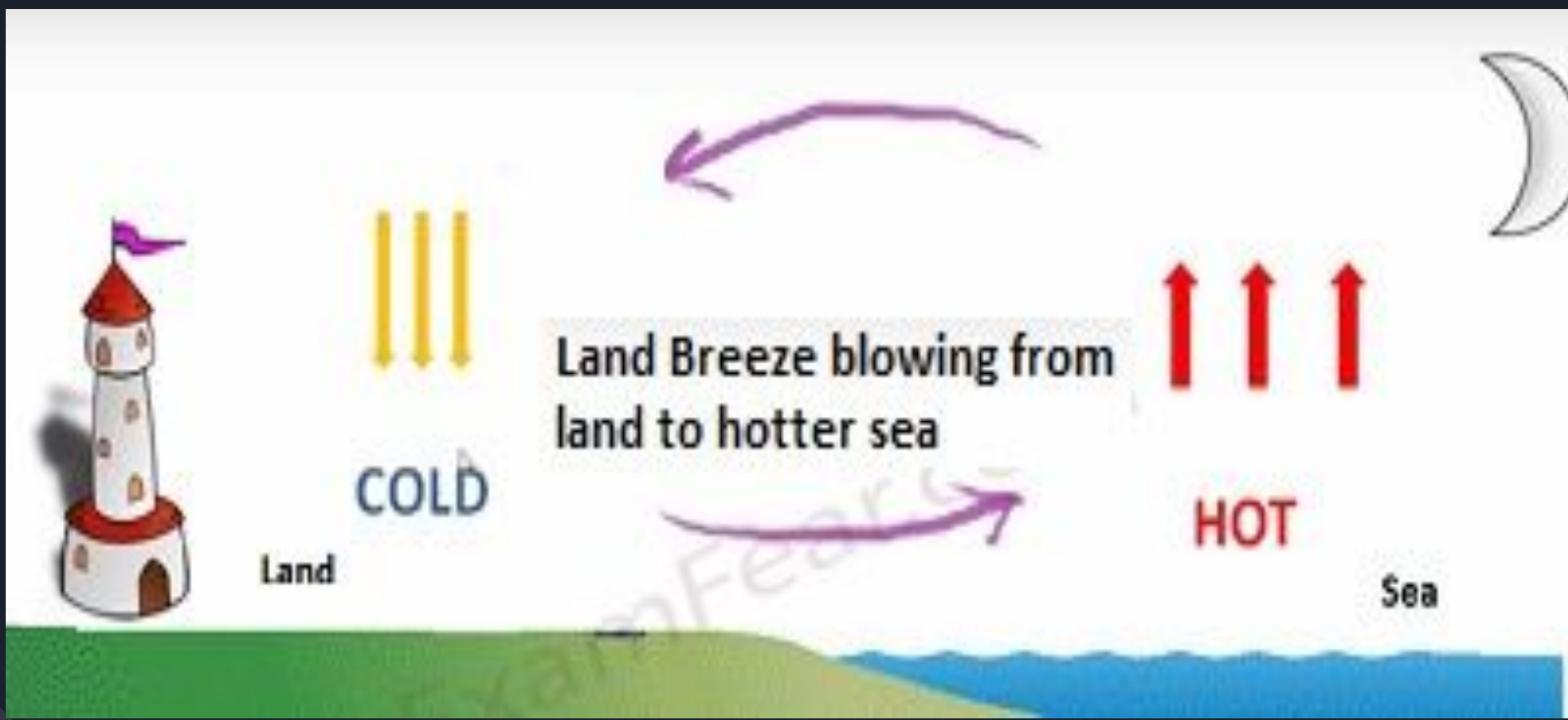
Sea Breeze and Land Breeze-

The land gets heated up by the heat radiated by the sun, much faster than the water during daytime. This heats up the air over the land and it expands and hence the hot air rises up and creates a vacuum.

The cool air from the sea occupies the space left by the hot air. The warm air from the land moves towards the sea to complete the cycle. The air from the sea is called the sea breeze.

But the reverse process takes place at night. The land cools down quickly and sea water remains hot. This heats up the air over the sea and it expands and hence the hot air rises up and creates a vacuum. The cool air from the land occupies the space left by the hot air. And hence the cool air moves from the land to the sea and is known as the land breeze.

Day Time


Land Breeze blowing from
land to hotter sea
COLD
HOT
Land
Sea

Night Time

PLENARY.

Question.

Differentiate between two modes of transfer of heat, i.e. convection and conduction.

Answer:

Difference between convection and conduction -

Conduction	Convection
The mode of transfer of heat from the hotter part material to its colder part or from a hot material to a cold material in contact with it without the movement of material as a whole. So, this phenomenon is known as conduction	The mode of transfer of heat from the hotter part of a fluid to its colder parts by the movement of liquid itself. So, this phenomenon is known as convection.

In all the solids, heat is transferred by the process of conduction	In all the liquids and gases, heat is transferred by the process of convection

ASSESSMENT

Q. The freezer is located at the top of the refrigerator. Explain why.

A. The freezer is located at the top of the refrigerator. It is because the air inside and around the compartments of freezer gets cool and move downwards and on the other side, the lesser cool air moves upward to get cooled.

So, as a result of this, convection of heat are setup in the air and the tower section of the . refrigerator also gets cooled faster.