



PHYSICS

BOOKS - NAVNEET SCIENCE (HINGLISH)

PARAGRAPH BASED QUESTIONS

Heat

1. Read the following paragraph and answer the questions.

If heat is exchanged between a hot and cold object, the temperature of the cold object goes on increasing due to gain of energy and the temperature of the hot object goes on decreasing due to loss of energy.

The change in temperature continues till the temperatures of both the objects attain the same value. In this process, the cold object gains heat energy and the hot object loses heat energy. If the system of both the objects is isolated from the environment by keeping it inside a heat resistant box (meaning that the energy exchange takes place between the two

objects only), then no energy can flow from inside the box or come into the box.

i. Heat is transferred from where to where?



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2. Read the following paragraph and answer the questions.

If heat is exchanged between a hot and cold object, the temperature of the cold object goes on increasing due to gain of energy and the temperature of the hot object goes on

decreasing due to loss of energy.

The change in temperature continues till the temperatures of both the objects attain the same value. In this process, the cold object gains heat energy and the hot object loses heat energy. If the system of both the objects is isolated from the environment by keeping it inside a heat resistant box (meaning that the energy exchange takes place between the two objects only), then no energy can flow from inside the box or come into the box.

Which principle do we learn about from this process?



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3. Read the following paragraph and answer the questions.

If heat is exchanged between a hot and cold object, the temperature of the cold object goes on increasing due to gain of energy and the temperature of the hot object goes on decreasing due to loss of energy.

The change in temperature continues till the temperatures of both the objects attain the same value. In this process, the cold object

gains heat energy and the hot object loses heat energy. If the system of both the objects is isolated from the environment by keeping it inside a heat resistant box (meaning that the energy exchange takes place between the two objects only), then no energy can flow from inside the box or come into the box.

How will you state the principle briefly?



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4. Read the following paragraph and answer the questions.

If heat is exchanged between a hot and cold object, the temperature of the cold object goes on increasing due to gain of energy and the temperature of the hot object goes on decreasing due to loss of energy.

The change in temperature continues till the temperatures of both the objects attain the same value. In this process, the cold object gains heat energy and the hot object loses heat energy. If the system of both the objects

is isolated from the environment by keeping it inside a heat resistant box (meaning that the energy exchange takes place between the two objects only), then no energy can flow from inside the box or come into the box.

Which property of the substance is measured using this principle?



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Lenses

1. Read the paragraph and answer the questions given below it:

Construction of a compound microscope :

(1) A compound microscope consists of a metal tube fitted with two convex lenses at the two ends. These lenses are called the objective lens (the lens directed towards the object) and the eyepiece (the lens directed toward the eye). Both the lenses are small in size, but the cross section of the objective lens is less than that of the eyepiece. The objective lens has a short focal length. The focal length

of the eyepiece is more than that of the objective lens.

(2) The metal tube is mounted on a stand. The principle axes of the objective lens and the eyepiece are along the same line. The distance between the object and the objective lens can be changed with a screw. It is possible to change the distance between the objective lens and the eyepiece.

Working :

(1) The object to be observed is illuminated and placed in front of the objective lens, slightly beyond the focal length of the

objective lens. Its real, inverted and enlarged image is formed by the objective lens on the other side.

(2) This intermediate image lies within the focal length of the eyepiece. It serves as an object for the eyepiece. The eyepiece works as a simple microscope. The final image is virtual, highly enlarged and inverted with respect to the original object. It can be formed at the minimum distance of distinct vision from the eyepiece. The final image is observed by keeping the eye close to the eyepiece.

Use: This microscope is used to observe blood

cells, microorganisms, sec.

In a compound microscope, which lens which lens has greater focal length?



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2. Read the paragraph and answer the questions given below it:

Construction of a compound microscope :

(1) A compound microscope consists of a metal tube fitted with two convex lenses at the two ends. These lenses are called the

objective lens (the lens directed towards the object) and the eyepiece (the lens directed toward the eye). Both the lenses are small in size, but the cross section of the objective lens is less than that of the eyepiece. The objective lens has a short focal length. The focal length of the eyepiece is more than that of the objective lens.

(2) The metal tube is mounted on a stand. The principle axes of the objective lens and the eyepiece are along the same line. The distance between the object and the objective lens can be changed with a screw. It is possible to

change the distance between the objective lens and the eyepiece.

Working :

(1) The object to be observed is illuminated and placed in front of the objective lens, slightly beyond the focal length of the objective lens. Its real, inverted and enlarged image is formed by the objective lens on the other side.

(2) This intermediate image lies within the focal length of the eyepiece. It serves as an object for the eyepiece. The eyepiece works as a simple microscope. The final image is

virtual, highly enlarged and inverted with respect to the original object. It can be formed at the minimum distance of distinct vision from the eyepiece. The final image is observed by keeping the eye close to the eyepiece.

Use: This microscope is used to observe blood cells, microorganisms, etc.

Where do you place the object to be observed with a compound microscope ?



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3. Read the paragraph and answer the questions given below it:

Construction of a compound microscope :

(1) A compound microscope consists of a metal tube fitted with two convex lenses at the two ends. These lenses are called the objective lens (the lens directed towards the object) and the eyepiece (the lens directed toward the eye). Both the lenses are small in size, but the cross section of the objective lens is less than that of the eyepiece. The objective lens has a short focal length. The focal length

of the eyepiece is more than that of the objective lens.

(2) The metal tube is mounted on a stand. The principle axes of the objective lens and the eyepiece are along the same line. The distance between the object and the objective lens can be changed with a screw. It is possible to change the distance between the objective lens and the eyepiece.

Working :

(1) The object to be observed is illuminated and placed in front of the objective lens, slightly beyond the focal length of the

objective lens. Its real, inverted and enlarged image is formed by the objective lens on the other side.

(2) This intermediate image lies within the focal length of the eyepiece. It serves as an object for the eyepiece. The eyepiece works as a simple microscope. The final image is virtual, highly enlarged and inverted with respect to the original object. It can be formed at the minimum distance of distinct vision from the eyepiece. The final image is observed by keeping the eye close to the eyepiece.

Use: This microscope is used to observe blood

cells, microorganisms, sec.

State which distance is adjusted to observe the object with a compound microscope.



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4. Read the paragraph and answer the questions given below it:

Construction of a compound microscope :

(1) A compound microscope consists of a metal tube fitted with two convex lenses at the two ends. These lenses are called the

objective lens (the lens directed towards the object) and the eyepiece (the lens directed toward the eye). Both the lenses are small in size, but the cross section of the objective lens is less than that of the eyepiece. The objective lens has a short focal length. The focal length of the eyepiece is more than that of the objective lens.

(2) The metal tube is mounted on a stand. The principle axes of the objective lens and the eyepiece are along the same line. The distance between the object and the objective lens can be changed with a screw. It is possible to

change the distance between the objective lens and the eyepiece.

Working :

(1) The object to be observed is illuminated and placed in front of the objective lens, slightly beyond the focal length of the objective lens. Its real, inverted and enlarged image is formed by the objective lens on the other side.

(2) This intermediate image lies within the focal length of the eyepiece. It serves as an object for the eyepiece. The eyepiece works as a simple microscope. The final image is

virtual, highly enlarged and inverted with respect to the original object. It can be formed at the minimum distance of distinct vision from the eyepiece. The final image is observed by keeping the eye close to the eyepiece.

Use: This microscope is used to observe blood cells, microorganisms, etc.

State the nature of the final image in a compound microscope relative to the object.



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5. Read the paragraph and answer the questions given below it:

Construction of a compound microscope :

(1) A compound microscope consists of a metal tube fitted with two convex lenses at the two ends. These lenses are called the objective lens (the lens directed towards the object) and the eyepiece (the lens directed toward the eye). Both the lenses are small in size, but the cross section of the objective lens is less than that of the eyepiece. The objective lens has a short focal length. The focal length

of the eyepiece is more than that of the objective lens.

(2) The metal tube is mounted on a stand. The principle axes of the objective lens and the eyepiece are along the same line. The distance between the object and the objective lens can be changed with a screw. It is possible to change the distance between the objective lens and the eyepiece.

Working :

(1) The object to be observed is illuminated and placed in front of the objective lens, slightly beyond the focal length of the

objective lens. Its real, inverted and enlarged image is formed by the objective lens on the other side.

(2) This intermediate image lies within the focal length of the eyepiece. It serves as an object for the eyepiece. The eyepiece works as a simple microscope. The final image is virtual, highly enlarged and inverted with respect to the original object. It can be formed at the minimum distance of distinct vision from the eyepiece. The final image is observed by keeping the eye close to the eyepiece.

Use: This microscope is used to observe blood

cells, microorganisms, sec.

State the use of a compound microscope.



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