

Answer the following in short (10 marks)

1. (a) Which kind of garbage is not converted into compost by the redworms?
(b) Have you seen any other organism besides redworms, in your pit? If yes, try to find out their names. Draw pictures of these?
2. Do you think it is better to use compost instead of chemical fertilisers? Why?
3. Why is it illegal to burn leaves and other plant wastes?
4. Classify the objects or materials given below as opaque, transparent or translucent and luminous or non-luminous:
Air, water, a piece of rock, a sheet of aluminium, a mirror, a wooden board, a sheet of polythene, a CD, smoke, a sheet of plane glass, fog, a piece of red hot iron, an umbrella, a lighted fluorescent tube, a wall, a sheet of carbon paper, the flame of a gas burner, a sheet of cardboard, a lighted torch, a sheet of cellophane, a wire mesh, kerosene stove, sun, firefly, moon. (Put tabular column)?
5. In a completely dark room, if you hold up a mirror in front of you, will you see a reflection of yourself in the mirror?

Fill up: (3 marks)

6. Object like the sun that give out or emit light of their own are called _____
Object.
7. Light travels in _____ line.
8. Compost by redworms is called _____.

Key words: (7 marks)

9. Opaque?
10. Vermicomposting?
11. Compost?

Garbage In Garbage Out

(NCERT Chapter Answers and Q & A)

Q1: Fill in the blanks

Answer:

1. Converting plant and animal waste including that from kitchen, into manure, is called **composting**.
2. A garbage dump is also used as **landfill**.
3. The method of making compost from kitchen garbage using **redworms** is called vermicomposting.
4. Consuming food packed in such plastic bags could be **harmful** to our health.

Q2: (a) Which kind of garbage is not converted into compost by the redworms?

(b) Have you seen any other organism besides redworms, in your pit? If yes, try to find out their names. Draw pictures of these.



redworms - friends of farmers
credits: Petr Kratochvil

Answer: Non bio-degradable waste like pieces of cloth, polythene bags, broken glass, aluminium wrappers, nails, old shoes and broken toys cannot be converted into compost by the redworms.

(b) Besides redworms there are spiders, small bugs, flies, moulds and small insects etc. can be seen in the pit. Compost is also rich of microbes which can't be seen with unaided eye.

Q3: Discuss:

(a) Is garbage disposal the responsibility only of the government?

(b) Is it possible to reduce the problems relating to disposal of garbage?

Answer:

(a) Garbage Disposal is the responsibility of every citizen. If we continue to generate so much garbage, very soon our beautiful earth will convert into a big garbage-bin. Non-biodegradable waste like plastic is harmful to our environment as well as to our health. We must ensure ways to reduce production of garbage. Wherever possible, we must use recyclable material in our daily use.

(b) Yes it is possible to reduce the problems relating to disposal of garbage to a large extent. We should use those materials which are recyclable. We should avoid or reduce the use of non-biodegradable materials at minimum level. While throwing out garbage in trash can, we should separate biodegradable waste from non-biodegradable and throw them in separate bins.

Q4: (a) What do you do with the left over food at home?

(b) If you and your friends are given the choice of eating in a plastic plate or a banana leaf platter at a party, which one would you prefer and why?

Answer: (a) Left over food can be collected and be converted into compost. We can feed our pet animals with left over food. If enough food is left (e.g. after a party), we may distribute the food to shelter homes.

(b) Banana leaf is a better choice. It is bio-degradable and can be disposed easily. On the other hand, eating in plastic plate is not good. Plastic material may contain harmful substance which can make the contained food toxic, which is harmful to our health. Also plastic is non-biodegradable, it will not dispose off easily.

Q5: (a) Collect pieces of different kinds of paper. Find out which of these can be recycled.

(b) With the help of a lens look at the pieces of paper you collected for the above question. Do you see any difference in the material of recycled paper and a new sheet of paper ?

Answer:

(a) Almost all kinds of paper are recyclable i.e. newspapers, magazines, papers, notebooks, envelopes etc.

(b) The difference between new sheet and recycle paper is subtle. Usually hand made recycled paper is of coarse

quality.

Q6: (a) Collect different kinds of packaging material. What was the purpose for which each one was used? Discuss in groups.

(b) Give an example in which packaging could have been reduced?

(c) Write a story on how packaging increases the amount of garbage.

Answer:

(a) Different kinds of packaging materials used commonly are:

1. Cardboard - used as shoe boxes
2. Plastic Bags - Toys covers, sarees bags
3. Wooden Boxes - Fruit baskets
4. Jute Bags - School bags, shopping bags

(b) Since plastic is harmful to our environment and is non-biodegradable. We should avoid using plastic packaging.

(c) The basic purpose of packaging is to protect the product from tampering and to maintain its freshness. However, most of the packaging material is used to beautify the boxes and make them look attractive on the shelves. Unfortunately a large volume of packaging material goes waste and is thrown into dustbin. For example, if you go to any park, there dustbins are full of potato chips wrappers. It unnecessarily increases the amount of garbage. It also increase the cost of the product due to unnecessary packaging. We should seriously consider how to reduce unnecessary packaging. We should prefer buy products carry less packaging material.

Q7: Do you think it is better to use compost instead of chemical fertilisers? Why?

Answer: No doubt compost is better to use than chemical fertilizers due to following reasons:

1. Compost is much easier to prepare.
2. Compost is environment friendly whereas fertilizers can harm our health and the environment.
3. Compost does not pollute our environemnt.
4. Compost decomposes bio-degradable waste into natural soil. It conserves our environment.

Q8: How do redworms prepare vermicompost?

Answer: Red worms have a special structure called gizzards in their bodies with which they grind food material and covert it into manure.

Q9: What will happen if garbage is not disposed off?

Answer: If garbage is not properly disposed off, these garbage dumps turn into breeding grounds for micro-organisms, flies, cockroaches and mosquitoes, that may cause diseases.

Q10: Why is it illegal to burn leaves and other plant wastes?

Answer: Burning of leaves and other plant wastes produces smoke and gases that are harmful to our health. They may lead to asthma and lung diseases. Instead of burning, these plant wastes must be converted into manure.

Q11: Why should we not throw plastic bags or wrappers carelessly on roads and other places?

Answer: The plastic bags thrown away carelessly on roads and other places get into drains and the sewer system. As a result, drains get choked and the water spills on the roads. During heavy rains, it might even create a flood like situation.

Sometimes, these bags are eaten by stray animals like cows, dogs etc. These bags are toxic in nature and affect their health.

LIGHT, SHADOWS AND REFLECTIONS

NCERT Solution, Q & A

Q1(MCQ): A body which emits light by itself is

- (a) Luminous body
- (b) Non luminous body
- (c) Shadow
- (d) Opaque body

Answer: (a) Luminous body

Q2: Fill in the Blanks

- (i) Object like the sun that give out or emit light of their own are called _____ Object.
- (ii) Light travels in _____ line.
- (iii) _____ are formed when an opaque object comes in the path of light
- (iv) Polished surfaces produce _____ reflection which causes glare in our eyes.
- (v) _____ objects allow light to pass through them completely.
- (vi) _____ objects do not allow the light to pass through it at all.
- (vii) _____ objects allow the light to pass through them partially.
- (viii) Stars are _____ sources of light.
- (ix) Shadows are of two kinds named _____ and _____.

Answer:

- (i) luminous
- (ii) straight
- (iii) Shadows
- (iv) regular
- (v) Transparent
- (vi) Opaque
- (vii) Translucent
- (viii) natural
- (ix) umbra, penumbra

Q3(NCERT): Rearrange the boxes given below to make a sentence that helps us understand opaque objects.

O	W	S	A	K	E	O	P	A	Q	U	E	O	B	J	E	C	T	S	M
S	H	A	D																

Answer: OPAQUE OBJECTS MAKE SHADOWS

Q4: What are luminous objects? Give two examples.

Answer: Objects that emit their own light are called luminous objects. Stars, Sun, candle, torch are examples of luminous objects. The light emitted by luminous objects enables us to see things.

Q5: What are non-luminous objects? Give two examples.

Answer: The objects which do not emit light are called non-luminous objects. Table, chair, trees, moon are examples of non-luminous objects.

Q6: To see an object what do we need?

Answer: To see any non-luminous object we need the following:

- source of light
- an object
- eyes

When a light emitting from luminous body falls on a non-luminous object and is reflected. This reflected light reaches our eyes enables us to see that object.

Q7: Moon appears bright at night. Is it a luminous or non-luminous body?

Answer: Moon is a non-luminous body, it does not emit its own light. It reflects the sun light that falls on it.

Q8(NCERT): Classify the objects or materials given below as opaque, transparent or translucent and luminous or non-luminous:

Air, water, a piece of rock, a sheet of aluminium, a mirror, a wooden board, a sheet of polythene, a CD, smoke, a sheet of plane glass, fog, a piece of red hot iron, an umbrella, a lighted fluorescent tube, a wall, a sheet of carbon paper, the flame of a gas burner, a sheet of cardboard, a lighted torch, a sheet of cellophane, a wire mesh, kerosene stove, sun, firefly, moon.

Answer:

OBJECT	TRANSPARENT /TRANSLUCENT /OPAQUE	LUMINOUS/ NON-LUMINOUS
AIR, WATER	TRANSPARENT	NON-LUMINOUS
PIECE OF ROCK, SHEET OF ALUMINIUM, MIRROR, WOODEN BOARD, CD, UMBRELLA, WALL, SHEET OF CARBON PAPER, SHEET OF CARDBOARD, MOON	OPAQUE	NON-LUMINOUS
A SHEET OF POLYTHENE, SMOKE, FOG, SHEET OF CELLOPHONE, WIRE-MESH,	TRANSLUCENT	NON-LUMINOUS
A PIECE OF RED HOT IRON, LIGHT FLUORESCENT TUBE, LIGHTED TORCH, KEROSENE STOVE, SUN, FIREFLY	OPAQUE	LUMINOUS
FLAME OF GAS BURNER	TRANSLUCENT	LUMINOUS

Q9: How shadows are formed? What are different types of shadows?

Answer: When some objects are placed in the path of light, a dark portion is formed on the opposite side of the objects. This dark portion is called shadow.

There are two types of shadows:

- umbra
- penumbra.

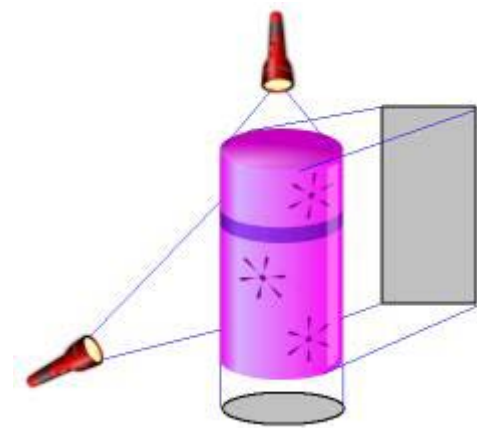
The umbra is formed where no light reaches and it is a dark, black shadow.

The penumbra is formed where some light reaches and it is grey in color.

Q10: Do all objects cast shadow?

Answer: No. Only opaque objects cast shadow.

Q11: Which type of surfaces produce clear images?



Answer: Polished and plane reflecting surfaces produce clear image.

Q12(NCERT): Can you think of creating a shape that would give a circular shadow if held in one way and a rectangular shadow if held in another way?

Answer: A cylinder object can cast shadows in two ways. When the top circular view faces the sun, a circular shape shadow is formed. When its horizontal side faces the sun, it casts a rectangular shadow.

Q13(NCERT): In a completely dark room, if you hold up a mirror in front of you, will you see a reflection of yourself in the mirror?

Answer: To see the reflection, source of light is required. We can only see in the presence of light.



Q14: What is lateral inversion?

Answer: When an object is placed in front of a plane mirror, the right side of the object appears to be on the left side of the image and the left side of the object appears to be on the right side of the image. This is called lateral inversion.

Q15: State the principle behind the working of a pinhole camera.

Answer: Light travels in straight lines. This principle is behind the working of a pinhole camera.

Q16: What are transparent objects?

Answer: The objects which allow light to pass through them are called transparent objects.

Q17: What are opaque objects?

Answer: The objects which do not allow light to pass through them are called opaque objects.

Q18: What are translucent objects?

Answer: The objects which partially allow light to pass through them are called translucent objects.

Q19: What types of objects do not cast shadows?

Answer: Transparent objects and few translucent objects, because light passes through them.

Q20(MCQ): The image formed in pinhole camera is

- (a) Inverted
- (b) Erect
- (c) Both a and b
- (d) None of the above

Answer: (a) Inverted