

## Garbage In, Garbage Out

### IN TEXT QUESTIONS

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**Q.1. What could be useful garbage? Why was it thrown in the first place?**

**Ans.** The peels of fruits and vegetables, left-over cooked food and fallen leaves of trees are useful garbage. It is thrown in the first place because its primary use was over. These can be converted into compost to be used again. This compost is used as manure in the agricultural fields.

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**Q.2. Why is burning leaves harmful?**

**Ans.** Burning of leaves creates a lot of air pollution, which may contain toxic gases. These gases are harmful for living organisms and can cause respiratory diseases.

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**Q.3. Is burning of leaves illegal in India? If not, should it be made illegal?**

**Ans.** No, burning of leaves is not made illegal by the Government of India. In my opinion, it should be illegal because a lot of air pollution is created by it, this is very harmful for our environment and local people living in that area.

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**Q.4. Why should containers used for storing poisonous substances be recycled separately?**

**Ans.** Containers used for storing poisonous substances contain leftover chemicals in them. These containers when recycled contaminate other recycling substances thereby making every recycled product harmful. Therefore, they should be recycled separately.

**Q.5. Should the containers used for storing harmful substances be used to make plastic bags?**

**Ans.** No, these containers of poisonous substances when recycled, should not be used to make plastic bags because plastic bags are used to carry grocery items or day-to-day items which may get contaminated.

# NCERT

## Exercises (Questions-Solutions)

### EXERCISES

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**Q.1.** Answer the following questions:

(a) Which kind of garbage is not converted into compost by the red worms?

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

**Ans.** (a) Non-biodegradable wastes such as broken glass, aluminium wrappers, plastic, polythene bags, etc cannot be converted into compost by the red worms.

(b) Yes, saprophytic organisms such as moulds and bacteria, are also helpful in decomposition of biodegradable substances. Saprophytic organisms feed on dead and decaying matter.



Putting garbage heaps in pits

**Q.2.** Discuss

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

(b) It is possible to reduce the problems relating to disposal of garbage?

**Ans.** (a) In most of the cities, the responsibility of garbage disposal is on Municipal Corporation and most of the people think they have no responsibility. We should realise that garbage disposal is the collective responsibility of both the people and the government. We must ensure ways to reduce production of garbage. Wherever possible, we must follow the 3R's.

(b) Yes, it is possible to reduce the problems related to disposal of garbage by following 3R's rule:

(i) **Reduce** We should minimise the use of things that produce wastes, e.g. using public transport for travelling.

(ii) **Recycle** Things such as plastic, paper, glass and metals should be separated from garbage and recycled to make new articles instead of dumping them with other wastes, e.g. recycling of paper.

(iii) **Reuse** We can reuse many things which we generally throw after one use, e.g. plastic bottle of jam or pickle can be used for storing things in the kitchen.

If we sincerely follow these rules, the problem of garbage disposal can be minimised,

**Q.3.** Answer the following questions:

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

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

- Ans.** (a) We usually throw the left-over food at home. But it is a biodegradable waste which can be converted by microorganisms into useful products. So, left-over food at home should be dumped into compost pits to convert them into manure. This manure can be used for growing plants.
- (b) We will prefer a banana leaf platter because it is biodegradable and can be disposed easily. By the process of composting, it can be converted into manure, while a plastic plate is non-biodegradable and has a lot of difficulty in disposal. It also causes pollution.

**Q.4. Answer the following questions:**

**(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?**

- Ans.** (a) Pieces of papers can be obtained from newspapers, notebooks, magazines, etc. All of these can be recycled whereas shiny plastic coated papers cannot be recycled. Because plastic is non-biodegradable. The paper which cannot be recycled can be reused to make paper bags, envelopes, etc.
- (b) Yes, there is a difference, surface of recycled paper is rough, while that of new sheet of paper is smooth. Recycled sheets are prepared from used papers. This type of paper can be used for making carry bags and other packing materials.

**Q.5. Answer the following questions:**

**(a) Collect different kinds of packaging materials. 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?**

- Ans.** (a) Different kinds of packaging material used commonly are
- Plastic bags — for carrying eatables or other household things.
  - Cardboard — used as shoeboxes, etc.
  - Jute bags — school bags and shopping bags.
- (b) The packaging in plastic bags must be reduced as these are non-recyclable and harmful. Instead, paper bags can be used.
- (c) Packaging material increases the amount of garbage as it is being thrown carelessly on the roads, etc. Also, they are non-biodegradable waste. Therefore, they cause harm to the nature through pollution.

**Q.6. Do you think, it is better to use compost instead of chemical fertilisers? Why?**

**Ans.** Yes, it is better to use compost instead of chemical fertilisers. The reasons are as follows:

- (i) Compost is ecofriendly, while chemical fertilisers destroy the natural composition of soil by adding unwanted chemicals into the soil.
- (ii) Production of compost is easy and harmless whereas production of chemical fertilisers is a costly process.
- (iii) Chemical fertilisers cannot be decomposed by natural methods hence create pollution of soil and water.



# NCERT

## Exemplar

(Problems-Solutions)

### MULTIPLE CHOICE QUESTIONS

**Q 1.** The method of preparing compost with the help of earthworms is called

- (a) composting                      (b) vermicomposting
- (c) manuring                      (d) decomposing

**Ans.** (b) Vermicomposting is the method of preparing compost with the help of red worm (earthworms).

**Q 2.** If you dump kitchen waste in a pit, it may, after sometime

- (a) convert into compost
- (b) convert into vermin compost
- (c) remain as such
- (d) remain forever in its dried form

**Ans.** (a) If you dump kitchen waste in a pit, it may, after sometime convert into compost. Kitchen waste is biodegradable that is accessible to action of microbes.

**Q 3.** Which of the following activities does not reflect responsible behaviour with regard to waste disposal?

- (a) Goods carried in paper bags or cloth bags
- (b) Waste collected in polythene bags for disposal
- (c) Waste separated into those that degrade and those that do not
- (d) Making handicrafts with used up notebooks

**Ans.** (b) Waste collected in polythene bags for disposal does not reflect responsible behaviour with regard to waste disposal. Polythene bags itself is non-biodegradable.

**Q 4.** Paheli gave the following ill effects of the practice of burning dried leaves and other plant parts:

- (i) Burning degrades the soil.
- (ii) Burning produced harmful gases/fumes.
- (iii) Precious raw materials to obtain manure at low cost is lost.
- (iv) Lot of heat is generated unnecessarily.

The correct reasons of why we should not burn leaves are

- (a) (i), (ii) and (iv)                      (b) (i), (ii), (iii) and (iv)
- (c) (ii) and (iii)                      (d) (ii), (iii) and (iv)

**Ans.** (b) The ill effects of the practice of burning dried leaves and other plant parts is that it degrades the soil, produce harmful gases/fumes, precious raw materials to obtain manure at low cost is lost and also a lot of heat is generated unnecessarily because of this.

**Q 5.** The steps required for conversion of kitchen garbage into manure are given below in a jumbled form:

- (i) Put garbage in a pit.
- (ii) Cover the bottom of the pit with sand.
- (iii) Cover the pit loosely with a gunny bag or grass.
- (iv) Add worms.

Which of the following shows the correct sequence of the above steps?

- (a) (ii), (i), (iii), (iv)      (b) (i), (ii), (iii), (iv)  
 (c) (ii), (iv), (i), (iii)      (d) (iv), (i), (ii), (iii)

**Ans.** (a) The steps required for conversion of kitchen garbage into manure are as follows:  
 Cover the bottom of the pit with sand → Put garbage in a pit → Cover the pit loosely with a gunny bag or grass → Add worms.

### VERY SHORT ANSWER TYPE QUESTIONS

**Q 6.** Read the items mentioned in Columns I and II and fill in the related process in the Column III

Column I	Column II	Column III
(a) Organic waste	Earthworms	(i) .....
(b) Garbage	Dig pit and fill with garbage	(ii).....
(c) Old newspaper		(iii).....

**Ans.** (i) Vermicomposting  
 (ii) Garbage disposal/landfill  
 (iii) Recycle

**Q 7.** Correct the definitions of certain terms given below by changing only one word.

- (i) **Compost** Substances converted into manure for use in industries.  
 (ii) **Landfill** Garbage buried under water in an area.  
 (iii) **Recycling** Reuse of unused material in the same or another form.

**Ans.** (i) Compost is a substance converted into manure for use **in agricultural fields**.  
 (ii) Landfill is where garbage is buried under **soil** in an area.  
 (iii) Recycling is a process of **used** material in the same or another form.

**Q 8.** Provide the suitable term that expresses the meaning of each of the following statements:

- (a) Greeting cards made from newspaper.  
 (b) Contents of the waste bins.  
 (c) Worms converting certain kinds of waste into manure.  
 (d) An area where a lot of garbage is collected, spread out and covered with soil.

**Ans.** A suitable term describing/expressing the meaning of the above given statements is as follow:  
 (a) Recycling  
 (b) Garbage  
 (c) Vermicomposting  
 (d) Landfill

### SHORT ANSWER TYPE QUESTIONS

**Q 9.** To what use can you put the following kinds of garbage and how?

- (a) Rotting smelly garbage  
 (b) Dry leaves collected in a garbage  
 (c) Old newspapers

**Ans.** (a) Rotting smelly garbage can be converted into compost.  
 (b) Dry leaves collected in a garbage can be used as manure.  
 (c) Old newspapers can be recycled to make paper bags or paper pulp for handicrafts.

**Q 10.** Paheli was writing a letter to her friend. She crumpled and threw the first draft of her letter on the floor as it had become untidy. Similarly, she crumpled and threw 6 more papers on the ground. In the end, she picked them up and put them in a polythene bag and threw it on the road outside her house. Do you think, Paheli's action were responsible? What would you have done if you were in her place?

**Ans.** No, in my opinion, Paheli's action was not responsible. If I would have been in her place, I would have used the paper for doing rough work or convert it into paper pulp to make a handicraft item.

**Q 11.** Beera, a farmer would clear his field everyday and burn dry leaves fallen on the ground. After sometime, he found that those living in huts near his field were suffering from cough and breathing problems.

(a) Can you explain, why?

(b) Also suggest an environment friendly way to dispose the dry leaves.

**Ans.** (a) Fumes and gases produced from burning materials caused cough and breathing problems in the nearby area.

(b) An environment friendly way to dispose the dry leaves is to convert it into manure.

### LONG ANSWER TYPE QUESTIONS

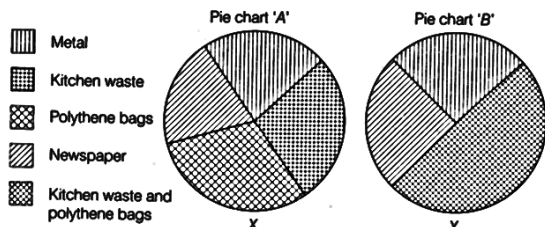
**Q 12.** Put a tick (✓) against the garbage items given in table which could be converted into manure. Put a cross (X) against the others.

Garbage items	Make manure or not
(i) Eggshells	
(ii) Straw	
(iii) Dry flowers	
(iv) Pebbles	
(v) Broken pieces of glass	
(vi) Nails and screws	
(vii) Plastic bangles	
(viii) Left over food	
(ix) Steel broken vessel	
(x) Dead animals	

**Ans.** The given table shows garbage items that can be converted into manure or not.

Garbage items	Make manure or not
(i) Eggshells	✓
(ii) Straw	✓
(iii) Dry flowers	✓
(iv) Pebbles	X
(v) Broken pieces of glass	X
(vi) Nails and screws	X
(vii) Plastic bangles	X
(viii) Left over food	✓
(ix) Steel broken vessel	X
(x) Dead animals	✓

**Q 13.** The pie charts A and B shown in the figure are based on waste segregation method adopted by two families X and Y respectively.



**Which of the two families X or Y, do you think is more environmentally conscious and why?**

**Ans.** The family X is more environment friendly/conscious because they dispose off their kitchen waste and polythene bags separately. Disposing them separately has an advantage as kitchen waste is biodegradable and can be converted into compost. Polythene bags, on the contrary are non-biodegradable.

**Q 14.** Write three sentences on what comes to when you get a chance to see the following:

(a) A rag picker

(b) A cow eating a polythene bag

(c) Foul odour emanating from garbage at the entrance of your house.

**Ans.** Following things come to our mind when we see

(a) A rag picker

(i) Poor people working due to poverty.

(ii) He removes the garbage generated by others.

(iii) He is exposing himself to harmful substances, generated due to toxic waste.

(iv) Sorting out the recyclable waste.

(b) A cow eating a polythene bag

(i) Cow is getting exposed to hazardous material

(ii) There may be a possibility of polythene choking the animal to death.

(iii) Incorrect/Improper disposal of polythene by us

(c) Foul odour emanating from garbage at the entrance of our house

(i) There must be a large quantity of waste generate at the entrance of our house

(ii) Unhealthy surrounding due to this.

(iii) Unpleasant sight.

**Q 15.** Beautiful hand crafted articles like boxes and toys are made up of paper pulp in our country. Can you explain how paper pulp which is made from paper can be used to make hard boxes and other articles?

**Ans.** By following these simple steps, we can make hard gifting boxes or other articles from the recycled paper pulp:

Step I Create a stencil by unfolding a small, one piece cardboard box and trace it on a piece of cardboard that is the same size as your mold. Then, cut out that shape with scissors.

Step II Place the box stencil between your mold and deckle.

Step III Raise the mold, deckle, and stencil to the surface in one continuous motion and then remove them from the pulp.

Step IV Remove the box from the stencil and let the paper dry.

Step V Assemble the box by folding and gluing or taping the edges. Decorate it as your need.

**Q 16.** Recently, a ban on plastic bags has been imposed in many places? Is the ban justified? Give reasons in three sentences.

**Ans.** The recent ban on plastic bags is justified as due to this:

- (i) Local people had started taking proper care of plastic disposal.
- (ii) Ban on plastic bags had made people shift to paper bags for their day-to-day routine use.
- (iii) Disposal of plastic bags had come under control due to this ban.

**Q 17. Why should we not burn plastic items?**

**Ans.** We should not burn plastic items because

- (i) they do not burn easily.
- (ii) produce toxic gases when burned and left over ashes are also toxic.
- (iii) add to soil pollution.
- (iv) burnt pieces may be eaten by cows, which may choke them to death.
- (v) toxic gases create many respiratory diseases.

**Q 18. What happens when**

**(a) cooking medium is made to flow down a drain?**

**(b) insecticides, motor oil, paints are poured down the drain?**

**(c) tea leaves, cotton swabs and old soft toys are thrown into the drain?**

- Ans.**
- (a) If cooking medium is made to flow down a drain, it may clog pores in soil and can block pipes also.
  - (b) If insecticides, motor oil, paints are poured down the drain, this may kill useful microbes which help to purify water.
  - (c) If tea leaves, cotton swabs and old soft toys are thrown into the drain, it can choke the drains and block the water supply of the area.

**Q 19. Answer the following questions in one or two words or sentences.**

**(a) Why should we prefer to use paper bags rather than polythene bags?**

**(b) Who one out of the following, should properly dispose the garbage—father, mother, elder brother, younger sister?**

**(c) Which one out of beetles, roundworm and earthworm are used for vermicomposting and why?**

- Ans.**
- (a) We should prefer using paper bags rather than polythene bags as paper can be recycled whereas polythene bags do not degrade.
  - (b) Every member of the society or family is responsible to dispose of garbage properly.
  - (c) Earthworms are the best organisms to be used for vermicomposting as they convert the waste from plants, animals or their products into compost.