

Board – CBSE

Class – 6<sup>th</sup>

Topic – Garbage In Garbage Out

1. (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 pictures of these.

Ans: (a) Garbage substances like broken glass, aluminium wrappers, plastic items, polythene bags, which are non-biodegradable cannot be converted into compost by the redworms.

(b) Yes, saprophytic organisms such as moulds (white, black or greyish cottony patches) and bacteria (which can be seen under a microscope) that help in decomposing biodegradable substances.



Putting garbage heaps in pits.

2. Discuss:  
(a) Is garbage disposal the responsibility only of the government?  
(b) Is it possible to reduce the problems relating to disposal of garbage?

Ans: (a) Along with government and local municipality corporations, it is also the duty of every citizen to help in garbage disposal. A clean environment is necessary to keep us healthy and

also to avoid the spread of diseases. We should dispose the garbages at proper places, such as dustbins so that Safai Karamcharis can collect it easily.

(b) It is possible to reduce the problems relating to disposal of garbage, if we adopt the following means:

(i) The garbage should be thrown at proper places. It should not be thrown ' on streets, roads, parks, etc.

(ii) The part of the garbage that can be reused should be separated from the one that cannot be used. The non-useful components should be disposed of at landfill areas.

(iii) Follow the rule of Three R's:

A. Reduce: Use the things in the minimum amount which is necessary to fulfil your requirement.

B. Recycle: The things such as plastic, paper, glass and metals separated from the garbage may be recycle to make new things instead of dumping them along with other wastes.

C. Reuse: It means use of things again and again. For example, plastic bottles of jam or pickle can be used for storing things in the kitchen.

3. (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 plotter at a party, which one would you prefer and why?

Ans: (a) Left over food at home along with other kitchen waste like vegetable peel, paper are dumped into the compost pit to convert them into manure. Later on manure is used to grow plants.

(b) We will select a banana leaf platter because it can be easily converted into manure by composting.

Plastic plates can be recycled but in this process it gives out harmful gases which pollute the environment. Plastic items cannot be converted into manure by composting.

4. (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 obtained from newspapers, notebooks, magazines, etc. can be recycled. Plastic coated and shiny papers cannot be recycled easily.

(b) The surface of recycled paper is rough whereas the surface of a new sheet of paper is smooth.

5. (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.

Ans: (a) Packaging materials like thermocol, foam sheets, paper cuttings, cardboard, jute are used to protect the articles. Card boxes, plastic containers and tin containers are used to facilitate transportation of the packed materials.

(b) The usage of plastic bags as packaging of food items can be reduced. Packaging of toys, clothes, shoes, chocolate wrappers can be reduced.

(c) We use packaging materials to protect the articles and also to make the package good-looking. For example, to give a gift on birthday, the gift is packed and wrapped in a shiny paper or plastic-coated paper. After use the packing material is thrown in the dustbin. Similarly, plastic bags, cans, aluminium foils, plastic or aluminium cans and other packaging materials are used and thrown out after use.

Many things such as ghee, refined oil, soaps, detergents and most edible goods are sold in small packets.

Thus by all the above said measures, the packaging will increase the amount of garbage.

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

Ans:

Because:

1. Compost is eco-friendly and harmless. It maintains the texture and fertility of the soil.

Chemical fertilisers destroy the natural composition of soil and have adverse effects on human health.

2. Composting helps in recycling of matter and also in disposal of garbage. Leaching of chemical fertilisers causes water pollution and death of aquatic organisms.

3. The production of compost is easy, cheap and harmless whereas production of chemical fertilisers is costly and problematic.

So, it is better to use compost instead of chemical fertilisers.

## MULTIPLE CHOICE QUESTIONS

Choose the correct option:

7. Landfill area is a/an:

- (a) open area
  - (b) high lying open area
  - (c) open area near a river/lake
  - (d) low lying open area
8. The rotting of garbage is said to be completed when the garbage:
- (a) rot completely and not smell
  - (b) rot almost completely, but still smell bad
  - (c) rot only partially
  - (d) not change at all
9. Which of the set of items is not good for making compost?
- (a) Plastic paper, tin foil, wrappers
  - (b) Broken plastic toys, polythene bags, pieces of clothes
  - (c) Egg shells, vegetable and fruit peels and tea leaves
  - (d) Aluminium wrappers, plastic bags and dry leaves
10. Which of the following animals are used for making compost?
- (a) Redworms
  - (b) House fly
  - (c) Cockroach
  - (d) Mosquitoes
11. Leaves falling from trees should be:
- (a) Dumped in landfill areas
  - (b) Dried and burnt
  - (c) Used in making compost
  - (d) Dumped near the ponds and takes

- Ans:
- 1. (d)
  - 2. (a)
  - 3. (c)
  - 4. (a)
  - 5. (c)

## VERY SHORT ANSWER TYPE QUESTIONS

12. What is a landfill?

Ans: A low-lying open area is called landfill.

13. What are blue coloured bins used for?

Ans: Blue bins are used for collecting materials that can be recycled.

14. Give examples of material that can be used again.

Ans: Plastics, metals and glass are the examples of material that can be used again.

15. What type of garbage is thrown in green bins?

Ans: Kitchen and other plants or animal waste are thrown in green bins.

16. Define composting.

Ans: The rotting and conversion of some materials into manure is called composting.

17. Explain the term vermicomposting.

Ans: The method of preparing compost with the help of redworms is called vermicomposting.

18. What are redworms?

Ans: Redworms are a type of earthworms which help in preparing compost from the kitchen wastes and parts of plants or animals.

## SHORT ANSWER TYPE QUESTIONS

19. We should not add wastes containing salts, pickles, oil, vinegar, meat and milk products in the vermicomposting pit to feed the redworms. Why?

Ans: Addition of substances such as salts, oil, pickles, vinegar, meat and milk products to the vermicompost pit causes growth of disease-causing small organisms. They may cause harm to redworms and hinder the preparation of vermicompost.

20. How can the non-useful component be reused?

Ans: The non-useful components of the garbage are separated by Safai Karamcharis. This separated non-useful component of garbage is spread over the landfill and then covered with a layer of soil.

Once the landfill is completely full, it is usually converted into park or a playground. For the next 20 years or so, no building is constructed on it.

21. What do we do to the useful components (biodegradable) of the garbage?

Ans: Generally, useful components of the garbage are used to make compost. Compost is usually developed near the landfill.

(i) For preparing compost, waste materials like fruit and vegetable peel, egg shells, used tea leaves, waste food, dry leaves, newspapers etc. should be dumped in a pit.

(ii) The pit is covered with soil.

(iii) After 20-25 days, observe the garbage. If the garbage is rotted, turned black in colour and no foul smell is emitted, it means rotting of garbage is complete and compost is ready to use.

22. What do you mean by composting?

Ans: The garbage containing plant and animal wastes, waste food, when left as such in pits or heaps is acted upon by bacteria, fungus-like organisms causing rotting. Rotting leads to the formation of manure. It is the conversion of complex molecules into simple molecules which can be used by plants for growth and development. Thus, rotting and conversion of some organic materials into manure is called composting.

23. Why should we not burn dried plant leaves and husks? What is the best way to get rid of them?

Ans: Burning of dried leaves, husk and other plant parts produces smoke and gases that are harmful to our health. Dried leaves, husk and other plant parts can be used for preparing compost.

24. List waste products produced from an industry.

Ans: The waste products produced from an industry are:

1. Chemicals

2. Smoke

3. Ash

4. Empty containers such as glass bottles, plastic articles, wrappers.

5. Plastic bags

6. Broken things, iron or other metals

25. What will happen if garbage is left open in the bin?

Ans: (i) Garbage will rot and bad smells will spread all around the surroundings.

(ii) Garbage will become a breeding spot for flies, mosquitoes and other disease-causing small organisms.

(iii) Due to flies, mosquitoes and other organisms many diseases will spread in the community.

(iv) Rotting garbage may cause air pollution and spread of respiratory disease such as breathing problems.

26. Waste may contain the following things:

Ans: 1. Empty bottles

2. Syringe

3. Needles
4. Amputee
5. Used cotton
6. Injection bottles
7. Used bandages
8. Pieces of plaster
9. Tablet wrapper
10. Empty paper boxes
11. Polythene bags
12. Left over food items
13. Peels of fruits and vegetables.

27. What is papier-mache? How does it help us?

Ans: Papier-mache is a paste made from pulp of waste paper and clay used for moulding into boxes, trays, etc. This helps in recycling of paper.

28. Can you replace the following packaging material with those which can be recycled or reused.

- (1) Milk packets of polythene.
- (2) Dry eatables in polythene.
- (3) Gift items packed with shiny material.
- (4) Glass tumblers packed in a thermocol box.

Ans: (1) Glass bottles or recycling polythene.

(2) Paper bags coated with a thin sheet of aluminium or recycled polythene.

(3) Beautifully designed paper or recycled shiny material.

(4) Glass tumblers packed in straws placed card-board boxes. As thermocol cannot be recycled.

## LONG ANSWER TYPE QUESTIONS

29. List the biodegradable and non-biodegradable waste products in your school. What are the best ways to get rid of this garbage?

Ans: Biodegradable wastes:

- (i) Paper container
- (ii) Chalk boxes
- (iii) Pencil scraps
- (iv) Faeces and urine

- (v) Loose and torn waste paper of exercise notebooks and diaries
- (vi) Dropout leaves and twigs
- (vii) Fruit peels and flower wastes

Non-biodegradable wastes:

- (i) Broken glass wares
- (ii) Plastic and geometrical instruments
- (iii) Plastic and polythene containers
- (iv) Wrappers of toffee, aluminium foil
- (v) Broken iron wire pieces

Disposal of Wastes:

Biodegradable garbage can be put in a pit made in one corner of the school compound. Cover the garbage with soil, and spray some quantity of water. When this pit is full of degradable items, cover it with a mixture of dung and clay for a few weeks.

After a few weeks an odour stops coming out from the pit. It indicates that all the degradable material has been converted into compost manure.

The non-biodegradable garbage can be sold to Kabari or can be dumped in a landfill.

30. What are the uses of plastic?

Ans: Uses:

- (i) Plastic containers can be used to store edible goods.
- (ii) Goods packed in plastic packs can be taken anywhere easily and are waterproof.
- (iii) Plastic containers or articles are good-looking, light in weight, cheap and durable.
- (iv) Plastic containers such as bottles can be used to store chemicals. No chemical effects on it.
- (v) Plastic can be recycled.

31. What are the demerits of plastic?

Ans: Demerits of plastic:

- (i) Plastics give out harmful gases upon heating or burning. These gases may cause many health problems, including cancer in humans.
- (ii) Some people often fill garbage in plastic bags and throw it away in the open. When stray animals look for food in these bags, they swallow plastic bags along with food. Sometimes, they die due to this.



(iii) The plastic bags thrown away carelessly on roads and other places get into drains and the sewer system.

These plastic bags choke the drains. As a result, dirty water spills on the road. It causes the spread of bad smells and diseases.

32. What suggestions would you give to members of the locality to solve the problem of waste material?

Ans: I will suggest the members of my locality to use biodegradable waste in preparing compost. To take people in confidence, you should make efforts to show the path for preparing compost:

(i) You should select a corner of your locality.

(ii) Dig a pit in an open place and ask all the residents to throw their kitchen waste in this pit. Cover the biodegradables in the pit with layers of soil.

(iii) Cover the pit with the mixture of soil and dung.

(iv) After 5-6 weeks, open the pit and show it to the resident of your colony. Also explain that their disposed off material has been converted into compost manure.

(v) You can convince RWA (Resident Welfare Associations) to use this manure for colony parks and also in plant pots kept in individual houses for beautification.

33. Why should we be careful in using plastic bags to store cooked food items?

Ans: (i) Sometimes the plastic bags may not be suitable for keeping eatables. Consuming food packed in such plastic bags could be harmful to our health.

(ii) Many a time shopkeepers use plastic bags that have been used earlier for other purposes.

(iii) Sometimes bags collected by rag pickers are also used after washing them. Use of such recycled plastic bags to keep food items could be harmful for our health. So, shopkeepers can be stressed upon the use of plastic bags approved by the authorities.

34. List the steps for preparing vermicompost.

Ans: (i) Dig a pit about 30 cm deep or select a wooden box.

(ii) Spread a net or chicken mesh at the bottom of the pit or box. You can also spread a 1 to 2 cm thick layer of sand.

(iii) Spread some vegetable wastes including peels of fruits over the sand layer. You can use green leaves, husk or pieces of newspaper, dried stalks of plants and dried animal dung.

(iv) Sprinkle some water to make the layer wet. Do not

(a) Use excess of water

(b) Press a layer of leaves or waste so that it has sufficient air and moisture,

- (v) Now, buy some redworms and put them in the pit.
- (vi) Cover them loosely with a gummy bag or an old sheet of cloth or a layer of grass.
- (vii) Red Worms need food. So you can provide them as food—vegetable and fruit peels, coffee and tea remains and weeds from the field or garden. Bury this food about 2-3 cm inside the pit.
- (viii) Do not put salt, pickles, oil, vinegar, meat and milk preparations. This may cause growth of disease-causing organisms. Redworms do not survive in very hot or very cold surroundings.
- (ix) After 3-4 weeks, put some waste food in one corner of the pit. Most of the worms will shift towards newly added food.
- (x) Remove the compost from the vacated part and dry it in the sun for a few hours. The vermicompost becomes ready for use.

35. Observe the bins and waste material heaps and suggest what materials can be used for preparing handicrafts materials.

Ans: The following handicraft items can be used as bins and waste storage.

prepared from the waste materials usually seen in

1. Designs and sceneries on cardboard, pencil scrap can be used.
2. We can prepare baskets, toys, flower vase, etc.
3. Egg trays can be prepared by papier-mache from waste paper decorated with the help of different colours and can be used.
4. Empty earthen cup (kullarh) can be used as Janjhi by making small hole in it and putting a burnt candle. Light comes out in different designs.
5. Flower vase can be prepared with the help of ice-cream sticks.
6. Different types of toys are prepared with the help of plastic cups, spoons, plates, and forks.
7. Models of historical monuments can be designed with the help of empty injection bottles and ampoules.

You can prepare other objects with the help of your friends, brothers, sisters, relatives, parents and teachers.

36. Explain one way of recycling waste paper.

Ans: One way to recycle the waste papers is as given below:

1. Collect old newspapers, magazines, used notebooks, envelopes and tear out used papers.
2. Make small pieces of paper from these items and put them in a bucket or any other container submerged in water for one or two days.

3. Make a thick paste of wet paper by pounding it. Spread the waste paste on the wire mesh fixed to the frame. You can use a large-sized sieve in place of a frame.

4. Pat the layer of paste gently to make the layer of the paste as uniform as possible. You may spread an old cloth or a sheet of newspaper on the paste to soak up the extra water.

5. Remove the layer of paste from the frame and spread it on a sheet of newspaper in the sun. Put some weight on the corners of the newspaper so that these do not curl up.

You can decorate the paper by adding food colours, dried leaves, flower petals or pieces of coloured paper in the paste. This will help you to get a recycled paper with beautiful patterns on it.

37. What can we do to reduce overuse of plastics?

Ans: 1. Re-use of the plastic bags whenever it is possible to do so without any adverse effects. Neglect re-use of plastic bags for storage or storage of food items to store food items.

2. Insist shopkeepers to use paper bags or jute bags to carry goods purchased,

3. Do not use plastic bags, especially to store eatables.

4. Do not throw plastic bags.

5. Don't fill plastic bags with wastes of plants and animals, such as peels of vegetables and fruits, egg shells, bone pieces of animals, and throw them here and there in open places. Animals may eat such plastic bags for the sake of food items. Later on these cause the death of animals such as cows, buffaloes, dogs and other stray animals. These plastic bags, sometimes suffocate them or choke the alimentary canal which causes indigestion of food and elimination of undigested food.

6. Do not burn plastic bags and other plastic items because they emit harmful gases.

38. Municipality provides two types of dustbins for garbage collection. One coloured with blue colour and other was green colour. Which of the following wastes you will put in the which dustbin?

(Plastic materials, metals and glass items, wastes of plants and animals, peels of fruits and vegetables, dried leaves and twigs, remains of meat like flesh and bones).

Ans: (i) The material which can be recycled should be put in the blue dustbin. These materials are: plastic materials, waste metals and glass. It means that the materials which can be recycled and reused should be put in the blue dust bin. These materials cannot rot but can be recycled.

(ii) The wastes of plants and animals, peels of fruits and vegetables, dried leaves and plant twigs, kitchen wastes and other wastes of plant and animal wastes, etc. should be dumped in the green bin or bag. This means that biodegradables are collected in the green dustbin which can be used to prepare compost.

39. Can you make something useful out of these waste material? Powder containers, cold-drink cans, plastic bottles, shoe-boxes.

Ans: (a) Powder container: Their use depends upon their size, shape and the material they are made of. For example

(i) elongated metallic powder container can be used as a pen-pencil stand, to grow money-plant etc.

(ii) plastic containers can be recycled.

(b) Drink cans: Storing liquids like oils, growing herbaceous plants like money- plants etc.

(c) Plastic bottles: Storing liquids such as oils and recycling plastic.

(d) Shoe-box: Making small red-cross boxes, storage pen-pencils and other small articles.