

CBSE
Class VIII Science

Time: 2 ½ hrs

Total Marks: 80

General Instructions:

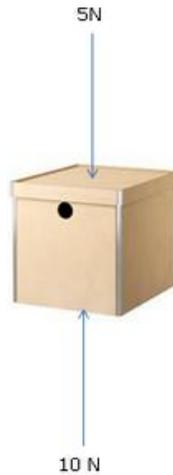
1. The question paper consists of 34 questions and is divided into four sections, A, B, C and D
 2. All questions are compulsory.
 3. Section A comprises question numbers 1 to 15. These are multiple choice questions carrying one mark each. You are to select one most appropriate response out of the four provided options.
 4. Section B comprises question numbers 16 to 22. These are SAQs carrying two marks each.
 5. Section C comprises question numbers 23 to 31. These are SAQs carrying four marks each.
 6. Section D comprises question numbers 32 to 34. These are SAQs carrying five marks each.
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SECTION A

- Q. 1** Identify the correct sequence of events carried out in preparation of soil. (1)
- A. Ploughing → Levelling of soil → Watering of dry soil → Breaking the crumbs
 - B. Watering of dry soil → Breaking the crumbs → Ploughing → Levelling of soil
 - C. Breaking the crumbs → Ploughing → Levelling of soil → Watering of dry soil
 - D. Watering of dry soil → Ploughing → Breaking the crumbs → Levelling of soil
- Q. 2** Which of the following is false about antibiotics? (1)
- A. Antibiotics should be taken only on the advice of a qualified doctor.
 - B. Taking antibiotics when not needed or in wrong doses may make the drug less effective when you may need it in the future.
 - C. Antibiotics taken unnecessarily may kill the beneficial bacteria in the body.
 - D. Antibiotics are highly effective for curing diseases caused by viruses.
- Q. 3** Citrus canker and measles are both (1)
- A. Water-borne diseases
 - B. Insect-borne diseases
 - C. Air-borne diseases
 - D. Seed-borne diseases

- Q. 4** What is false about deforestation? (1)
- A. It reduces biodiversity of the area.
 - B. It ensures better survival of animals of the area.
 - C. It uproots several organisms from their habitat.
 - D. It is carried out by humans to use the land for other purposes.
- Q. 5** Which of the following is an endangered species of animals? (1)
- A. Dinosaur
 - B. Asiatic lion
 - C. Irish deer
 - D. Hyena
- Q. 6** Rayon is chemically made by the treatment of (1)
- A. Protein
 - B. Cellulose
 - C. Fats
 - D. Amylase
- Q. 7** A comb is an example of (1)
- A. Thermosetting plastic
 - B. Thermoplastic
 - C. Natural polymer
 - D. All of the above
- Q. 8** Which of the following metals can be easily cut with a knife? (1)
- A. Aluminium
 - B. Sodium
 - C. Copper
 - D. Iron
- Q. 9** A purple colour liquid of a non-metal is applied on wounds as an antiseptic. The non-metal is (1)
- A. Chlorine
 - B. Bromine
 - C. Iodine
 - D. Carbon
- Q. 10** $2\text{Mg} + \text{O}_2 \rightarrow 2\text{MgO}$. Which type of oxide is magnesium oxide? (1)
- A. Basic
 - B. Acidic
 - C. Neutral
 - D. Mixture of all

Q. 11 A box is subjected to two forces as shown in the figure below. In which direction will the box move? (1)



- A. Downwards
- B. Upwards
- C. Towards the left
- D. Towards the right

Q. 12 The example of contact force is (1)

- A. Pulling a rope
- B. Magnets attracted to each other
- C. Electrostatic attraction
- D. Gravitational pull of the Earth

Q. 13 Gym and tennis shoes have soles made of rubber rather than leather because (1)

- A. A rubber sole is lighter than a leather sole.
- B. A rubber sole can be easily washed and cleaned.
- C. Rubber gives better appearance.
- D. Rubber provides more friction than leather.

Q. 14 Sound quality is also termed (1)

- A. Pitch
- B. Frequency
- C. Oscillation
- D. Timbre

Q. 15 Sounds having frequencies lower than 20 Hz are called (1)

- A. Ultrasonic sound
- B. Infrasonic sound
- C. Audible sound
- D. Periodic vibrations

SECTION B

- Q. 16** Differentiate between kharif and rabi crops. (2)
- Q. 17** How are the modern methods of irrigation more efficient than traditional methods? (2)
- Q. 18** Mention the important uses of microorganisms in agriculture and medicine. (2)
- Q. 19** Plastics are replacing metals in the car industry. Give two possible reasons to support your answer. (2)
- Q. 20** You are given some substances. Just by looking, can you classify those as metals and non-metals? Which physical property will you be using to classify? (2)
- Q. 21** Identify the action as 'push' or 'pull' in each of the instances given below. (2)
- (i) A cricket ball hit by a batsman
 - (ii) Planting a pin on the pin board
 - (iii) Plucking the nail off the wall
 - (iv) Picking up a shopping bag
- Q. 22** Explain why sliding friction is less than static friction. (2)

SECTION C

- Q. 23** (4)
- (i) State any three significant points of a biosphere reserve.
 - (ii) How does carbon dioxide cause global warming?
- Q. 24** (4)
- (i) A farmer has carried out the harvest of his crop. He now wants to store these grains for a month before selling them to an appropriate buyer. What steps should he take to store the harvest?
 - (ii) How does lowering of temperature help in increasing the shelf-life of food?
- Q. 25**
- (i) Explain any three methods of food preservation.
 - (ii) Name any two common preservatives. (4)
- Q. 26** What is meant by biodegradable and non-biodegradable materials? Give examples of two biodegradable and two non-biodegradable materials. (4)

Q. 27

- (i) What is coal?
- (ii) 'Coal is a source of energy'. Explain.
- (iii) What is the real source of energy of coal? (4)

Q. 28 (4)

- (i) Define balanced and unbalanced forces.
- (ii) Which materials are considered brittle? Give two examples of brittle and non-brittle substances.

Q. 29 (4)

- (i) With the help of diagrams, explain how the use of oil reduces friction between two surfaces in contact with each other.
- (ii) Name two common lubricants.

Q. 30 (4)

- (i) Define:
 - (a) Amplitude
 - (b) Time period
 - (c) Frequency
- (ii) State whether the following statement is true or false.
Sound can travel through liquids and gases but not through solids.

Q.31 What does LPG stand for? What are the advantages or characteristics which make LPG a good fuel? (4)

SECTION D

Q. 32 State at least five beneficial effects of microorganisms. (5)

Q. 33 (5)

The synthetic fibre A is chemically a polyamide, whereas the synthetic fibre B contains a large number of ester groups. Another synthetic fibre C is made of a polymer which consists of several glucose units joined one after the other.

- (a) Which fibre could be (i) terylene (ii) rayon and (iii) nylon?
- (b) Which fibre (A, B or C) is prepared from a natural raw material?
- (c) Which fibre (A, B or C) contains the same types of groups as those in a PET jar?

Q. 34

- (i) What happens when we rub a plastic object such as a pen or a comb with hair? Which type of force is operating in this case?
- (ii) Why are skis used to glide over snow? (5)

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Solution

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SECTION A

1. **Ans.** Correct Option: [D]

Solution: Dry soil requires watering before ploughing. After ploughing, the crumbs in the field have to be broken with a plank. Then the field is levelled for sowing as well as for irrigation purposes with the help of a leveller.

2. **Ans.** Correct Option: [D]

Solution: Viruses infect cells and take up the metabolic function of the host cell. Hence, it is difficult to kill only viruses without damaging the host cell. Hence, antibiotics are not effective against viruses and cannot cure diseases caused by a virus.

3. **Ans.** Correct Option: [C]

Solution: Citrus canker is an air-borne disease in plants, whereas measles is an air-borne disease in humans.

4. **Ans.** Correct Option: [B]

Solution: Forests are natural habitats of animals. Due to deforestation, their natural habitat gets destroyed and such animals may fall prey to other animals and be killed.

5. **Ans.** Correct Option: [B]

Solution: Asiatic lion. This species has a wide distribution across southwest Asia. However, its population is now restricted only to India's Gir forest.

6. **Ans.** Correct Option: [B]

Solution: Rayon is made of wood pulp. The wood obtained from plants is made of cellulose.

7. **Ans.** Correct Option: [B]

Solution: Thermoplastics get deformed easily on heating and can be bent easily.

8. **Ans.** Correct Option: [B]

Solution: Sodium is a metal which is soft and can be easily cut with a knife.

- 9. Ans.** Correct Option: [C]
Solution: Iodine is a non-metal which is used as an antiseptic for skin treatment.
- 10. Ans.** Correct Option: [A]
Solution: Metals combine with oxygen to form basic oxides.
- 11. Ans.** Correct Option: [B]
Solution: The net force is $10\text{ n} - 5\text{ n} = 5\text{ n}$ (upwards).
- 12. Ans.** Correct Option: [A]
Solution: Pulling a rope requires muscular force which is a contact force. Forces involved in all other cases may work from a distance.
- 13. Ans.** Correct Option: [D]
Solution: Gym and tennis shoes have rubber soles rather than leather because rubber provides more friction than leather.
- 14. Ans.** Correct Option: [D]
Solution: Timbre or quality of sound is a characteristic by virtue of which we can distinguish between two sounds of the same pitch and loudness.
- 15. Ans.** Correct Option: [B]
Solution: Sounds with frequencies lower than 20 Hz are below audible level and hence are called infrasonic sound.

SECTION B

16. Ans.

Kharif Crops	Rabi Crops
i. Crops grown in the monsoon and harvested in autumn are called kharif crops.	i. Crops grown in the winter season are called rabi crops.
ii. Their time period is the rainy season in India which is generally from June to September.	ii. Their time period is generally from October to March.
iii. Examples: Rice, maize, tobacco, potato, onion, soyabean, millets	iii. Examples: Wheat, mustard, pea, barley, gram

17.Ans. Modern methods of irrigation help us to use water economically, i.e. it prevents wastage of water. These methods also help to save time and labour. Hence, they are more efficient than traditional methods of irrigation.

18.Ans. Uses of microorganisms in agriculture: Microorganisms help in manure formation and in increasing soil fertility.

Uses of microorganisms in medicine: Microorganisms are used to prepare antibiotics and vaccines.

19.Ans. Plastics are replacing metals in the car industry because

- (i) They are cheaper than metals.
- (ii) They can be easily moulded in various shapes.

20.Ans. Yes. We can classify substances as metals and non-metals based on lustre.

Metals have a shiny lustre, while non-metals generally do not have a shiny lustre.

21.Ans.

- (i) Cricket ball hit by a batsman: Push
- (ii) Planting a pin on the pin board: Push
- (iii) Plucking the nail off the wall: Pull
- (iv) Picking up a shopping bag: Pull

22.Ans. Friction is because of irregularities of two surfaces in contact. In sliding friction, the time given for the interlocking of the irregularities of the two surfaces is small, and that is why sliding friction is less than static friction.

SECTION C

23.Ans.

(i) Significance of a biosphere reserve is as follows:

1. To provide opportunities to conduct studies on different plants and animals.
2. To protect the tribal people living in the area.
3. To maintain the ecological balance of the area.

(ii) Carbon dioxide is known as a greenhouse gas. Plants absorb atmospheric carbon dioxide to carry out the process of photosynthesis. Deforestation, human activities and pollution have led to the increase in the concentration of carbon dioxide. CO₂ traps the heat rays reflected by the Earth which leads to an increase in the average temperature of the Earth and causes global warming.

24.Ans.

(i) A farmer needs to carry out the following steps in order to ensure the safe storage of the harvest:

1. The fresh crop should be properly dried in the Sun to reduce the moisture in them so as to prevent the attack by moulds and fungi.
2. The grains should be stored in jute bags or metallic bins to protect them from pests.
3. Specific chemical treatments must be carried out for storing large quantities of grains in big godowns to protect them from pests and microorganisms.

(ii) Lowering of temperature slows down the growth of bacteria, yeast and moulds, and inhibits the action of enzymes present in the food material and helps to increase the shelf-life of food.

25.Ans.

(i) Three methods of food preservation are as follows:

1. Preservation by common salt: Meat and fish are preserved by covering with dry salt. Salting prevents the growth of bacteria. Salting is also used in the preservation of amla, pickles, tamarind etc.
2. Preservation by oil and vinegar: Vinegar too prevents the growth of bacteria. Hence, it is used in pickles, vegetables, fruits and fish.
3. Heat and cold treatments: Some bacteria cannot thrive at high temperature and at low temperatures. Hence, certain food items (e.g. milk) are boiled, and food is stored in the refrigerator.

(ii) Sodium benzoate and sodium metabisulphite are two common preservatives.

26.Ans. A material which gets decomposed through natural processes (such as the action of bacteria) is called a biodegradable material.

Examples: Peels of vegetables and fruits, wood

A material which is not easily decomposed by natural processes (such as the action of bacteria) is called non-biodegradable material.

Examples: Plastics, glass

27.Ans.

(i) Coal is a hard, black combustible mineral which consists mainly of carbon.

(ii) Coal is a source of energy:

Coal is mainly carbon. When heated in air, coal burns and produces mainly carbon dioxide gas. A lot of heat energy is also produced during the burning of coal. This can be written as



Coal is important because it can be used as a source of heat energy (just by burning it), or it can be converted into other forms of energy such as coal gas, coke or electricity.

(iii) The real source of energy of coal is solar energy (or the Sun's energy). This is because the plants and trees which decomposed to form coal grew on the Earth by absorbing sunlight energy during the process of photosynthesis.

28.Ans.

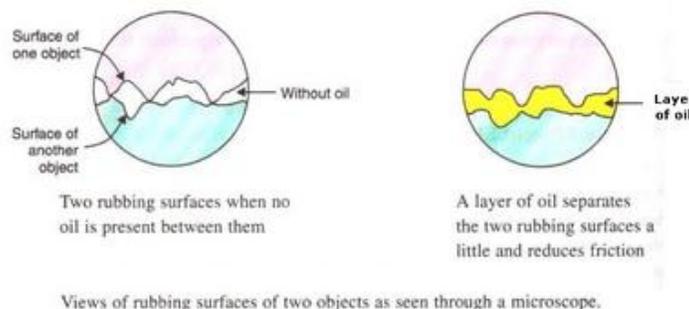
(i) **Balanced Forces:** When the resultant of all the forces acting on a body is zero, the forces are said to be balanced forces.

Unbalanced Forces: When the resultant of all the forces acting on a body is not zero, the forces are unbalanced forces.

(ii) The materials which break easily when force is applied on them are considered brittle. Examples of brittle materials are ceramic and glass. Objects made of plastic and wood are non-brittle in nature.

29.Ans.

(i) When oil is applied between the two surfaces in contact, a thin layer of oil is formed between the two surfaces. This layer separates the two surfaces a little bit due to which their interlocking is reduced to a large extent when they rub against each other.



(ii) Grease and oil are two commonly used lubricants.

30.Ans.

(i)

(a) Amplitude: The maximum displacement from the mean position during an oscillation is called the amplitude of the oscillation.

(b) Time period: The time taken to complete one oscillation is called the time period of the oscillation.

(c) Frequency: The number of oscillations per second is called the frequency of oscillation.

(ii) False. Sound can travel through solids, liquids and gases.

31.Ans.

LPG stands for liquefied petroleum gas. LPG is a good fuel because of its following advantages:

(i) LPG burns easily.

(ii) LPG has a high calorific value. Due to this, a given amount of LPG produces a lot of heat.

(iii) LPG burns with a smokeless flame and hence does not cause air pollution.

(iv) LPG does not produce any poisonous gases on burning.

(v) LPG does not leave behind any solid residue on burning.

SECTION D

32.Ans.

Some of the beneficial effects of microorganisms are as follows:

(i) In the making of curd, bread and cake.

(ii) In the production of alcohol, wine, vinegar etc.

(iii) In the preparation of medicines or drugs such as antibiotics.

(iv) Microorganisms such as Rhizobium are used in agriculture to increase the fertility of soil by fixing atmospheric nitrogen.

(v) Microorganisms clean up the environment by decomposing the organic matter of dead plants, dead animals and animal wastes into harmless and useful simple substances.

33.Ans.

a. (i) Terylene: B (ii) Rayon: C (iii) Nylon: A

b. C (Rayon)

c. B (Terylene)

34.Ans.

- (i) When we rub a plastic object such as a pen or a comb with hair, it gets electrically charged. When such an object is brought close to bits of paper, the bits of paper get attracted to the object.
This is due to electrostatic force.
- (ii) Skis are constructed such that they have a large surface area which helps to reduce the pressure on snow. This ensures that the skis do not sink in too far in the snow.