CBSE Board
Class VII Science
Sample Paper – 2
Term II

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.

SECTION A

1. By which instrument is blood pressure measured? [1]

(a) Barometer
(b) Hygrometer
(c) Manometer
(d) Sphygmomanometer

2. Vegetative reproduction does not take place by [1]

(a) Cutting
(b) Seed formation
(c) Grafting
(d) Tissue culture

3. What term is used for cutting down more and more trees from the forest? [1]

(a) Afforestation
(b) Deforestation
(c) Conservation
(d) Harvesting

4. Which process in plants supplies oxygen continuously? [1]
(a) Photosynthesis
(b) Respiration
(c) Transportation
(d) Excretion

5. In galvanization, iron metal is coated with which metal to prevent rusting? [1]
(a) Copper
(b) Zinc
(c) Gold
(d) Nickel

6. Neutralisation of calcium hydroxide with hydrochloric acid is an example of [1]
(a) Chemical change
(b) Physical change
(c) Both chemical and physical change
(d) No change

7. Magnesium burns in oxygen to form [1]
(a) Magnesium oxide
(b) Magnesium hydride
(c) Magnesium hydroxide
(d) Magnesium carbonate

8. Which of the following pictures show physical changes? [1]

I

Boiling of Water

II

Melting of Ice

III

Rusting of Iron

IV

Lightning of Electric bulb

(a) Pictures I, II, and IV
(b) Picture III only
(c) Pictures I and IV
(d) Pictures II and III

9. Which of the following is not a property of acids? (1)
(a) Acids are sour in taste.
(b) Acids find use in preparing fertilisers.
(c) Acids can be corrosive or non-corrosive.
(d) Acids are used in the soap and detergent industry.

10. The filament of an electric bulb is made of a thin wire of [1]

(a) copper
(b) aluminium
(c) nichrome
(d) tungsten

11. An electric bulb is used for light but it also gives heat. This is not desirable. This results in wastage of electricity. This wastage can be reduced by using [1]

(a) Heaters
(b) Coolers
(c) Light emitting diodes (LEDs)
(d) Compact fluorescent lamps

12. A current carrying coil of an insulated wire wrapped around a piece of iron is called _____. [1]

(a) Permanent magnet
(b) Temporary magnet
(c) Bar magnet
(d) Electromagnet

13. A _____ object is one that does not produce its own light, although it can still reflect light from other sources. [1]

(a) luminous
(b) non-luminous
(c) transparent
(d) opaque

14. The size of the image formed by a plane mirror is [1]

(a) Smaller than the object
(b) Same as that of the object
(c) Larger than the object
(d) None of the above

15. The pupil of your eye is a net (1)

(a) Absorber of radiant energy
(b) Emitter of radiant energy
(c) Both of these
(d) Neither of these

SECTION- B

16. What are septic tanks? Give two examples of places where they are used. [2]

17. Give two examples each of: [2]

(a) fruits which are fleshy and juicy.

(b) seeds dispersed when fruits burst with sudden jerks.

18. How is tooth decay prevented? [2]

19. Most physical changes are reversible. Give two examples to support this statement. [2]

20. How is rusting of iron prevented using chromium? [2]

21. 'Light has a dual nature'. Comment. [2]

22. What is a spherical mirror? How can you identify that the mirror is concave? [2]

SECTION C

23. [4]

(a) Give reason:

i. Though pulmonary artery carries carbon-dioxide rich blood, it is still called an artery and not a vein.

ii. Arteries have thick, elastic walls.

iii. Blood of all humans is red in colour.

(b) Which blood cells form the clot?

24. [4]

(a) What is the reeling of silk? How is the reeling carried out?

(b) What are the varieties of silk? Which silk is most commonly used? Why?

25. Draw the human excretory system and label any two of the following parts: kidney, urethra, ureter, urinary bladder. [4]

26. [4]

(a) What is an indicator?

(b) Three liquids are given to you. One is sulphuric acid, another is sodium hydroxide and the third is a salt solution. How will you identify them? You have only turmeric paper indicator.

27. [4]

(a) The brown layer is formed when an iron article is left exposed in an open area. Name the process and explain it. What is its effect on the object? Write the chemical equation to show the process of rusting of iron.

(b) Why is rusting of iron considered a chemical change?

28. A pinch of baking soda is added to vinegar in a test tube. A hissing sound is heard and bubbles of gas are observed. This gas is passed through freshly prepared lime water. [4]

i. What is lime water?
ii. What happens to the lime water when gas is passed through it?
iii. Identify the gas evolved.
iv. Write all the reactions involved.

29. Why should air coolers be kept higher up in the room, and not down like the heaters? [4]

30. [4]

(a) What are the causes of short circuiting and overloading?

(b) Give two advantages of electromagnets over permanent magnets.

31. Draw a diagram to show the splitting of white light into seven colours on passing through a prism. [4]

SECTION D

32. [5]

(a) How are seeds dispersed by animals? Give two examples of such seeds?

(b) Diagrammatically represent fertilisation in plants.

33. [5]

(a) List out any four characteristics of chemical changes.

(b) Chemical changes are essential for our lives. Explain this statement with the help of an example.

34. [5]

(a) Identify the given symbols.

i.  ii. 

(b) How a fuse wire prevents damages to electrical circuits and possible fires?

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SECTION A

1. (d)

Sphygmomanometer is used to measure the blood pressure.

2. (b)

Seed formation takes place during sexual reproduction in plants. Cutting, grafting and tissue culture are methods of propagating plants asexually.

3. (b)

Deforestation is the process of cutting more and more tress from the forests to accommodate growing population and to provide space for industries.

4. (a)

Oxygen is a renewable resource because it is continuously supplied by plants during photosynthesis.

5. (b)

In the method of galvanization, surface of iron is coated with a layer of more active metal like zinc.

Zinc metal prevents the surface of iron from coming in the contact with air and moisture and thus, protects it from rusting.

6. (a)

In a chemical change, new products are formed. The new substances formed have properties entirely different from the original substances.

$Ca(OH)_2 + 2\,HCl \rightarrow CaCl_2 + 2\,H_2O$

7. (a)

Burning of a magnesium ribbon is a chemical change. When magnesium ribbon is held over the flame of a burner, it burns with a dazzling white light to give a new substance called magnesium oxide.

$2Mg + O_2 \rightarrow 2MgO$

Magnesium Oxygen Magnesium oxide

8. (d)

Boiling of water, melting of ice and lightning of bulb is a physical change. No chemical reaction takes place and no new products are formed. However, rusting of iron is a chemical change. Iron article chemically reacts with air and moisture to form a flaky reddish brown layer of hydrated iron (III) oxide, known as rust.

9. (d)

Sodium hydroxide base is used in the soap and detergent industry.

10. (d)

The filament of an electric bulb is made of a thin wire of tungsten.

11. (d)

Compact fluorescent lamps (CFLs) reduce wastage of electricity and can be fixed in ordinary bulb holders.

12. (d)

A current carrying coil of an insulated wire wrapped around a piece of iron is called an electromagnet.

13. (b)

A non-luminous object does not produce its own light, but reflects light from other sources.

14. (b)

An image formed by a plane mirror is erect and of the same size as the object.

15. (a)

Absorber of radiant energy

SECTION B

16. Septic tanks are low cost onsite sewage disposal systems suitable for places where there is no sewerage system. It can be used for hospitals, isolated buildings or a cluster of 4 to 5 houses.

17.

(a) Mango, apple and orange. (Any two)

(b) Castor and balsam

18. **Tooth decay can be prevented with the help of the following measures**:

1. After every meal, one should rinse the mouth thoroughly with water.
2. One should brush the teeth twice a day.
3. Sugary food must be eaten in minimal quantities.
4. Dental floss must be used to keep the space between the teeth clean.

19.

i. Melting of ice: During this change, the water changes from its solid state to liquid state and it can be solidified again. Hence, this is a reversible change.

ii. Lightening of an electric bulb: During this change, electricity is passed through the filament which becomes white hot and glows, but when the switch is off, the filament returns to its original shape and condition; hence, it is reversible.

20. Iron is coated with chromium to prevent rusting. It is called chrome-plating. Chromium metal is resistant to the action of air and moisture. So, when a layer of chromium is deposited on an iron object, the iron object is protected from rusting.

21. Light has a dual nature as it exhibits the properties of both, waves and particles depending on the situation.

22. A spherical mirror is that mirror whose reflecting surface is a part of a hollow sphere of glass. In a concave mirror, the reflecting surface is the bent-in surface.

SECTION C

23.

(a)

i. This is because the pulmonary artery carries blood away from the heart and not towards it like a vein does.

ii. Since the blood flows through arteries rapidly at a high pressure, the arteries have thick elastic walls.

iii. The red blood cells contain a red pigment called haemoglobin. The presence of haemoglobin makes blood appear red.

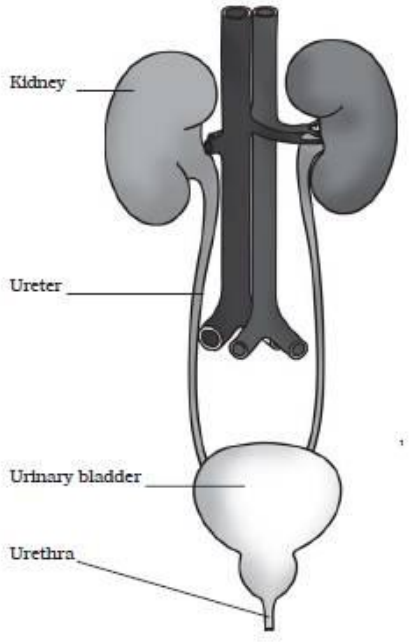
(b) Platelets form a network of cells on the cut or wound and thus, form a blood clot.

24.

(a) The process of taking out silk fibres from the cocoon is called reeling. Cocoons are collected first. These cocoons are then treated in hot water. Hot water makes the silk fibres of the cocoons separate. The threads are then unwound to obtain the long silk fibre.

(b) The varieties of silk are tassar silk, mulberry silk, muga silk, kosa silk and eri silk. Mulberry silk is most commonly used. Mulberry silk is soft, lustrous and elastic and can be dyed with attractive colours.

25.



(Label any two parts)

26.

(a) An indicator is a dye that changes color when it is put into an acid or a base.

(b) Put one drop of each liquid on turmeric paper, turn by turn.

(i) The liquid which turns the yellow turmeric paper red will be sodium hydroxide (base). The red turmeric paper formed here can now be used to test sulphuric acid.

(ii) Put one drop each of the remaining two liquids on red turmeric paper. The liquid which makes the red turmeric paper yellow again will be sulphuric acid (This is because sulphuric acid cancels the effect of sodium hydroxide base on turmeric paper).

(iii) The liquid which has no effect on the red turned turmeric paper will be salt solution (because it is neutral).

27.

(a) When an iron object is exposed to air and moisture, a flaky reddish brown layer of hydrated iron (III) oxide is formed on its surface. This substance is called as rust and the process of its formation is called rusting.

This is the only change that effects iron articles and slowly destroys them. Since iron is used in making bridges, ships, cars, truck and many other objects. Rusting weakens the structures of iron objects and cuts short their life. Following is the chemical equation to show the process of rusting of iron:

$$Fe + O_2 + H_2O \rightarrow Fe_2O_3$$

Iron Oxygen (From the Air) Water Rust (Iron oxide)

(b) Rusting of iron is considered a chemical change because a new substance called iron oxide is formed in this process.

28.

i. Lime water is calcium hydroxide solution.

ii. When the gas evolved is passed through lime water, it turns milky.

iii. The turning of lime water milky shows the presence of carbon dioxide because when Carbon dioxide (CO_2) is passed through lime water, white solid substance called calcium carbonate is formed which makes lime water milky.

iv.

$$CH_3COOH + NaHCO_3 \rightarrow CO_2 + CH_3COONa + H_2O$$

Acetic acid (Vinegar); Sodium hydrogen carbonate (Baking soda); Carbon dioxide; Sodium acetate; Water

$$CO_2 + [Ca(OH)_2] \rightarrow CaCO_3 + H_2O$$

Carbon dioxide; Lime water; Calcium Carbonate; Water

29. Cool air is denser so it moves down whereas warm air is lighter so rises up hence convection currents are formed that helps in circulating the cold air and keeps the room cool.

If the air cooler is not kept higher up, then the cool air will remain at the surface layer and warm air will remain at the top, hence no circulation of air will take place and room will remain warm.

30.

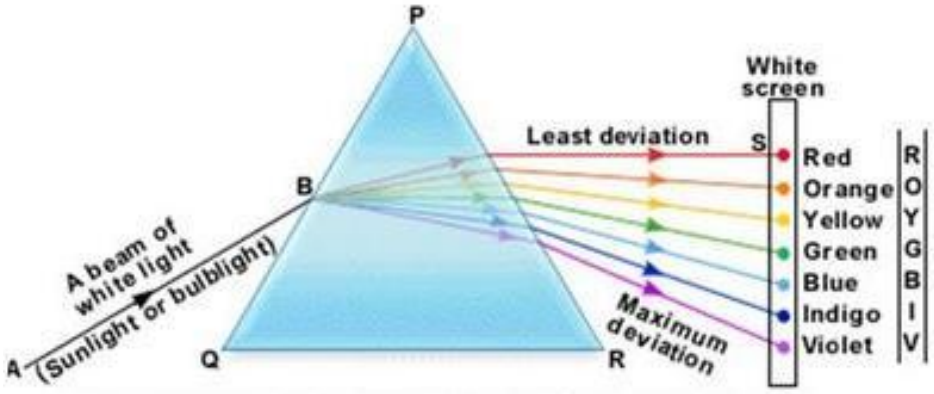
(a) The short circuiting may occur due to the touching of live wire and neutral wire directly. Overloading may be due to the flow of excessive current when many devices are connected to a single socket.

(b) Advantages of electromagnets over permanent magnets are:

i. The magnetism of an electromagnet can be switched on or switched off as desired. This is not possible with a permanent magnet.

ii. An electromagnet can be made very strong by increasing the number of turns in the coil, and by increasing the current passing through the coil. On the other hand, a permanent magnet cannot be made so strong.

31.

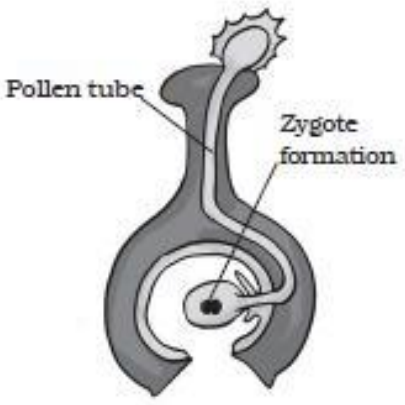


SECTION D

32.

(a) Some seeds are dispersed by animals, especially spiny seeds with hooks. They get attached to the bodies of animals and are carried to distant places. Examples are Xanthium and Urena.

(b)



Fertilisation (Zygote formation) in plants

33.

(a) Characteristics of chemical changes:

i. These involve change in physical properties as well as the chemical composition of the substances.

ii. These changes may be accompanied by the evolution of heat and light. Sound also may be produced in some cases.

iii. These changes are permanent and cannot be reversed i.e. irreversible.

iv. These changes may also involve evolution of a gas or formation of a precipitate along with the change in colour, smell and physical state.

(b) Chemical changes are very important in our lives. All new substances are formed as a result of chemical changes.

For example,

- If a metal is to be extracted from an ore, such as iron from iron ore, we need to carry out a series of chemical changes.
- A medicine is the end product of a chain of chemical reactions. Useful new materials, such as plastics and detergents, are produced by chemical reactions.
- Energy is obtained by burning fuels like coal, petrol, wood and kerosene etc.
- Burning of fuels is a chemical change accompanied by evolution of heat and new products

34.

(a)

i. Bulb

ii. Switch in 'ON' position

(b) There is a maximum limit for the current to flow through the circuit. If accidentally, the current exceeds the safe limit, the wire may become overheated and may cause fire. In this case, the fuse wire blows off and breaks the circuit thus prevents the damages to electrical circuit.