BRAIN INTERNATIONAL SCHOOL

SESSION 2024-25

CLASS: VII **ANNUAL REVISION SHEET** **SUBJECT: SCIENCE**

Chapter 5: Physical and chemical changes

1. Multiple choice questions

1. Properties like size, shape, colour, state of a substance are

(a) chemical properties (b) mental properties (c) physical properties (d) physio-chemical properties

2. Two drops of dilute sulphuric acid were added to 1 g of copper sulphate powder and then small amount of hot water was added to dissolve it (step I). On cooling, beautiful blue-colored crystals got separated (step II). Step I and step II are

(a) physical and chemical changes respectively. (b) chemical and physical changes respectively.
(c) both physical change (d) both chemical change

2 Assertion / Reason questions

Select the correct answer to these questions from the codes (i), (ii), (iii) and (iv) as given below

(i) Both A and R are true and R is correct explanation of the assertion.

(ii) Both A and R are true but R is not the correct explanation of the assertion.

(iii) A is true but R is false.

(iv) A is false but R is true.

a) **Assertion**: Formation of rust is a chemical change.
Reason: For formation of rust, iron must be exposed to air and water.

b) **Assertion**: Evolution of gas is confirmed sign of physical change.
Reason: Hydrogen gas is evolved on reaction of acids on metals.

3. Answer the following question

1. Magnesium ribbon bums in air and changes to white substance, i.e. magnesium oxide. When magnesium oxide dissolves in water, what type of change take place? Give reason in support of your answer. Express the change in the form of equation
2. Which type of change takes place in the following and state whether the energy is evolved or absorbed during the change?
   Burning of a candle, lightning of a bulb, preparation of food by green plants, volcanic eruption, evaporation of petrol, burning of LPG.
3. Explosion of a cracker is a chemical change Explain.
4. A student took a solution of copper sulphate in a beaker and put a clean iron nail into it and left it for about an hour.
   (a) What changes do you expect?
   (b) Are these changes chemical in nature?
   (c) Write a word equation for the chemical change, if any.

Chapter6: Respiration in organisms

1 Multiple choice questions

1. Sometimes when we do heavy exercise, anaerobic respiration takes place in our muscle cells. What is produced during this process?
   (a) alcohol and lactic acid (b) alcohol and CO_2 (c) lactic acid and CO_2 (d) lactic acid only

2. Breathing is a process that
   (i) provides O_2 to the body.
   (ii) breaks down food to release energy.
   (iii) helps the body to get rid of CO_2
   (iv) produces water in the cells.
   Which of the following gives the correct combination of functions of breathing?
   (a) (i) and (ii) (b) (ii) and (iii) (c) (i) and (iii) (d) (ii) and (iv)

2 Assertion / Reason questions

Select the correct answer to these questions from the codes (i), (ii), (iii) and (iv) as given below

(i) Both A and R are true and R is correct explanation of the assertion.

(ii) Both A and R are true but R is not the correct explanation of the assertion.

(iii) A is true but R is false.

(iv) A is false but R is true.

a) **Assertion**: Respiration is the process of taking in oxygen and releasing carbon dioxide.
Reason: Respiration only occurs in animals and not in plants.

b) **Assertion:** Aerobic respiration is more efficient than anaerobic respiration**.**
Reason: Aerobic respiration utilizes oxygen, which allows for the complete breakdown of glucose, resulting in the production of a larger amount of ATP (energy) compared to anaerobic respiration.

3 Case study/passage-based questions

During a 100-meter sprint, an athlete's breathing rate increases significantly. As the race continues, the athlete experiences rapid breathing and faster heart rate. After crossing the finish line, the athlete continues to breathe heavily for a few minutes.

(i) Why does the athlete breathe faster during the race?
(ii) What type of respiration (aerobic or anaerobic) is likely happening in the athlete's muscles during the sprint, and why?
(iii) What is the role of oxygen in the athlete's breathing rate after the race?
(iv) Explain the difference between aerobic and anaerobic respiration.
(v) What happens to the body's muscles if anaerobic respiration occurs for too long?

4 Answer the following question

1 Insects and leaves of a plant have pores through which they exchange gases with the atmosphere. Can you write two points of differences between these pores with respect to their position, number and extension into the body?
2. Explain the respiration in Earthworm and cockroaches.
3. What are the stages in respiration?
4. Differentiate between respiration and breathing

Chapter7: Transportation in animals and plants

1 Multiple choice questions

1. Name an instrumental device used to amplify the sound of heart.
(a) Stethoscope (b) UV machine (c) Both (a) and (b) (d) Ultrasound machine

2. The absorption of nutrients and exchange of respiratory gases between blood and tissues take place in
(a) veins (b) arteries (c) heart (d) capillaries

2 Assertion / Reason question

Select the correct answer to these questions from the codes (i), (ii), (iii) and (iv) as given below

(i) Both A and R are true and R is correct explanation of the assertion.

(ii) Both A and R are true but R is not the correct explanation of the assertion.

(iii) A is true but R is false.

(iv) A is false but R is true.

a) Assertion: The process of transpiration helps in the movement of water from the roots to the leaves.
Reason: Transpiration is the loss of water in the form of water vapors through the stomata.

b) Assertion: The main function of red blood cells is to transport oxygen to body tissues.
Reason: Red blood cells contain a protein called hemoglobin, which binds to oxygen and carries it throughout the body.

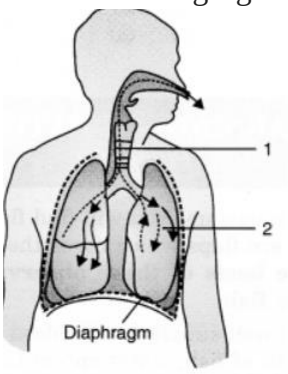
3 Case study / passage-based question

After a long run, a person feels tired and notices their heart beating faster. This increased heart rate is due to the body's need for more oxygen and nutrients to be delivered to the muscles.

i. Why does the person's heart rate increase after running?
ii. What is the role of the circulatory system in transporting oxygen and nutrients to the body during exercise?
iii. What are the main components of the human circulatory system involved in transportation?
iv. How do the arteries and veins differ in their functions?
v. Explain how the blood helps in removing waste products from the body after exercise.

4 Answer the following question

1 In the following figure of respiratory system organs labelled as 1 and 2 respectively



2. What is the role of xylem in the transportation process in plants?
3. Why is it important for blood to flow freely through the arteries to the heart and other organs?
4. What is the difference between arteries, veins, and capillaries in terms of their structure and function?

Chapter 8: Reproduction in plants

1 Multiple choice questions

1. The zygote develops into
   (a) a seed (b) an ovule
   (c) a fruit (d) an embryo
2. The 'eye' of the potato plant is what
   (a) the root is to any plant (b) the bud is to a flower
   (c) the bud is to Bryophyllum leaf (d) None of these

2 Assertion / Reason questions

Select the correct answer to these questions from the codes (i), (ii), (iii) and (iv) as given below

(i) Both A and R are true and R is correct explanation of the assertion.

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(iii) A is true but R is false.

(iv) A is false but R is true.

a) Assertion: Fertilization result in the formation of embryo
Reason: Zygote divides several times to form an embryo

b) Assertion: Amoeba reproduces by binary fission
Reason: All unicellular organisms reproduce asexually.

3 Case study/ passage-based question

Sahil planted a variety of flowers in his garden. Over time, he observed that some plants produced seeds while others reproduced through vegetative methods, such as budding, runners, and tubers. One of the plants, a potato, developed small shoots from its tuber, while a rose plant formed new plants from its cut stems.

i. How does the potato plant reproduce? Explain the method used.
ii. What type of reproduction is seen in the rose plant?
iii. What is vegetative reproduction? Provide two examples from the case.
iv. How do seeds help in the reproduction of plants?

4 Answer the following question

1. Explain the difference between self-pollination and cross-pollination.
2. How the male gamete in the pollen grain reaches the female gamete present in the ovule?
3. Explain spore formation and fragmentation with the help of diagram.
4. How can we grow a new rose plant from the parent plant?

Chapter10: Electric current and its effects

1 Multiple choice questions

1. The amount of heat produced in a wire depends on its
   (a) material (b) length
   (c) thickness (d) all of these

2. Which of the following is not a reason for excessive currents in electrical circuits?
   (a) Direct touching of wires (b) Short circuiting
   (c) Switch in 'off position (d) Overloading

2 Assertion / Reason questions

Select the correct answer to these questions from the codes (i), (ii), (iii) and (iv) as given below

(i) Both A and R are true and R is correct explanation of the assertion.

(ii) Both A and R are true but R is not the correct explanation of the assertion.

(iii) A is true but R is false.

(iv) A is false but R is true.

a) Assertion (A): It is fatal to touch a live wire with bare feet and uncovered hands.
Reason (R): The electric current passes through the body to the earth forming a circuit and burns the blood.

b) Assertion (A): Fuse is a safety device which prevents damages to electrical circuits and possible fires.
Reason (R): The fuse wire blows off and breaks the circuit and prevents fire and damage.

3 Case study/ passage-based question

Raj noticed that when he switched on the electric kettle, it started heating up and eventually boiled water. He wondered why the electric kettle gets hot when connected to an electric current, but other devices like a fan do not.

(i) Why does an electric kettle heat up when electric current passes through it?
(ii) What is the heating effect of electric current?
(iii) Can you think of other appliances where the heating effect of electric current is used?
(iv) Why does a fan not heat up like an electric kettle even though it uses electric current?

4 Answer the following question

1. Write the differences between open and close circuit?
2. Explain the following.
(a) Copper and aluminum wires are usually employed for electricity transmission. Explain the reason.
(b) Explain how does the resistance of a wire vary with its length.
(c) The tungsten is used almost exclusively for filament of electric lamp. Comment.
3. If we connect more cells in the circuit, then what will happen

Chapter 11: light

1 Multiple choice questions

1. The image formed by spherical mirror is virtual. The mirror will be
   (a) concave (b) Convex
   (c) either concave or convex (d) none of these

2. You are provided with a concave mirror, a convex mirror, a concave lens and a convex lens. To obtain an enlarged image of an object you can use either
   (a) concave mirror or convex mirror (b) concave mirror or convex lens
   (c) concave mirror or concave lens (d) concave lens or convex lens

2 Assertion / Reason questions

Select the correct answer to these questions from the codes (i), (ii), (iii) and (iv) as given below

(i) Both A and R are true and R is correct explanation of the assertion.

(ii) Both A and R are true but R is not the correct explanation of the assertion.

(iii) A is true but R is false.

(iv) A is false but R is true.

a) **Assertion:** light is a form of energy
Reason: Light allows us to see different things around us easily.

b) **Assertion:** through each and every material we cannot see the things clearly
Reason: some materials are transparent; some are translucent and opaque.

3. Case study/ Passage based question

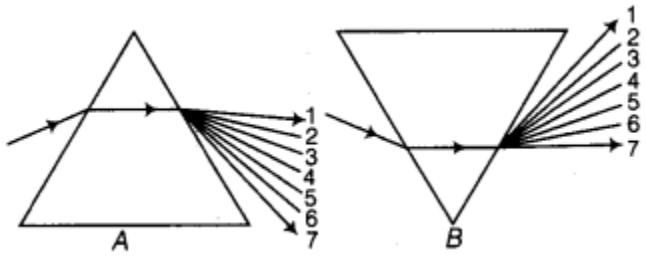
Nina was playing with her friend Rahul in the park one afternoon. While walking under a tree, they noticed that the sunlight coming through the gaps in the leaves formed small patches of light on the ground. Curious, Nina asked Rahul why the light coming through the tree appeared as small circles. Rahul, having studied about light in school, quickly explained that it had something to do with how light travels and how objects like leaves can block or allow it to pass through.

Nina and Rahul continued to observe that the light they saw was not the same in every part of the park. Some areas had brighter light, while others were dimmer, even though they were all outside in the same environment.

(i) Why do the patches of light formed under the tree appear as small circles?
(ii) What is the role of the tree's leaves in the formation of these light patches?
(iii) Explain why the intensity of light varied in different areas of the park. What could be the reasons behind the brightness differences?
(iv) According to the case study, what can we infer about how light travels?

4 Answer the following question

1. The side mirror of a scooter got broken. The mechanic replaced it with a plane mirror. Mention any inconvenience that the driver of the scooter will face while using it
2. Differentiate between a plane mirror, concave mirror and a convex mirror without touching them.
3. The concave reflecting surface of a torch got rusted. What effect would this have on the beam of light from the torch?
4. State the correct sequence (1-7) of colors in the spectrum formed by the prisms A and B shown in the figure.



Chapter 12: Forest our lifeline

1 Multiple choice questions

1. Which of the following is a forest plant?
(a) Sheesham (b) Neem
(c) Bamboo (d) all of these

2. Name the organism on which all animals depend for food.
(a) Humus (b) Plants
(c) Insects (d) crops

2 Assertion / Reason questions

Select the correct answer to these questions from the codes (i), (ii), (iii) and (iv) as given below

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(ii) Both A and R are true but R is not the correct explanation of the assertion.

(iii) A is true but R is false.

(iv) A is false but R is true.

a) Assertion: All animals depend ultimately on plants for food.
Reason: Organisms which feed on plants afterwards get eaten by other organisms and so on.

b) **Assertion:** In an ecosystem all food chains are linked.
Reason: There are many food chains in an ecosystem

3. Case study/ Passage based question

Forests cover about 31% of the Earth's land area and provide a wide range of vital ecosystem services. They help regulate the climate, purify air and water, prevent soil erosion, and offer a home to countless species of plants and animals. Forests also provide humans with food, medicine, and raw materials for construction and fuel. In recent years, however, deforestation has become a significant global issue. The World Wildlife Fund (WWF) reports that nearly 10 million hectares of forest are lost every year due to activities such as agriculture, logging, and urbanization. This loss not only threatens biodiversity but also has serious implications for human survival. One such region is the Amazon Rainforest, often referred to as the "lungs of the planet." The Amazon stores vast amounts of carbon, which helps mitigate climate change, and its rivers are crucial for the water cycle. Yet, rampant deforestation in this area is accelerating climate change, displacing indigenous communities, and threatening the livelihoods of millions of people.

1. Explain the different ways in which forests support human life. Provide specific examples.
2. What are the main causes of deforestation, and how do they impact the global ecosystem
3. How can individuals, governments, and organizations work together to protect forests? Provide specific actions that can be taken at different levels.
4. In your opinion, what is the most pressing issue related to forests today, and what steps should be taken to address it

4 Answer the following question

1. What is the role of decomposers in a forest ecosystem?
2. Which process in forests contributes to cloud formation and rainfall?
3. What is a key role of scavengers in forest ecosystems?
4. What is the significance of afforestation?

Chapter 13: Wastewater story

1. Multiple choice questions

1. Suspended impurities contained by sewage are called
(a) Contaminants (b) sludge
(c) grey water (d) none of these

2. Which portion of WWTP retains large objects like rags, sticks, etc.?
(a) Bar screen (b) Sludge
(c) Sedimentation work (d) Sewerage

2. Assertion / Reason questions

Select the correct answer to these questions from the codes (i), (ii), (iii) and (iv) as given below
(i) Both A and R are true and R is correct explanation of the assertion.

(ii) Both A and R are true but R is not the correct explanation of the assertion.

(iii) A is true but R is false.

(iv) A is false but R is true.

a) Assertion: The underground network of big and small pipes that carries sewage from point of being produced to the point of disposal is known as sewerage.
Reason: In sewerage manholes are located at every 30 m to 40 m.

b) Assertion: We should not excrete in the open.
Reason: Poor sanitation and contaminated water cause a number of diseases.

3. Case study/ Passage based question

Ravi and his family live in a large apartment building in the city. The building has a common drainage system that collects the wastewater from kitchens, bathrooms, and laundry areas of all the apartments. One day, Ravi notices that there is a strange smell coming from the drain near his house. The water in the drain looks dirty and is moving slowly. Concerned, he talks to the building caretaker, who informs him that the drainage system is overloaded because too much wastewater is being released into it without proper treatment. Ravi wonders if this is something common and how it affects the environment. He remembers learning about wastewater treatment at school but isn't sure how the wastewater from his building is being treated before being released into the nearby river.

1. What are the different types of wastewaters generated in Ravi's building?
2. What could be the possible reasons for the wastewater draining slowly and giving off a foul smell?
3. How can untreated wastewater affect the environment, especially rivers and nearby water bodies?
4. What are some methods of wastewater treatment that can be used to prevent such pollution?
5. Why is it important for communities like Ravi’s to have a proper wastewater management system?

4. Answer the following question

1. Suggest two alternative arrangements for sewage disposal where there is no sewerage system.
2. Recall and enlist some better housekeeping practices.
3. A sewage treatment plant involves few steps in its working.
   Aeration tank, grit and sand removal tank, second sedimentation tank, bar screen, first sedimentation tank.
   (a) Arrange all the above steps in the correct order in which they occur in the sewage treatment plant.
   (b) Which step gives most of the sludge?
4. Explain the different types of inorganic and organic impurities generally present in sewage.