Brain International School

Vikas Puri, New Delhi

REVISION SHEET

SUBJECT: SCIENCE **CLASS-VII** **Annual Exam**

Chapter -5: Physical and Chemical changes

1. **Choose the correct option:**

i. 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-coloured crystals got separated (step II). Step I and step II are
Choose the correct answer from the options below
(a) physical and chemical changes respectively.
(b) chemical and physical changes respectively.
(c) both physical change
(d) both chemical change

ii. During a physical change, a substance undergoes a change in its

a) physical properties b) chemical properties

c) both (a) and (b) d) none of these

2. In each of the following questions, two statements are given one labeled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below:

a) Both A and R are true, and R is correct explanation of the assertion.

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

c) A is true, but R is false.

d) Both assertion and reason are false.

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

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. 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.

2. 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

3. What happens when magnesium oxide is dissolved in water?

4. In addition to new products, what else may accompany a chemical change?

4. Answer the following case study-based question

A candle was lit in a dark room. The wax near the flame melted and changed into liquid wax. After some time, the liquid wax cooled down and became solid again. At the same time, the candle slowly became shorter as it continued to burn.

1. Identify the type of change involved when wax melts.
2. Name the type of change that causes the candle to become shorter.
3. Is the melting of wax a reversible change? Give reason.
4. Is burning of candle wax a physical or chemical change? Why?

Chapter-6 Respiration in Organisms

1. **Choose the correct option**:

   i. Breathing is a process that

   (a) provides O_2 to the body.

   (b) breaks down food to release energy.

   (c) helps the body to get rid of CO_2

   (d) 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)

   ii. 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. **In each of the following questions, two statements are given one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below:**

   a) Both A and R are true, and R is correct explanation of the assertion.

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

   c) A is true, but R is false.

   d) Both assertion and reason are false.

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

   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. **Answer the following question.**

   1. Explain the respiration in Earthworm and cockroaches.

2. 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?

3. Draw a well labelled diagram of respiratory system.

4. Explain the Respiratory system of cockroaches, frogs and fish.

5. **Case study-based question.**

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.

1. Why does the athlete breathe faster during the race?
2. Why does the athlete breathe faster during the race?What is the role of oxygen in the athlete's breathing rate after the race?
3. Explain the difference between aerobic and anaerobic respiration.

Chapter 7 Transportation in Animals and Plants

1. **Choose the correct option:**
   i. The absorption of nutrients and exchange of respiratory gases between blood and tissues take place in
   (a) veins (b) arteries (c) heart (d) capillaries

   ii. 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. **In each of the following questions, two statements are given one labelled Assertion (B) and the other labelled Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below:**

a) Both A and R are true, and R is correct explanation of the assertion.

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

c) A is true, but R is false.

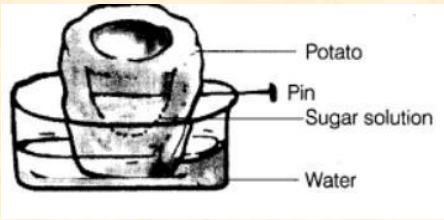
d) Both assertion and reason are false.

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 vapours through the stomata.

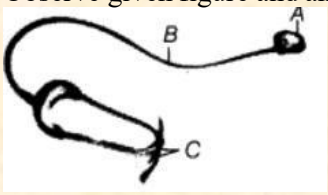
Assertion: The main function of red blood cells is to transport oxygen to body tissues.
Reason: Red blood cells contain a protein called hemoglobin, which binds to oxygen and carries it throughout the body.

3. **Answer the following Questions;**

1. Look at figure and draw another figure of the same set up as would be observed after a few hours.



2. Observe given figure and answer the given question.



(a) Name the instrument.
(b) Label the parts A, B and C.

3. What is the difference between arteries, veins, and capillaries in terms of their structure and function?

4. Draw and label the diagram of Excretory and Circulatory System.

5. Case study based questions

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.

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

Chapter-8 Reproduction in Plants

1. **Choose the correct option:**
   i. The zygote develops into
   (a) a seed (b) an ovule
   (c) a fruit (d) an embryo

   ii. 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. **In each of the following questions, two statements are given one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below:**

   a) Both A and R are true, and R is correct explanation of the assertion.

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

   c) A is true, but R is false.

   d) Both assertion and reason are false.

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

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

3. **Answer the following questions.**

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?

4. **Case study Based Question.**

A farmer planted potato pieces in his field. After a few days, new plants started growing from the eyes of the potato. Each new plant was similar to the parent plant. This method of reproduction did not require seeds.

1. Which type of reproduction is shown here?.
2. Name the part of the potato from which new plants grow.
3. Is this method sexual or asexual reproduction?
4. Do the new plants show variation from the parent plant?

Chapter 10 Electric Current and its effects

1. Choose the correct option

i. The Heating effect of current is observed in

(a) Electric iron (b) Electromagnet

(b) Electric bell (d) Electric Toys

ii. Electric Bell works on the principle of

(a) Magnetic effect (b) capacitor

(c) Resistor (d) Inductor

2. In each of the following questions, two statements are given one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below:

a) Both A and R are true, and R is correct explanation of the assertion.

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

c) A is true, but R is false.

d) Both assertion and reason are false.

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

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

3. 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.
(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. Why are electric wires usually covered with plastic or rubber

4. How can you test whether a material is a conductor or an insulator?

4. Case study based question:

Ramesh noticed that an electric iron becomes hot when it is switched on. The metal coil inside the iron gets heated due to the flow of electric current. This heat is used to press clothes. The iron stops heating when the switch is turned off.

1. Which effect of electric current is observed in the electric iron?
2. Why does the coil of the iron become hot?
3. What is the use of this effect in an electric iron?
4. What happens when the switch is turned off?

Chapter 11 Light

1. **Choose the correct option**.

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

ii. 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 mirror
(c) concave mirror or concave lens (d) concave lens or convex lens

2. In each of the following questions, two statements are given one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below:

a) Both A and R are true, and R is correct explanation of the assertion.

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

c) A is true, but R is false.

d) Both assertion and reason are false.

Assertion-We see objects because light reflected from them enters our eyes.
Reason-Light travels in a straight line.

Assertion-The image formed by a plane mirror is always virtual..
Reason-The image cannot be obtained on a screen.

3. **Case study-based question.**

Aarav stands in front of a plane mirror placed on the wall. He notices that when he raises his left hand, the image appears to raise its right hand. He also observes that the image is upright, of the same size as him, and appears to be formed behind the mirror.

1. State the type of mirror used by Aarav.
2. State the phenomenon responsible for the interchange of left and right in the image.
3. State the nature of the image formed by a plane mirror.
4. State the position of the image formed by the plane mirror.

Answer the following question

1. State two characteristics of the image formed by a plane mirror.
2. A student stands 2 m in front of a plane mirror.

   a) How far is the image formed from the mirror?

   b) State the size of the image.
3. Differentiate between concave and convex mirror.State their uses.
4. Differentiate between concave and convex lenses. State their uses.

Chapter 12 Forest Our Lifeline

1. **Choose the correct option**

i. Which layer of the forest receives the maximum sunlight?

a) Shrub layer b)Herb layer c)Canopy d)Forest floor

ii. Which process helps in maintaining the balance of oxygen and carbon dioxide in forests?

a) Respiration b) Photosynthesis

b) Transpiration d) Decomposition

2. In each of the following questions, two statements are given one labelled Assertion (B) and the other labelled Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below:

a) Both A and R are true, and R is correct explanation of the assertion.

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

c) A is true, but R is false.

d) Both assertion and reason are false

Assertion-The forest floor is rich in humus.
Reason-Leaves and dead organisms decompose on the forest floor

Assertion-Food chains in forests are interconnected.
Reason-Many organisms depend on more than one organism for food.

3. Case study Based Question

A forest area has tall trees forming a canopy, shrubs and herbs below it, and a forest floor covered with dry leaves. Many animals depend on plants either directly or indirectly. Dead plants and animals are broken down by microorganisms.

1. Identify the forest layer that receives maximum sunlight and justify your answer.
2. Explain the role of decomposers in maintaining forest soil fertility
3. Predict what would happen to the forest ecosystem if decomposers were absent.
4. Classify shrubs and herbs based on their role in the forest ecosystem.

Answer the following questions

1. Why forest in known as living dynamic entity.
2. Suggest two measures to conserve forests.
3. Explain why food webs are more realistic than food chains
4. Why is the forest floor nutrient-rich?
5. Explain the role of forests in maintaining ecological balance.

Chapter 13: Wastewater story

1. **Choose the correct option**

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. In each of the following questions, two statements are given one labelled Assertion (C) and the other labelled Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below:

a) Both A and R are true, and R is correct explanation of the assertion.

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

c) A is true, but R is false.

d) Both assertion and reason are false

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

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

3. Case study 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. Explain the different types of inorganic and organic impurities generally present in sewage.
4. How activated sludge is different from sludge ?
5. Write the steps that can be taken to become an active citizen.