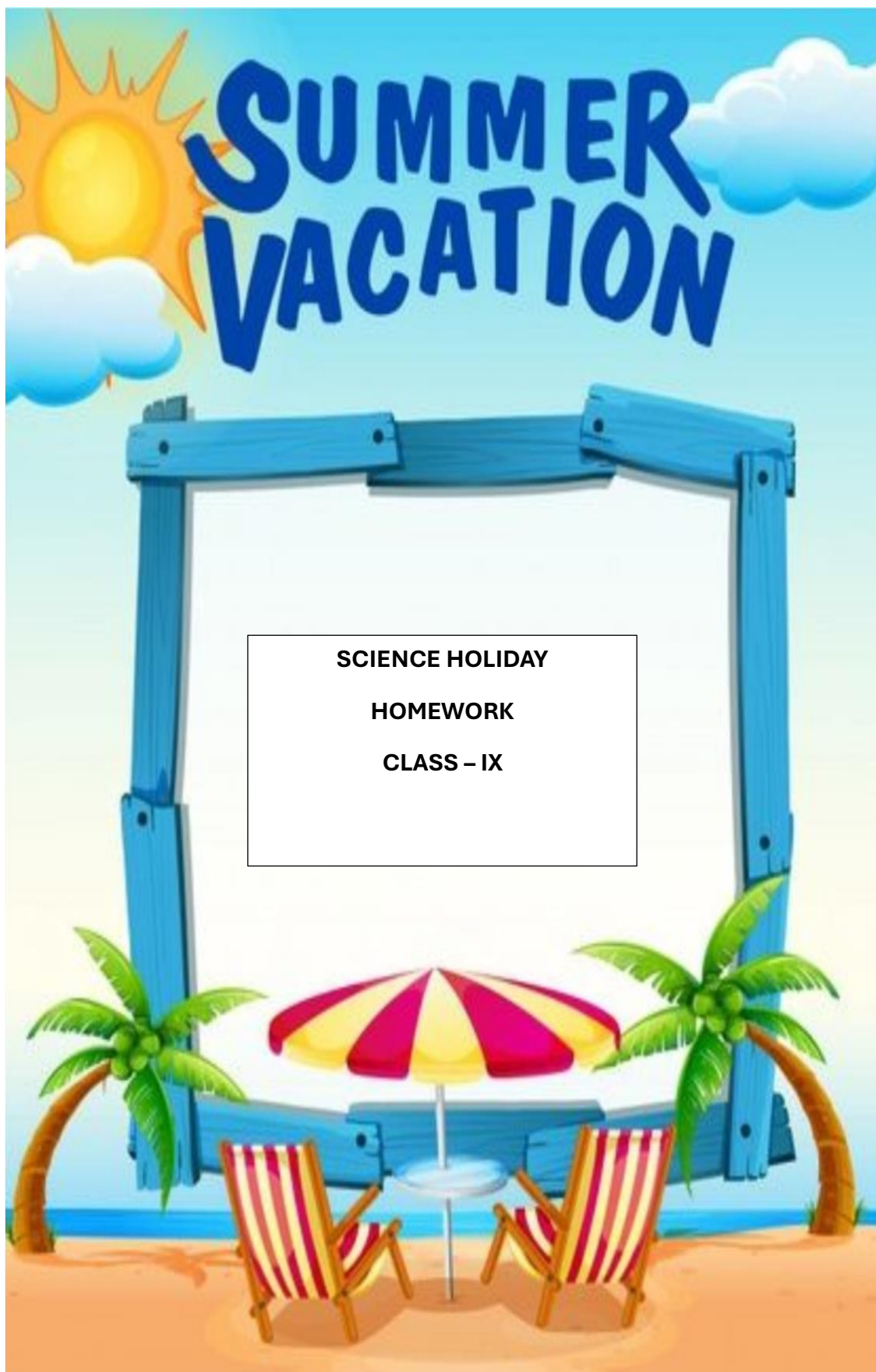




SCIENCE HOLIDAY

HOMEWORK

CLASS - IX

Dear Parents

We wish you and your child a very happy summer holidays . It's time to enjoy and create a bond with family, friends and relatives. To utilize this time in the most constructive way we have prepared Holiday Homework for the students on the principle of 'learning by doing' for their holistic development.

So here we start.....

Morning Blessings

Help your child inculcate good habits like doing “Surya Namaskar” and encourage him/her to wish all elders in the morning. If possible, visit a temple or any other religious place of your choice.

Physical Development

- ❖ Take the child with you for morning/evening walk.
- ❖ Play different games like hide and seek, football, ludo, chess, snakes and ladders, carrom board etc. with your child.

Language Development

- ❖ Encourage your child to converse in English.
- ❖ Choose any 1 object from your surroundings every day. Let the child speak few lines on it.

Being Good

- ❖ Help your child inculcate good habits like doing ‘Surya Pranam’ & encourage him / her to greet all elders in the morning.
- ❖ Help your child to use 4 magical words : PLEASE, SORRY, THANK YOU, EXCUSE ME as the part of basics of good manners.
- ❖ Encourage your child to listen.
- ❖ Gently care for animals. Encourage your child to be empathetic towards animals.
- ❖ Involve your child to sow a plant in a pot and give water. Give knowledge about plants and trees. Explain to them that they are an integral part of their growing
- ❖ Have at least two meals together with your children. Teach them the importance and hard work of the farmer and ask them not to waste their food.
- ❖ Let them take their own plates after every meal . Children learn dignity of labour from such activities.

Health and Hygiene

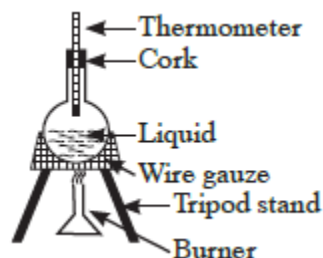
“Healthy mind resides in a healthy body.” So start your day early and set a routine even during vacations. In addition you and your little one can spend some quality time playing, cycling, swimming to keep yourself fit and healthy. Encourage your child to take care of personal hygiene by inculcating the habits like washing hands, practicing yoga, eating healthy food etc.

General instructions:-

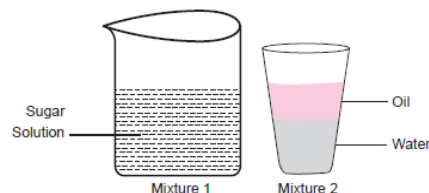
1. Attempt your work neatly.
2. Use loose sheets to write answers.
3. Write your Name, Class-section and Roll number.

Revise all the explained chapters and learn questions & answers.

1. Which physical property is being determined by the diagram?
(a) Melting point (b) Boiling point
(c) Density (d) Solubility



2. The image shows two solutions.
What differentiates a homogeneous mixture from a heterogeneous mixture?



- (a) Mixture 2 is homogeneous because the components of a homogenous mixture always form separate layers.
- (b) Mixture 1 is homogeneous because the composition is uniform throughout the mixture.
- (c) Mixture 2 is heterogeneous because the components of a heterogeneous mixtures are always liquid.
- (d) Mixture 1 is heterogeneous because the components of the mixture are not visible from the naked eye.

3. A student listed some mixtures and classified them into various types.

Mixture	Components	Type of mixture
W	Food colour + Water	Homogeneous solution
X	Sand + Water	Colloidal Solution
Y	Milk + Sugar	Suspension
Z	Rice + Flour	Heterogeneous mixture

Which mixtures are classified correctly? [CBSE T.E.R.M*]

- (a) W and X (b) X and Y (c) Y and Z (d) W and Z

4. Study the table showing melting points and boiling points of certain compounds. Answer the questions based on the table and related studied concepts.

Compound	Melting point (°C)	Boiling point (°C)
A. Ammonia	-78°C	-33°C
B. Butane	-135°C	-0.4°C
C. Sulphur dioxide	-73°C	-10°C
D. HCl	-115°C	-81°C
E. Pentane	-130°C	+36°C
F. Urea	133°C	Decomposes at boiling point 100°C
G. Water	0°C	100°C

- (a) Which from above table has highest boiling point and why?
 (b) If sample of urea has melting point 129°C, then is it pure or impure, give reason?

(c) Why is ammonia used in deep freezer?

Which gas is used in refrigerators and air conditioners?

or

(c) Which gas is responsible for ozone hole?

What is harmful effect of Ozone?

In the following Questions, the Assertion (A) and Reason (R) have been put forward. Read both the statements carefully and choose the correct alternative from the following:

- (a) Both the Assertion and the Reason are correct and the Reason is the correct explanation of the Assertion.
 (b) The Assertion and the Reason are correct but the Reason is not the correct explanation of the Assertion.
 (c) Assertion is true but the Reason is false.
 (d) The statement of the Assertion is false but the Reason is true.

5. **Assertion:** Boiling point of sea water is more than 100°C.

Reason: Soluble impurities increase the boiling point of liquid.

6. **Assertion:** Dust particle in air form aerosol.

Reason: Dust particles form dispersion medium and air is dispersed phase.

7. Assertion: Volatile solvents have low boiling points.

Reason: They have strong forces of attraction between particles.

8. Assertion: Sugar is more soluble in hot water than cold water.

Reason: Solubility of sugar increases with increase in temperature.

9. Assertion: A pure substance has no particles of any other substance mixed with it.

Reason: Pure substance has fixed melting and boiling point.

10. Assertion: Water sample freezes around -0.5°C and boils around 101°C .

Reason: So it is not pure.

11. List the two conditions essential for using distillation as a method for separation of the components from a mixture.

12. Which of the following statements is not correct?

(i) Colloidal solution is homogeneous

(ii) Colloidal solution appears to be homogeneous but actually it is heterogeneous

(iii) Colloidal solution shows Tyndall effect

(iv) Sky is blue due to Tyndall effect.

13. What is the percentage of fat present in milk of full cream?

(i) 6.0 % (ii) 4.0 % (iii) 3.0 % (iv) 1.5 %

14. Which of the following are homogeneous in nature ?

(i) ice(ii) wood(iii) soil(iv) air

(a) (i) and (iii) (b) (ii) and (iv) (c) (i) and (iv) (d) (iii) and (iv)

15. Differentiate between an element and a compound (any two point). Write one example of each.

16. (a) Name the separation technique you would follow to separate

(i) Dyes from black ink

(ii) A mixture of salt and ammonium chloride

(iii) Cream from milk

(iv) Sodium chloride from its solution in water

(b) State the principle used in separating a mixture of two immiscible liquids.

17. Define evaporation. Explain any two factors that affects its rate.

18. (a) Write one difference between concentration and solubility?

(b) What is the effect of temperature on the rate of solubility?

19. (a) List any three characteristic of colloid.

(b) Name the two components of a colloid.

(c) Identify colloid from the following mixtures:

Muddy water, sugar in water, ink, blood, soda water, foam

20. Identify the physical and chemical changes from the following:

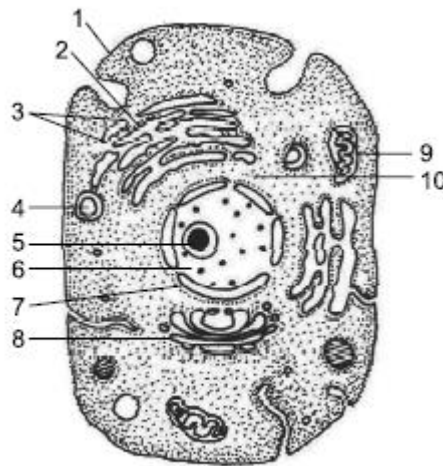
(a) Heating the mixture of iron and sulphur.

- (b) Ripening of fruits
- (c) Dissolution of salt in water
- (d) Rusting of iron-chair.
- (e) Making egg omelets.

21. What is chromatography? How will you separate the components of black ink using chromatography? Write any two applications of chromatography.

1 Given below is a diagrammatic sketch of electron microscopic view of an animal cell :

- (a) Label the parts indicated by lines as 1 to 10.
- (b) Give two reasons to support that it is an animal cell.
- (c) How many mitochondria are shown in the diagram?



A type of animal cell

2 Why is mitochondria called 'power-house of cell'? Give three similarities and one difference between mitochondria and plastid.

3 Draw the diagram of a plant cell and label any three parts which make it different from an animal cell.

4 Name the cell organelles which are called 'suicide bags' and 'power-house' of the cell. Why are they so called? Give reason.

5 Where are chromosomes located? What are they composed of? What is chromatin material and how does it change just before the cell divides?

6 Name:

- (a) An organelle which has its own genetic material
- (b) An organelle rich in digestive enzymes
- (c) Nucleic acid present in nucleus of cell

7 The structure/organelle of a cell that functions as a passage for intracellular transport as well as a manufacturing surface, is

- (i) ribosome (ii) endoplasmic reticulum
- (iii) plastids (iv) plasma membrane

8 Analyse the statements and pick up the right one regarding mitochondrial membranes from the following :

- (i) The inner membrane is longer than the outer membrane
- (ii) The outer membrane is longer than the inner membrane
- (iii) Both the inner and the outer membranes are almost equal in length.
- (iv) Mostly mitochondria have a single membrane.

9 The cell organelles (other than the nucleus) which contain DNA are

- (i) plastids and lysosomes
- (ii) mitochondria and Golgi apparatus
- (iii) Golgi apparatus and lysosomes
- (iv) plastids and mitochondria

10 Engulfing of food materials or foreign bodies by cells like Amoeba is called

- (i) diffusion (ii) endocytosis
- (iii) osmosis (iv) plasmolysis

11 A prokaryotic cell does not possess

- (i) cell membrane (ii) cell wall
- (iii) nuclear membrane (iv) both (a) and (c)

12 The major function of Golgi apparatus is

- (i) detoxification (ii) fermentation
- (iii) translocation (iv) secretion

13 Cell wall of which one of these is not made up of cellulose?

- (i) Bacteria (ii) Hydrilla (iii) Mango tree (iv) Cactus

14. What do you mean by mutagens? Which cancerous tumor is more fatal and why?

