The City School

PAF Chapter

Prep Section

Class – 7

Worksheets for Intervention Classes (1st Term)

S C I E N C E

FROM CELLS TO ORGANISMS

Q1. Encircle the best answer from the given options.

1. Size of an animal cell is
   a. Same as size of a plant cell
   b. Smaller than plant cell
   c. Bigger than plant cell
2. The thread like structure present in the nucleus
   a) cytoplasm
   b) chromosomes
   c) chloroplast
3. They are made up of proteins called DNA
   a) Chloroplast
   b) Genes
   c) Genes and chromosomes
4. The characteristics of an organism are passed down from one generation to the next by
   a) genes
   b) chromosome
   c) nucleus
5. Function of nucleus is
   a. Cell repair
   b. Control all functions of cell
   c. Both of the above

Q2. (a) - Differentiate between an animal cell and a plant cell.

Part of cell	Animal cell	Plant cell
Size of cell		
cytoplasm		
vacuole		
Shape of cell		

(b) Complete the table.

Part of a microscope	Its function
Stage	
mirror	
Stage clips	
Objective lens	

Q3. Fill in the blanks with suitable words.

a) A unicellular organism is so simple that its single cell can perform all the _____
b) In a multi cellular organism all the cells are specialized for different functions, this is called division of_____
c) Cells have different_____ to carry out different functions.
d) A nerve cell is also called_____
e) Xylem tissue and phloem tissue together make tissue or _____
f) A plant has two systems in it,_____system and_____system.
g) The largest human cell in terms of volume is_____ cell, which has a diameter similar to that of a strand of hair.
h) Sponges are very simple animals whose cells are not arranged into _____
i) A jellyfish has tissues but does not have _____

Q4. Draw and label an animal and a plant cell.

"Elements and Compounds"

Q1. Fill in the blanks.

1. A _____ reaction is a process in which new substances are formed.
2. Compounds (e.g. water) can be broken down into simpler substances by passing an electric current through it, in a chemical process called_____.
3. _____are the building blocks of all matter, including living and non-living things.
4. The most abundant element in our universe is _____, followed by Helium.
5. _____ is the most abundant element by mass in the Earth's crust and in the human body.
6. Every element is represented by an internationally recognized _____.
7. In the periodic table, elements are placed according to their properties into columns called _____ and rows called _____.
8. The Russian scientist _____ was the first to arrange elements in the periodic table.
9. A _____ can be used to describe a chemical reaction.
10. _____ is a very light and inert (inactive) gas used to fill air-ships and balloons.

Q2. Write the constituent elements of the following compounds.

1) Water _____
2) Sand (silicon dioxide) _____
3) Iron sulphide _____
4) Sodium chloride _____
5) Magnesium oxide _____

Q3. Which of the following word equations show the formation of compound and which shows the break-down of compound?

1) Mercuric oxide □ mercury + oxygen _____
2) Potassium + chlorine □ potassium chloride_____
3) Sodium hydroxide □ sodium + hydrogen + oxygen _____

Q4. Give three examples of the following:

1. Elements that are represented by only 1 letter.

_____

2. Elements that are represented by the first two letters of their English names.

_____

3. Elements that are represented by the first letter and one other letter in their names.

_____

Q5. Are the following statements True or False? Correct the statement if it is false.

1. Chlorine is a greenish yellow, poisonous gas. ( )

_____

2. In the periodic table, non-metals are found in between metals and metalloids. ( )

_____

3. The early Greeks believed that there were two elements: Earth and fire. ( )

_____

4. The properties of compounds are different from those of their constituent elements. ( )

_____

5. Copper has shiny appearance that is why it s used to make electrical wires. ( )

_____

6. Going across a period from left to right, elements change from being metallic to non-metallic in character.

_____

Q6. Write down the names of the elements against their chemical symbols.

1. Ca _____
2. I _____
3. Zn _____
4. N _____
5. Al _____

Q7. Write down the chemical symbols of the following elements.

1. Copper (cuprum) _____
2. Tungsten (wolfram) _____
3. Sulphur _____
4. Chlorine _____
5. Helium _____

Elements, Compounds

Q1: Read the following information on elements, compounds. Fill in the blanks where necessary.

Elements:

- A pure substance containing only one kind of _____.
- An element is always uniform all the way through (homogeneous).
- An element _____ be separated into simpler materials (except during nuclear reactions).
- Over 100 existing elements are listed and classified on the _____.

Compounds:

- A pure substance containing two or more kinds of _____.
- The atoms are _____ combined in some way. Often times (but not always) they come together to form groups of atoms called molecules.
- A compound is always homogeneous (uniform).
- Compounds _____ be separated by physical means. Separating a compound requires a chemical reaction.
- The properties of a compound are usually different than the properties of the elements it contains.

Q2: Give the names and symbols of 5 metals and 5 non-metals.

_____

_____

Q3: Lithium and Sodium are in group 1 – Find another element in group 1.

_____

Q4: Sodium and magnesium are in period 3. Find another element in period 3.

_____

Q5: What do you think a group is?

_____

Q6: What do you think a period is?

_____

Q7: From the following list of substances, underline the ones that are elements.

silver	carbon dioxide	sodium	chromium
water	hydrogen	carbon	nitrogen
oxygen	gold	sugar	salt
air	sulphur	magnesium	nickel

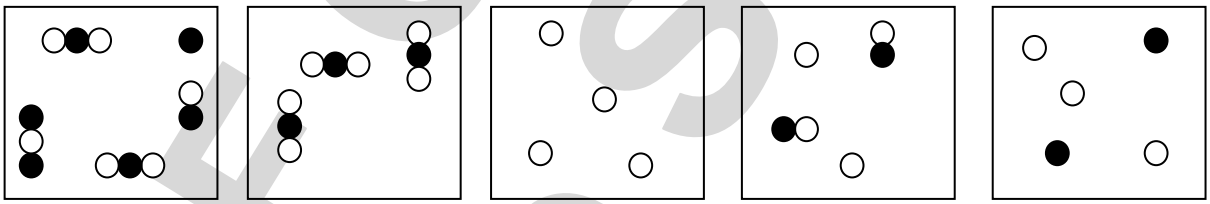
Mixtures:

- Two or more _____ or _____ NOT chemically combined.
- No reaction between substances.
- Mixtures can be uniform (called _____) and are known as solutions.
- Mixtures can also be non-uniform (called _____).
- Mixtures can be separated into their components by chemical or physical means.
- The properties of a mixture are similar to the properties of its components.

Part 2: Classify each of the following as elements (E), compounds (C) or Mixtures (M). Write the letter X if it is none of these.

___Diamond	Sugar ($C_6H_{12}O_6$)	___Milk	___Iron (Fe)
___Air	___Sulfuric Acid (H_2SO_4)	___Gasoline	___Electricity
___Krypton (K)	___Bismuth (Bi)	___Uranium (U)	___Popcorn
___Water (H_2O)	___Alcohol (CH_3OH)	___Pail of Garbage	___A dog
___Ammonia (NH_3)	___Salt (NaCl)	___Energy	___Gold (Au)
___Wood	___Bronze	___Ink	___Pizza
___Dry Ice (CO_2)	___Baking Soda ($NaHCO_3$)	___Titanium (Ti)	___Concrete

Part 3: Match each diagram with its correct description. Diagrams will be used once.



A **B** **C** **D** **E**

_____1. Pure Element – only one type of atom present.

_____2. Mixture of two elements – two types of uncombined atoms present.

_____3. Pure compound – only one type of compound present.

_____4. Mixture of two compounds – two types of compounds present.

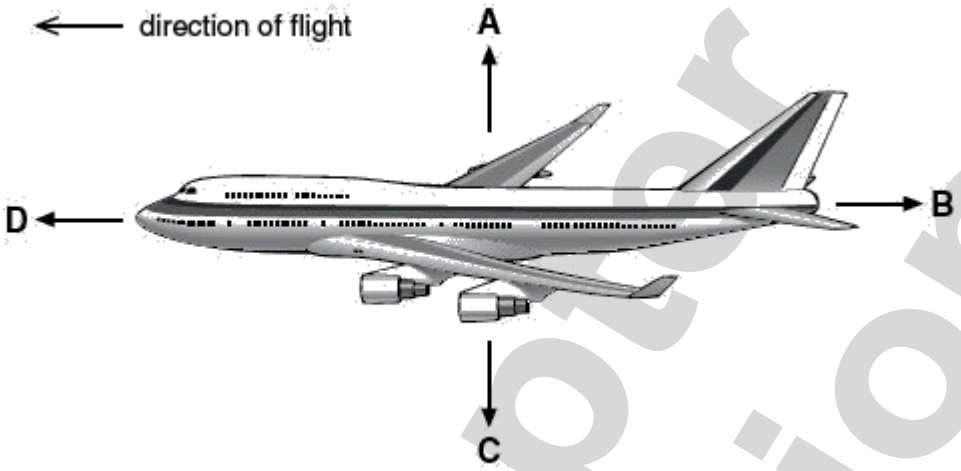
_____5. Mixture of a compound and an element.

Part 4: Column A lists a substance. In Column B, list whether the substance is an element (E), a compound (C), a Heterogeneous Mixture (HM), or a Solution (S). (Remember a solution is a homogeneous mixture.) In Column C, list TWO physical properties of the substance.

Column A	Column B	Column C
1. Summer Sausage		
2. Steam		
3. Salt Water		
4. Pencil lead (Pb)		
5. Dirt		
6. Pepsi		
7. Silver (Ag)		
8. Toothpaste (Na_2HPO_4)		
9. A burrito		
10. Italian Dressing		
11. Chicken Soup		
12. Lemonade		

FORCES AND THEIR EFFECTS

1) The diagram shows four forces acting on a plane in flight.



(a) Which arrow represents air resistance?

Give the letter……...

(b) (i) When the plane is flying at a constant height, which two forces must be balanced?

Give the letters.

…… and ……

(c) Just before take-off, the plane is speeding up along the ground.

Which statement is true?

Tick the correct box.

Force B is zero. ☐

Force B is greater than force D. ☐

Force D is equal to force B. ☐

Force D is greater than force B. ☐

(ii) Which statement is true about the plane just as it leaves the ground?

Tick the correct box.

Tick the correct box.

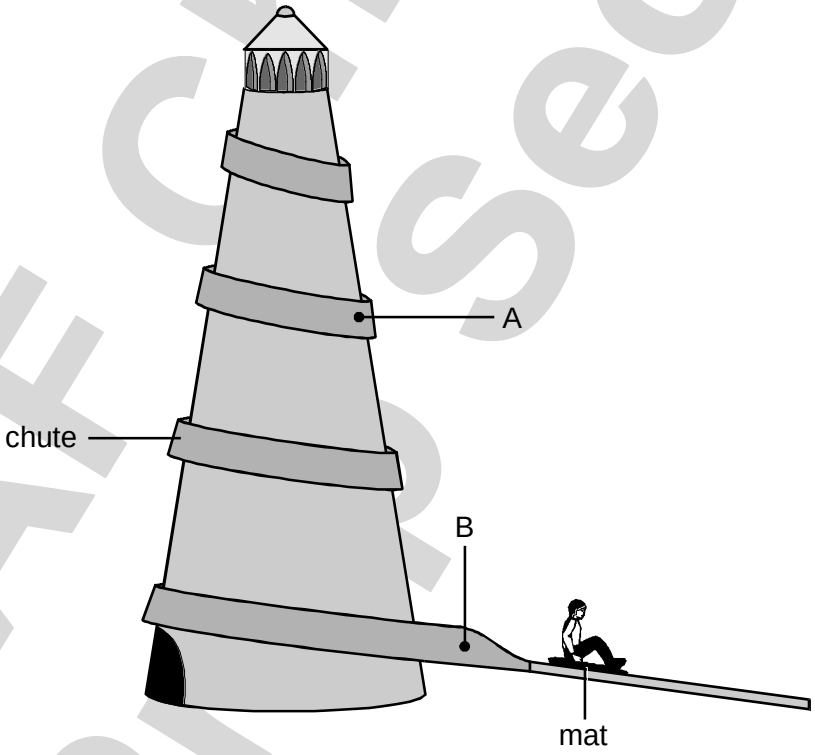
Force C is zero. ☐

Force C is greater than force A. ☐

Force A is equal to force C. ☐

Force A is greater than force C. ☐

2. Anil sits on a mat at the top of a helter-skelter and then slides down a chute around the outside.



a (i) Name **two** of the forces acting on Anil as he slides from point A to point B.

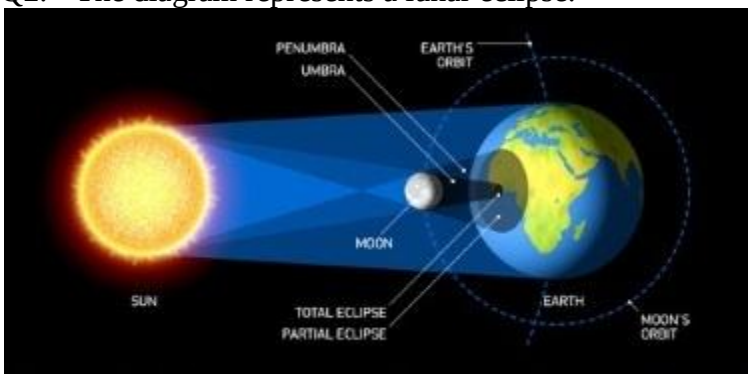
1. .....

2. .....

THE SOLAR SYSTEM AND BEYOND

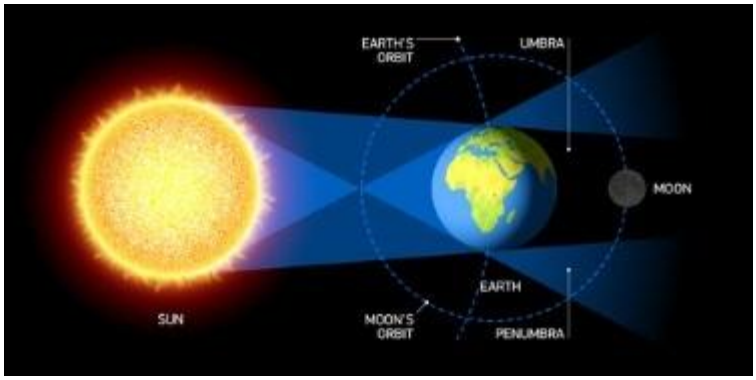
1) Path an object follows as it revolves around another object.
   a) revolution
   b) rotation
   c) Orbit
   d) ellipse
2) The Earth ROTATES on its axis once every _____ hours.
   a) 23
   b) 27
   c) 24
   d) 28
3) Movement of one object in orbit around another object. The Earth goes around the sun.
   a) Revolution
   b) rotation
   c) spin
   d) axis
4) The phase of the moon that follows the waning crescent is called _____.
   a) full moon
   b) new moon
   c) third quarter
5) For a solar eclipse to occur,
   a) the sun must be directly between Earth and the moon
   b) the moon must be directly between Earth and the sun
   c) the moon must be directly behind Earth
   d) Earth must be directly between the sun and the moon

Q2. The diagram represents a lunar eclipse.



   a) True
   b) False

Q3. The diagram represents a solar eclipse.



a. True
b. False

5. Question: Pluto is the smallest planet.
   a. True
   b. False
6. Question: Earth is the fourth planet from the sun.
   a. True
   b. False
7. Question: Match the following-Write the answer in the final column

A. Saturn 1. Farthest planet from the sun PLUTO

B. Mars 2. Called the red planet

C. Pluto 3. Is a large star

D. Sun 4. Has rings around it

Fill in the Blank

Mercury Saturn Pluto Neptune Uranus Earth Mars Saturn Venus

1. _____ is the closest plant to the sun.
2. _____ is the largest planet. 1 points

Fill in the Blank (1 point each)

Planet, Rotation, energy, orbit, energy, crater, star, moonlight, solar moon, season, constellation.

1. _____ - spinning round and round.
2. _____ -largest object you can see in the night sky.
3. _____- ball of hot gases
4. _____- light and heat from the sun.
5. _____-light of the moon
6. _____ -path around an object.
7. _____- large ball of rock and gas that follows a path around the sun.
8. _____- hole, valley, or indention on a planet or moon made by a large rock.
9. _____stars that form a star picture
10. _____- time of year that has a certain kind of weather

21. Discussion: How does the earth move? Explain your answer.

_____

_____

_____

_____

_____

_____

_____