



*The City School*  
**PAF Chapter**  
**Comprehensive Worksheet**  
**December 2019**  
**Science**  
**Class 7**  
**(Answering Key)**

## SECTION A

Q.1. Choose the correct answer:-

[ /20]

1. Iron reacts with sulphur to form iron sulphide. Which of the following statements is true about this chemical reaction?
  - A. An element combines with another element to form a compound.
  - B. An element combines with a compound to form another compound.
  - C. A compound combines with another compound to form a new compound.
  - D. A compound is broken down into simpler substances.
2. A \_\_\_\_\_ solution is formed when a small amount of solute dissolves in a given amount of solvent.
  - A. concentrated solution
  - B. saturated solution**
  - C. dilute solution
  - D. super saturated solution
3. Which of the following is a compound?
  - A. Hydrogen
  - B. Potassium
  - C. chalk**
  - D. Chlorine
4. Solubility is the maximum amount of solute dissolved in \_\_\_\_\_ of a solvent at particular temperature.
  - A. 100 g**
  - B. 1000 g
  - C. 10 g
  - D. 1 g
5. Strong acids are \_\_\_\_\_ and they taste \_\_\_\_\_.
  - A. Corrosive, sour**
  - B. Litmus, bitter
  - C. Red, corrosive
  - D. Blue, sweet
6. Alkali turns \_\_\_\_\_
  - A. Blue litmus red
  - B. Red litmus blue**
  - C. Blue litmus white
  - D. Red litmus green
7. A \_\_\_\_\_ is made up of two or more elements and/or compounds which are not chemically combined.
  - A. Compound
  - B. Element
  - C. Indicator
  - D. mixture**

8. \_\_\_\_\_ is used to separate components of a mixture.
- A. Evaporation
  - B. Distillation
  - C. Filtration
  - D. Chromatography**
9. A solution in which water is a solvent is known as \_\_\_\_\_ solution.
- A. Aqueous**
  - B. Dilute
  - C. Saturated
  - D. Concentrated
10. Air consists of oxygen, carbon-dioxide and noble gases dissolved in \_\_\_\_\_ gas.
- A. Hydrogen
  - B. Nitrogen**
  - C. Helium
  - D. Sulphurdioxide
11. \_\_\_\_\_ controls the movement of materials into and out of the living cell.
- A. Cell wall
  - B. Nucleus
  - C. Cytoplasm
  - D. Cell membrane**
12. The largest human cell in terms of volume is \_\_\_\_\_.
- A. Red blood cell
  - B. Guard cell
  - C. Egg cell**
  - D. Nerve cell
13. Brain is mainly composed of \_\_\_\_\_ and \_\_\_\_\_ tissues.
- A. Muscle, epithelial
  - B. Nerve, connective**
  - C. Epithelial, dermal
  - D. Ground, muscle
14. The pH value of water is \_\_\_\_\_.
- A. 2
  - B. 7**
  - C. 12
  - D. 14
15. Forces can be measured using \_\_\_\_\_.
- A. Spring balance**
  - B. Measuring cylinder
  - C. Universal indicator
  - D. pH meter

16. Weight of an object is the \_\_\_\_\_ acting on it.

- A. Frictional force
- B. Magnetic force
- C. Gravitational force**
- D. Upthrust

17. A \_\_\_\_\_ is a natural satellite which revolves around a planet.

- A. Sun
- B. Asteroid
- C. Star
- D. Moon**

18. What is caused by the revolution of the Moon around the Earth?

- A. Month**
- B. Day
- C. Seasons
- D. Lunar eclipse

19. Giving a moving car toy, a push in the same direction of its motion, will cause:

- A. The car to slow down
- B. The car to move faster**
- C. The car to stop
- D. The car to change its direction

20. Which planet has the longest year?

- A. Jupiter
- B. Mercury
- C. Venus
- D. Neptune**

Q2. Fill in the blanks.

[ /10]

- a. Solubilities of gases decrease when temperature **increases**.
- b. Brass and steel are the examples of mixtures called **alloys**.
- c. The asteroid belt lies between the planets **Mars** and **Jupiter**.
- d. A difference in boiling points is used to separate two or more liquids by **fractional distillation**.
- e. A **palisade** cell contains many chloroplasts which contain chlorophyll.
- f. The stronger the force applied, the **more** the spring stretches.
- g. Cells that perform the same function are grouped together to form a **tissue**.
- h. Vinegar contains **ethanoic (acetic)** acid.
- i. A red blood cell contains a red pigment called **haemoglobin** that helps to transport oxygen.
- j. In human beings, **skeletal** system supports the body and gives it a shape.

**Q3. Match column A with B and write the correct answer in column C.**

[ /10]

<b>COLUMN A</b>	<b>COLUMN B</b>	<b>COLUMN C</b>
1. An asteroid	a. Mercury	<b>9-a</b>
2. A star	b. Non luminous object revolving around a sun	<b>3-b</b>
3. A planet	c. Huge mass of hot gases	<b>2-c</b>
4. A moon	d. Unmanned space crafts used to explore celestial bodies	<b>10-d</b>
5. Artificial satellite	e. Hubble space telescope	<b>5-e</b>
6. Cause of day and night	f. Jupiter	<b>8-f</b>
7. Cause of a month	g. Natural satellite revolves around a planet	<b>4-g</b>
8. Largest planet	h. Revolution of moon around the Earth	<b>7-h</b>
9. Planet without an atmosphere	i. Huge rock revolving around astar	<b>1-i</b>
10. Space probes	j. Rotation of the Earth about its axis	<b>6-j</b>

**Q4a. Draw and label different parts of:**

[ /6]

**1. Plant cell**

Answer: Fig. 1.10, page#8 (Text-book)

**2. Animal cell**

Answer: Fig. 1.12, page#9 (Text-book)

**Q4b. Match each of the words, in the box, to the following statements.**

[ /4]

<b>Vascular tissues</b>	<b>Palisade cell</b>	<b>ground tissues</b>	<b>Connective tissues</b>
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1. Helps in photosynthesis, physical support and food storage: \_\_\_\_\_ **Ground tissues** \_\_\_\_\_

2. Xylem and phloem: \_\_\_\_\_ **Vascular tissues** \_\_\_\_\_

3. Joins all parts of an organism: \_\_\_\_\_ **Connective tissues** \_\_\_\_\_

4. Contains chloroplast: \_\_\_\_\_ **Palisade cell** \_\_\_\_\_

## SECTION B

**Q1a. Write two similarities and two differences between plant cell and an animal cell. [ /2]**

Ans: **similarities:**

The nucleus controls all the activities of the cell, including cell repair. It contains thread like structures called chromosomes, which are made of DNA. Genes are parts of the chromosomes which store information to be passed down from one generation to another.

**Differences:**

<b>Animal cell</b>	<b>Plant cell</b>
Animal cell doesn't contain cell wall.	Plant cell contains cell wall.
Animal cell doesn't have chloroplasts	Plant cell has colored pigment known as chloroplasts.
Animal cell has a small and numerous vacuole.	Plant cell contains a large and center vacuole.

**Q1b. How cytoplasm and vacuole are different in plant and an animal cell? [ /4]**

Ans: In plant cell, the vacuole almost fills the entire plant cell. It contains cell sap which keeps the cell firm by taking in water.

In animal cell vacuoles are small numerous, which contain food, water, waste materials and other substances.

**Q1c. Explain what each of the following words mean by writing a sentence to show its meaning. [ /4]**

- i. DNA:** deoxyribonucleic acid
- ii. Cell division:** The splitting of a cell to produce two new cells is called cell division.
- iii. Connective tissue:** Connective tissue join all parts of an organism and is made up of different types of cells such as blood cells, fat cells, cartilage cells and bone cells.
- iv. Unicellular organism:** An organism or living thing that is made of only one cell is called unicellular organism.

**Q2a. Write down the names of the following elements given their chemical symbols.** [ /5]

- i. N: \_\_\_\_\_ **Nitrogen** \_\_\_\_\_
- ii. S: \_\_\_\_\_ **Sulphur** \_\_\_\_\_
- iii. He: \_\_\_\_\_ **Helium** \_\_\_\_\_
- iv. Ca: \_\_\_\_\_ **Calcium** \_\_\_\_\_
- v. Zn: \_\_\_\_\_ **Zinc** \_\_\_\_\_

**Q2b. Write down the names of elements involved in the formation of the following compounds.**[ /5]

- i. polythene: carbon, hydrogen
- ii. sugar : carbon, hydrogen and oxygen.
- iii. Chalk: calcium, carbon and oxygen
- iv. Dry ice: carbon and oxygen
- v. sand: silicon and oxygen

**Q2c. Which method would you use to separate each of the following?** [ /5]

- i. Separate food colourings in chocolate candies \_\_\_\_\_ **Chromatography** \_\_\_\_\_
- ii. Separate diesel from crude oil \_\_\_\_\_ **Fractional distillation** \_\_\_\_\_
- iii. Iron fillings from Sulphur \_\_\_\_\_ **Magnet** \_\_\_\_\_
- iv. Oxygen from air \_\_\_\_\_ **Fractional distillation** \_\_\_\_\_
- v. Separate salt from sand \_\_\_\_\_ **Evaporation** \_\_\_\_\_

**Q3a. When Nitric oxide and Oxygen are combined, a new substance nitrogen dioxide is formed**

- i. **Write word equation for the above chemical reaction.** [ /1]

Nitric oxide + oxygen  $\longrightarrow$  nitrogen dioxide

- ii. **Is nitrogen dioxide an element or a compound? Explain.** [ /2]

It is a compound because it is made up of two simpler substances and can be broken down by further

by chemical reaction.

**Q3b. The following word equations represent chemical reactions:**

A. Iron + Sulphur  $\longrightarrow$  iron sulphide

B. Ammonia + hydrogen chloride  $\longrightarrow$  ammonium chloride

C. copper carbonate  $\xrightarrow{\text{heat}}$  copper oxide + carbon dioxide

**i. Which word equation shows the formation of a compound from:** [ /2]

a. two compounds: **B**

b. two elements: **A**

**ii. Which word equation above shows breaking of a compound into simpler substance.** [ /1]

**C**

**iii. Write the word equation of the following:** [ /3]

a. Dilute nitric acid + calcium carbonate  $\longrightarrow$  calcium nitrate + water + carbon dioxide

b. Dilute hydrochloric acid + sodium hydroxide  $\longrightarrow$  Sodium chloride + water

**Q4a. Answer the following questions**

**i. Write down at least three advantages of friction.** [ /3]

- Friction enable us to write and walk without slipping.
- It enables vehicles to slow down and stop when necessary.
- Threads in tyres and shoes soles help to increase friction for better grip.

**ii. An object that floats in water weighs 20 N in air.** [ /3]

- What is the weight of the object in water? \_\_\_\_\_ **20 N** \_\_\_\_\_
- What is the Upthrust acting on the object in water? \_\_\_\_\_ **Weight of object in air – weight of object in water = Upthrust** \_\_\_\_\_
- What is the weight of the water displaced by the object? \_\_\_\_\_ **Weight displaced by the water = Weight of the object in water.** \_\_\_\_\_

**iii. A man is coming down with a parachute.** [ /3]

- Name the forces acting on the parachute.



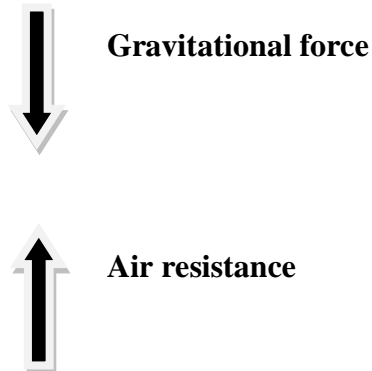


### Force of gravity and Air resistance

b. What can you say about the size of the forces?

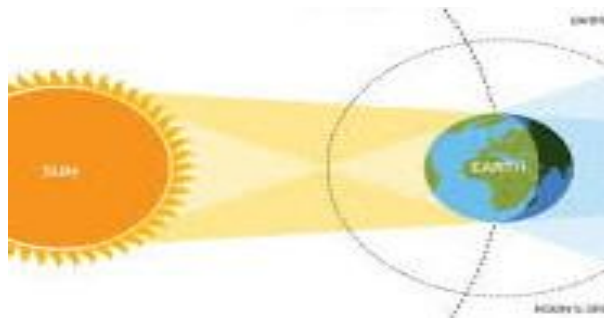
**Both of the Gravitational and Air Resistance are of equal size.**

c. Draw and label arrows to represent the forces acting on the ball.



Q4b. Study the diagram below.

[ /3]



i. What phenomenon is illustrated by the diagram?

\_\_\_\_\_ **Lunar eclipse** \_\_\_\_\_

ii. What phase is the Earth at during this phenomenon?

**During a Total Lunar Eclipse, the Sun, Earth and the Moon form a straight line. Earth blocks any direct sunlight from reaching the Moon. The Sun is behind Earth, so the Sun's light casts Earth's shadow on the Moon. This shadow covers the entire Moon and causes a Total Lunar Eclipse.**

iii. Does this phenomenon occur at night or in the day?

\_\_\_\_\_ **A lunar eclipse can occur only the night of a full moon.** \_\_\_\_\_

Q4c. Why do Earth support all forms of life?

[ /1]

Earth support any form of life because of the presence of liquid water on its surface, its atmosphere

and the fact that it is not too far from the Sun.

**Q4d. Why do stars appear to move?**

[ /1]

Stars appear to move because of the rotation of the Earth about its axis.

**Q4e. What causes the seasons on Earth?**

[ /2]

The tilt of the Earth's axis causes the seasons on the Earth as it revolves around the Sun.