

# Maharashtra State Board

## Class VII Science

### Sample Paper – 3

### Solution

I.

1. (c)

Compound	Molecular formula
Potassium permanganate	KMnO <sub>4</sub>
Potassium hydroxide	KOH
Ammonium chloride	NH <sub>4</sub> Cl
Iron chloride	FeCl <sub>2</sub>

2. (a)

River Jordan, Israel's only river, flows towards the south into the Dead Sea.

3. (b)

The solar eclipse occurs only on a New Moon day. The lunar eclipse occurs only on a Full Moon day.

4. (c)

Water is a liquid at normal temperature.

5. (d)

The different levels of organisation in living things in the correct order are  
Cell level → Tissue level → Organ level → System level

6. (b)

*Spirogyra* reproduces by segmentation. *Hydra* reproduces by budding. *Amoeba* and *Paramecium* reproduce by cell division (fission).

7. (c)

Catechu is obtained from the khair tree. It is useful as a food additive, herb, tannin and as a dye.

8. (a)

Copper is a metal. All metals are good conductors of heat. Carbon, sulphur and phosphorus are non-metals. All non-metals are bad conductors of heat.

9. (b)

Insulin regulates the blood sugar level in the human body. The saliva secreted by the salivary glands brings about the digestion of carbohydrates. The pancreatic juice secreted by the pancreas digests proteins and fats. The stomach secretes hydrochloric acid which makes the food acidic.

**10. (d)**

<b>Vitamin/Mineral</b>	<b>Deficiency disease</b>
Vitamin D	Rickets
Vitamin C	Scurvy
Iron	Anaemia
Iodine	Goitre

**11. (d)**

Endocrine glands are ductless glands which secrete hormones directly into the bloodstream. Pituitary, thyroid, adrenal, pineal and thymus are some major endocrine glands.

**12. (c)**

The given experiment shows that carbon dioxide is necessary for photosynthesis. The potassium hydroxide present in the flask absorbed all the carbon dioxide, and so, the part of the leaf inside the flask could not perform photosynthesis. Therefore, it did not turn bluish on reacting with starch.

**13. (c)**

The unit of frequency is Hertz, named after the German physicist Heinrich Hertz. One hertz means that an event repeats once per second.

**14. (d)**

An electroscope is a simple device used to identify electric charge. Moving apart of the leaves of the electroscope is the test to find out if the body is charged.

**15. (a)**

22<sup>nd</sup> March is observed as World Water Day every year.

**II.****16.**

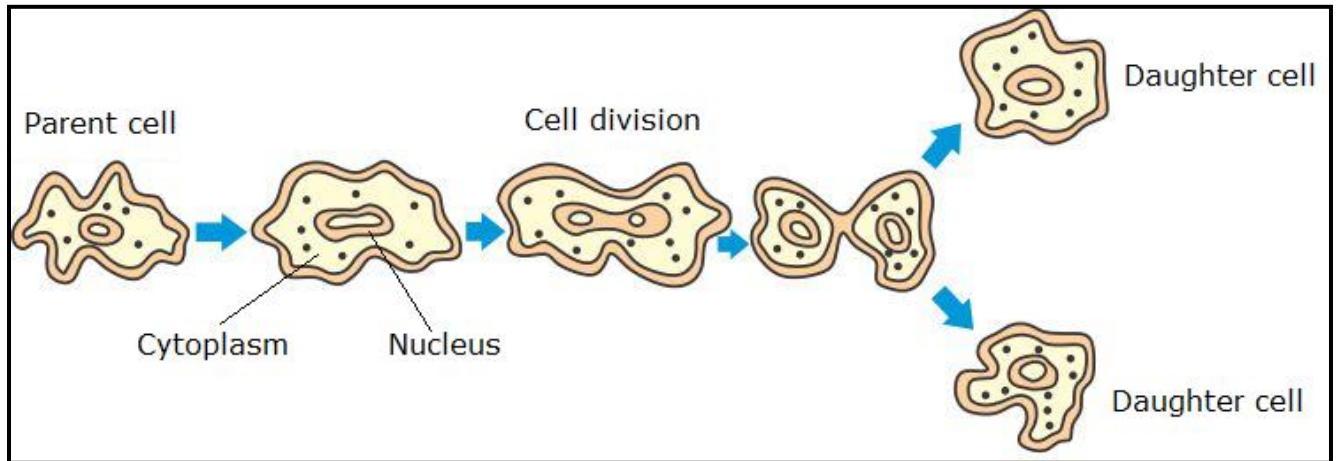
- (a) Indicators: Phenolphthalein, Methyl orange
- (b) Basic salts: Washing soda, Baking soda

**17.** Static electricity develops on certain objects only after rubbing them against some material. Because friction is required to produce static electricity, it is also called friction electricity.

**18. Measures for protecting soil:**

- (a) Planting trees
- (b) Using organic fertilisers instead of chemical fertilisers
- (c) Using organic insecticides
- (d) Preventing the cutting and felling of trees

**19. Reproduction in Amoeba:**



**20.**

- (a) Heat capacity: The heat required to raise the temperature of a certain mass of a substance by  $1^{\circ}\text{C}$  is called the heat capacity of that substance.
- (b) Kilocalorie: The heat required to raise the temperature of 1 kg of water by  $1^{\circ}\text{C}$  is called one kilocalorie.

**III.**

**21.** In olden days, ships used to be loaded excessively to obtain maximum profits. Because of this, there was a great danger of the ships sinking. British politician Samuel Plimsoll suggested a law which made it mandatory to mark a line on every ship. This line is called the Plimsoll line. The Plimsoll line indicates how much a ship can be loaded, especially cargo ships. This line is marked on the side of the ships. Legally, a ship may be loaded till the Plimsoll line remains visible only above the sea level.

**22. Ill-effects of smoking:**

- (a) Smoke of cigarettes or bidis contains harmful substances such as nicotine, tar and carbon monoxide.
- (b) These substances are dangerous for the smokers and for the people who are around them.
- (c) Nicotine damages the brain and the heart.
- (d) When a person smokes, tar deposits in the lungs.
- (e) Smokers often suffer from cancer of the throat, lungs and other respiratory organs.

**23. Blood bank:**

- (a) A blood bank is a place where blood is stored.
- (b) In blood banks, blood is taken from the body of a healthy person (donor) by a special technique and given to a patient in need (receiver).
- (c) When blood is not required urgently, it is stored under refrigeration for few days in a blood bank.
- (d) Whenever the need for blood arises for a patient, this blood is supplied to the patient.
- (e) Blood banks thus arrange for donation and transfusion of blood.

**24.** Because the temperature of the furnace is more than  $1000^{\circ}\text{C}$ , a specialised type of thermometer called pyrometer is used to measure the temperature of the furnace. This thermometer is made by joining two metals such as copper and iron. The metals to be used are selected on the basis of the temperature to be measured. When one end of this combination of metals is held in the furnace, an electric current passes through it. This electric current is measured to obtain the temperature of the furnace.

**25. Differences between music and noise:**

<b>Music</b>	<b>Noise</b>
1. Frequencies of sound are uniform.	1. Frequencies of sound are constantly changing.
2. Music has a melodious tune and regularity in sound.	2. Noise has harsh loudness and it changes irregularly.
3. Music never causes pollution.	3. Noise causes pollution.
4. Listening to music has soothing and calming effects.	4. Listening to noise can cause deafness, psychological and physiological disorders.
5. Examples: Sound produced from playing a sitar or flute	5. Examples: Sound from a loudspeaker or an aircraft

**IV.**

**26.**

	<b>Alloys</b>	<b>Constituents</b>
(a)	Steel	Iron + Carbon
(b)	Brass	Zinc + Copper
(c)	Nichrome	Nickel + Chromium
(d)	Duralumin	Aluminium + Copper

**27.**

(a) Functions of proteins:

- They help in the building up of muscles in the body.
- They look after the wear and tear of the body.

(b) Functions of fats:

- They provide energy to the body cells.
- They help preserve body heat when deposited under the skin.

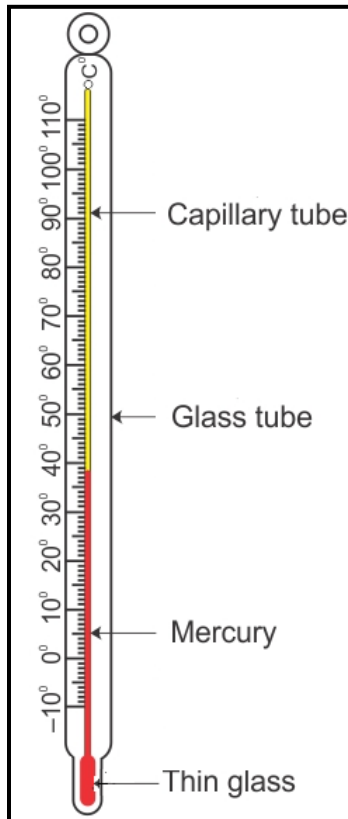
**28.** Our stomach produces hydrochloric acid for better digestion of food. Sometimes, the hydrochloric acid is produced in excess which causes acidity and indigestion, resulting in stomach ache. Magnesium hydroxide is the best cure for stomach ache. When magnesium hydroxide is administered, it neutralises the extra acid in the stomach and makes us feel better instantly. Therefore, doctors prescribe medicines containing magnesium hydroxide in case of severe stomach ache.

**29.** Some ways to reduce evaporation of water:

- (a) A thin layer of cetyl alcohol can be sprayed on the surface of water to prevent evaporation.
- (b) Irrigation can be carried out through large pipes instead of allowing water to flow in open canals.
- (c) Plants can be grown under plastic covers. The evaporated water condenses on these covers and falls back onto the ground, which can be used again by plants.
- (d) In villages, rainwater is stored in wells called bawris because these wells are very deep and do not allow water to evaporate easily.

**30. Construction of a thermometer:**

- (a) A thermometer is constructed using a thick-walled capillary tube with a uniform bore.
- (b) The capillary tube has a thin-walled glass bulb at one end.
- (c) The bulb and a small part of the tube are filled with mercury.
- (d) The other end of the tube is sealed after removing all the air from it.



- (e) After creating a vacuum in it, the other end is also sealed.
- (f) The tube is then calibrated.
- (g) A thermometer measures body temperature by using the property of expansion and contraction of substances because of heat.