Question paper SA–I

(2016–17) Set A

CBSE Class 8 SCIENCE

General instructions:

- This question paper has 28 questions.
- All the questions are compulsory.
- Write the correct serial number of the question before attempting it.
- Write the answers neatly and legibly.

1. Choose the correct answers. (6)

a. A rabi crop that is also one of the pulses is _____.

i. maize ii. cotton iii. gram iv. wheat

b. _____ can be drawn into wires.

i. Sulphur ii. Copper iii. Phosphorous iv. Hydrogen

c. Sound can travel through _____.

i. gases only ii. solids only

iii. liquids only iv. solids, liquids and gases

d. _____ can be used as an antibiotic.

i. Alcohol ii. Sodium bicarbonate

iii. Giardia iv. Penicillin

e. The characteristic of sound which enables us to differentiate between the musical sounds produced by different instruments is _____.

i. frequency ii. quality iii. pitch iv. loudness

f. The metal which is not used for electroplating metal objects is _____.

i. Nickel ii. Chromium iii. Sodium iv. Silver

Ans. a. iii. gram

b. ii. copper

c. iv. solids, liquids and gases

d. iv Penicillin

e. ii. quality

f. iii. sodium

2. Fill in the blanks with suitable words. (6)

a. _____ is electroplated over iron to make it look attractive.

b. Atmospheric pressure _____ with increase in height.

c. _____ is preserved by the process of pasteurization.

d. _____ is used in skin ointments because of its fungicidal properties.

e. Sound cannot travel in _____.

f. When electric current is passed through copper sulphate solution, copper gets deposited on the plated connected to the _____ terminal of the battery.

Ans. a. Chromium

b. decreases

c. Milk

d. Sulphur

e. vacuum

f. negative

3. What can you do to make pure water conducting? (1)

Ans. We can add salts to make pure water conducting.

4. Name the process of beating out the grains from harvested crops. (1)

Ans. The process of beating out the grains from harvested crops is known as threshing.

5. Name a condition caused on consumption of rotten food by a person and also mention the reason for the condition affecting the person. (1)

Ans. The condition caused is food poisoning. It is caused by microorganisms growing on food stuffs produce toxic substances. This makes the food poisonous. Consumption of such food cause a serious illness known as food poisoning.

6. Name the type of force involved when a small device is found to pull iron nails from a distance. (1)

Ans. The type of force involved when a small device is found to pull iron nails from a distance is magnetic force.

7. Write a well-balanced chemical equation for the reaction of sodium metal with water. Name the gas evolved in the above mentioned reaction. (2)

Ans. $Na + 2H_2O$ $2NaOH + H_2$ The gas evolved is hydrogen.

8. Why are protozoans said to have animal-like characteristics? (2)

Ans. Protozoans said to have animal-like characteristics as they can move from one place to another, they capture and eat food.

9. Two forces 8N and 3N act on a body in opposite direction. What is the direction and magnitude (value) of the resultant force? (2)

Ans. The resultant force = 8N- 3N= 5N and it will move in opposite direction to that of 8N.

10. State one advantage and one disadvantage of nylon over cotton. (2)

Ans. Advantage: Nylon fibres dry easily as compared to cotton fibres.

Disadvantage: Nylon fibres are easily inflammable, when burnt melt and stick to the body.

11. How is rayon manufactured? State two uses of rayon. (3)

Ans. Rayon is made from wood pulp. Wood pulp is first dissolved in an alkaline solution. The thick liquid produced is then passed through tiny holes to make fibres. The fibres are then hardened by passing them into a bath of sulphuric acid. The fibres are then spun into yarn and woven into cloth.
Uses: used to make apparel such as suits, ties tec.
Home furnishing such as bedspreads, bedsheets etc.

12. Give reasons for the following: (3)

a. Aluminum foils are used to wrap food items.

b. Copper cannot displace zinc from its salt solution.

c. Potassium reacts with cold water whereas iron does not.

Ans. a. Aluminum foils are used to wrap food items as it is a less reactive metal so do not react with food. Aluminum being a soft malleable metal can be beaten into thin sheets to form wrapping sheets.

b. Copper cannot displace zinc from its salt solution as copper is less reactive than zinc.

c. Sodium reacts with cold water whereas iron does not as sodium is more reactive than iron in the metal reactivity series.

13. Explain how sound is produced by humans. How does a loudspeaker make sound louder? (3)

Ans. We produce sound in the larynx of our throat. The larynx has two vocal cords which are folds of tissue with a slit like opening. When we speak, air passes through the opening and the vocal cords vibrate to produce sound.
The microphone first coverts sound into electrical signals. These signals are then amplified by an electronic amplifier. The amplified electrical signals are then converted back to sound by a speaker.

14. Draw a well- labelled diagram of a voltaic cell. (3)

Ans. a well- labelled diagram of a voltaic cell – dilute sulphuric acid as electrolyte, zinc plate as anode and copper plate as cathode.

15. State the location and function of the following:
a. endoplasmic reticulum
b. flagella
c. centrosome

Ans.

	Location	**Function**
a. endoplasmic reticulum	cytoplasm of both plant cell and animal cell	Helps in transport
b. flagella	attached to the cell surface of Euglena	Locomotion
c. centrosome	cytoplasm of animal cell	Initiates cell division

16. a. Write a well-balanced chemical equation to show the reaction of aluminum with dilute hydrochloric acid. (3)
b. Why is graphite used to make electrodes?

Ans. a. $2Al + 6HCl\ 2AlCl_3 + 3H2_3$

b. Graphite is used to make electrodes as graphite is a non- metal and a good conductor of heat and electricity.

17 a. What is loudness of sound? On which factor does it depend? (3)

b. Why is flash of light seen first and then thunder is heard during a thunderstorm?

Ans. a. Loudness of sound is a characteristic of sound. Sounds are produced by vibrating objects. If more energy is supplied to an object by plucking it or hitting it more strongly, then the object will vibrate with more amplitude and produce louder sound. Loudness of sound is directly proportional to square of amplitude.

b. This is because speed of light is more than that of sound.

18 a. State two differences between chromosomes and chromatin fibres. (3)

b. How does chromosome play an important role in transmission of hereditary characters?

Ans.

Chromosomes	Chromatin fibres
These are formed at the time of cell division.	These are present in the nucleus when the cell is not in a state of division.
These are condensed structures.	These are filamentous thread like structures.

b. Chromosomes carry hereditary units known as genes responsible for transmission of characters from parents to offspring.

19. How will you carry our electroplating of a metallic object with silver? (3)

Ans. Electroplating of a metal object with copper: We will take a metallic object as cathode, silver plate as anode, silver nitrate solution as an electrolyte. We will fill silver nitrate solution in the beaker and pass current through the circuit. The silver ions move towards cathode and get deposited on metal surface as silver atoms. At the anode, silver atoms in the silver plate lose electrons to form silver ions.

20 Give reasons for the following: (3)

a. The base of tall buildings are broad.

b. A sharp knife can cut objects more effectively than a blunt knife.

c. Frictional force is said to be a contact force.

Ans. a. The base of tall buildings are broad as it reduces pressure exerted on the ground so that they do not sink in due to extremely high pressure of buildings.

b. A sharp knife can cut objects more effectively as it has less area of contact so they exert more pressure with a little force as compared to a blunt knife.

c. Frictional force is said to be a contact force as it comes into play only when in contact with two surfaces. For example: Frictional force enables us to walk on road.

21 a. Differentiate between infrasonic sounds and ultrasonic sounds. Give an example of each kind. (3)

b. Name the nerve which carries impulses from ear to brain.

Ans.

infrasonic sounds	**ultrasonic sounds.**
Sounds which have a frequency of less than 20Hz are known as infrasonic.	Sounds with a frequency of more than 20,000 Hz are known as ultrasonics
Examples: Sounds produced by muscle	Example: dogs can hear ultrasonics movement

b. Auditory nerve carries impulses from ear to brain.

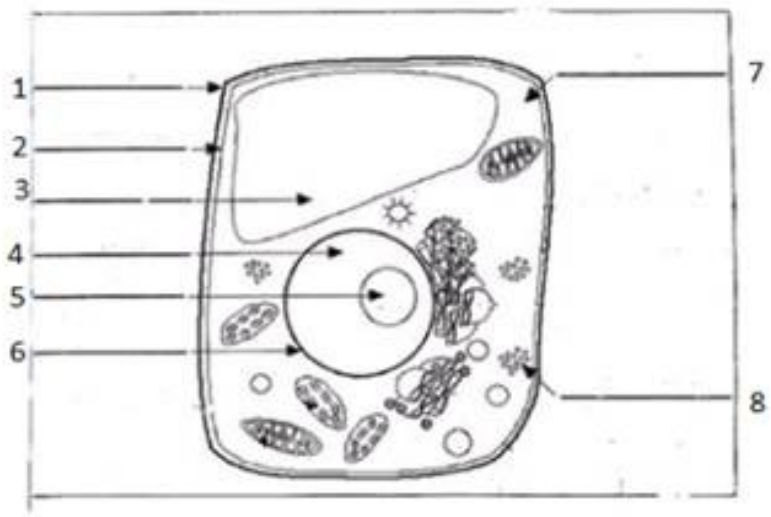
22. a. Explain any two methods of weeding. Why is weeding essential? (3)

b. What is green manure?

Ans. a. Two important methods of weeding: 1. By supplying weedicides like metachlor and dalapon. 2. Manually pulling the weeds by hand or trowel.
Weeding is important as weeds compete with useful crops for space, sunlight and minerals. They deprive the soil of essential minerals.

b. Some plants like legumes and fenugreek are planted and then mulched and ploughed back into the same soil. They are allowed to decompose and the manure obtained is known as green manure.

23. Study the diagram given below and answer the questions that follow:



a. Identify the diagram given above and label the parts marked from 1 to 8.

b. State one difference between a prokaryotic cell and a eukaryotic cell and give an example of each kind.

Ans. a. Draw a well- labelled diagram of a plant cell. (1- cell wall, 2- cell membrane, 3- vacuole 4- nucleoplasm 5- nucleolus 6- nuclear membrane/ nucleus, 7- cytoplasm 8- ribosomes.

b.

prokaryotic cell	**eukaryotic cell**
Do not have a well- defined nucleus	Have a well- defined nucleus.
bacteria	Algae

24. Sonu went to market with his mother. There he bought a packet of chips and after eating it, he threw the plastic wrapper on the roadside. On noticing it, his mother advised him not to throw wrappers on the roadside. (5)
a. Why did Sonu's mother advise him not to throw plastic wrapper on the roadside?
b. What values do we learn from Sonu's mother?
c. Suggest two steps you can take to reduce the danger that plastics pose to the environment.

Ans. Sonu went to market with his mother. There he bought a packet of chips and after

eating it, he threw the wrapper on the roadside. On noticing it his mother advised him not to throw wrappers on roadside.

a. Plastic is non- biodegradable and if consumed by an animal can lead to its death.

b. Sonu's mother has a concern for environment and has the knowledge.

c. People should be advised to carry their own bags while shopping Secondly we must pick up any litter lying in our close vicinity and encourage other to do so.

25. a. What are alloys? How are alloys made? (5)

b. Name the constituents of german silver and solder and also state its uses.

Ans. a. Alloys are mixtures of two or more metals or a metal and a non- metal.
It is made by mixing metals in their molten state or by mixing metal powders together.

b. German silver- copper zinc and nickel are its constituents

Use: used to make utensils, electric heaters. Solder – lead and tin Use: used to join metals.

26. Draw a well- labelled diagram to explain nitrogen cycle. Explain the mechanism of nitrification and denitrification in plants. (5)

Ans. Draw a well- labelled diagram of nitrogen cycle (6 labellings with explanation)
Nitrification: The ammonium compounds are taken up by plants and rest are converted into nitrates by nitrifying bacteria present in soil. This process of conversion of ammonia into nitrates is called nitrification.

Denitrification: Some of the nitrates are absorbed by plants and rest converted into free nitrogen. This process of conversion by denitrifying bacteria is called denitrification.

27. a. Draw a well-labelled diagram to explain that air exerts pressure on all directions. (5)

b. State two differences between mass and weight.

Ans. a. Draw a well- labelled diagram: we will take a plastic bottle and put boiling water in it. The steam coming out of the water will expel most of the air from inside the bottle. After

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about two minutes , screw the cap tightly on the bottle. Out the bottle in a trough and pour some cold water mixed with ice on it. As the bottle cools and the steam condenses we observe that the bottle gets crushed. This is because of the atmospheric pressure acting on the bottle was much larger than the pressure exerted by air inside the bottle.

b.

mass	**weight**
Mass of an object remains constant at any place and at any time.	Weight of an object keeps changing with change in place.
Mass is the quantity of matter present in a body.	Weight is the measurement of gravitational force acting on an object.

28. a. Explain any three ways by which microorganisms play an important role in cleaning the environment. (5)

b. Name two plant diseases, the causal agent of each disease and their mode of transmission in plants.

Ans. a. Three ways by which microorganisms play an important role in cleaning the environment.
Micro organisms like bacteria and fungi decompose the tissues of dead matter and thus prevent the earth's surface from getting covered by waste materials.
When microorganisms decompose dead remains, they in turn enrich the soil with nutrients.
Algae can carry out photosynthesis and thus give out oxygen into the earth's atmosphere.

b. Two plant diseases: Citrus canker, bacterial disease source is air, Rust of wheat caused by fungus source is air and seeds.