

**Class: VI**  
**Subject: Science**  
**No. of Questions: 60**  
**Duration: Min**  
**Maximum Marks:**

## BIOLOGY

1) An organism body is streamlined; the habitat of organism should be?

- (A) Land
- (B) Water
- (C) Desert
- (D) Mountain

Sol.(B)

An organism body is streamlined; the habitat of organism should be water.

2) Which of the following processes does not help in recycling carbon dioxide back into the air?

- (A) Respiration
- (B) Combustion
- (C) Photosynthesis
- (D) Burning

Sol.(C)

Photosynthesis does not help in recycling back carbon dioxide back into air.

3) Which bin is used for collecting materials which can be used again?

- (A) Blue
- (B) Red
- (C) Green
- (D) Yellow

Sol.(A)

The blue bin is used to collect materials which can be used again for various purposes.

4) Tiny bubbles seen on the surface of boiling water is?

- (A) Dissolved air escaping when water is heated.
- (B) Dissolved impurities in water escaping when water is heated.
- (C) Dissolved nitrogen in water escaping when water is heated.
- (D) Air dissolving in water.

Sol.(A)

Air is dissolved in water and it escapes when water is heated and therefore tiny bubbles are seen on the surface of boiling water.

5) By which process do living things produce more of their own kind organisms?

- (A) Circulation
- (B) Respiration
- (C) Reproduction
- (D) Excretion

Sol.(C)

Reproduction is the process by which living organisms produce more organisms of their kind to continue their species on Earth.

6) What is the importance of the water cycle in nature?

Sol. The water cycle is important because of the following reasons:

- i. Water cycle makes fresh water available in the form of rain.
- ii. It keeps the amount of water on the Earth's surface constant.

7) Why do animals living in the soil come out of the soil when it rains heavily?

Sol: When rain water fills the burrows of soil animals, they are not able to breath properly.

So, during rainy season animals living in soil comes out.

- 8) Name two examples of gases which do not dissolve in water.

Sol. Nitrogen and methane gas do not dissolve in water.

- 9) What will happen if garbage is not removed from our homes and surroundings regularly?

Sol. If garbage is not removed regularly from our homes and surroundings, they will become dirty. Some of the garbage will decay giving off a foul smell. The rotting garbage will become a breeding ground for disease causing organisms such as cockroaches, flies and mosquitoes.

- 10) Give reasons:

- i. We should not put wastes containing salt, oil and milk preparations in waste pits as food for red worms.
- ii. It is better to mix powdered egg shells or sea shells with the wastes to be put in waste pits.?

Sol.

- i. We should not put wastes containing salt, oil and milk preparations in the pits, as the disease-causing small organisms start growing in the pit.
- ii. Mixing powdered egg shells or sea shells with the wastes help red worms in grinding their food well.

- 11) Why does water disappear from wet surfaces after sometime?

Sol. Water from wet surfaces absorbs heat from the surroundings, and gets converted into vapours which escape into the atmosphere.

- 12) Many things are added into the thick paste of paper before spreading it during its recycling in order to get beautiful patterns. Name any four such things.

Sol. Four such things are:

- i. Food colour
- ii. Pieces of dry leaves
- iii. Flower petals
- iv. Pieces of coloured paper

**13)** Explain the role of microbes as a biotic component.

Sol:

Microbes cannot be seen with the naked eye and are hence termed as micro-organisms.

Bacteria and fungi help in decomposing the fallen leaves and dead animals and plants. These organisms break down the complex compounds present in dead bodies into simple substances.

**14)** How is rainwater harvesting done in open spaces?

Sol. Rainwater harvesting in open spaces around buildings in a city is done by

constructing percolation pits covered with concrete slabs having holes in them, and are connected to a recharge well through a pipe. The rainwater falling on the open spaces seeps into the percolation pit through the holes in its concrete slab cover.

After filtration in the percolation pit, the rainwater now enters the recharge well through the outlet pipe and gradually seeps into the soil.

**15)** Write three activities in which carbon dioxide gas is produced?

Sol: Carbon dioxide is formed during

- a. Combustion of fossils fuels.
- b. Respiration
- c. Fermentation and decomposition.

**16)** How can you reduce the use of plastics?

Sol. Use of plastics can be reduced by:

- a. Make minimal use of plastic bags.
- b. Use cloth or paper bag in place of plastics.
- c. Educate the people about ill-effect of plastics.

**17)** How are camels adapted to survive in a desert?

Sol. The camel is adapted to desert conditions because of the following:

- i. Its limbs contain large pads which help it to move on hot and slippery sand.
- ii. The hump of the camel is a reservoir of food in the form of fat.
- iii. It drinks a large quantity of water and stores it in water-cells, muscles and connective tissues.
- iv. It can live without drinking water for about two weeks. It excretes very little water in the form of urine.
- v. It can adjust its internal temperature according to the surrounding air. It sweats profusely in the bright sun to maintain its body temperature

**18)** Explain few methods of water conservation.

Sol:

1. Water reservoirs can be constructed to store water.
2. Bunds can be created on the banks of river to prevent the flow of water into the fields.
3. More trees should be grown to prevent soil erosion.
4. Water harvesting techniques should be adopted.
5. While having a bath, instead of using a shower, a bucket can be used. A bucket bath would consume significantly less water.

**19)** How are animals classified on the basis of habitat? Give two examples of each.

Sol.

- Terrestrial animals - These animals live on land. Examples -; Cow, zebra, lion, human beings, etc.
- Aquatic animals - These animals are found in water. Examples -; Fish, whale, shark, etc.
- Burrowing animals - These animals make burrows in the soil and live. Examples - Rat, snake, earthworm, etc.
- Arboreal animals - These animals live on trees. Examples -; Monkeys, squirrels, etc.
- Aerial animals - These animals fly. Examples -; Insects, birds, bat (mammal), etc.

**20) Mention any five characteristic features of living beings?**

Sol. Five characteristic features of living beings:

1. Nutrition – All living beings require food, to obtain energy needed to perform various activities, to repair worn-out tissues and for growth. Plants prepare their own food, the rest depend on each other for their food requirements.
2. Respiration – It is carried out by all living beings which releases the energy contained in food. This energy is then utilized by the body. Various chemical reactions, taking place in cells of living beings simultaneously, are collectively termed as metabolism. Nutrition and respiration are examples of metabolism.
3. Movement – It is any change in the position of a part of the body. Movement in animals is fast and readily noticed; however movements in plants cannot be detected easily. The opening of a flower bud into a flower is a slow process.
4. Response to stimuli – A ‘stimulus’ is a change in the immediate surroundings of the living being causing a change in the activities of the organism. The organism’s reaction to the stimulus is termed as ‘response’. For example, when we touch a hot object, we drop it immediately; here heat is a stimulus, and dropping of the object is the response. Similarly, light, heat, sound, touch and smell are examples of stimuli.
5. Reproduction – The process by which new living beings are produced is termed as

reproduction. Living beings produce off spring of their own kind.

## PHYSICS

**21)** To make an electric circuit, we can use?

- (A) Cotton wires
- (B) Metal wires
- (C) Silk threads
- (D) Plastic threads

Sol.(B)

Metal wires being good conductors of electricity can be used to make an electric circuit.

**22)** In which circuit will the bulb or bulbs glow brightest?

- (A) A simple circuit with one bulb and one battery.
- (B) A simple circuit with one bulb and two batteries
- (C) A simple circuit with two bulbs and one battery.
- (D) Bulb/bulbs will be equally bright in all the above cases.

Sol.(B)

Two batteries provide a greater flow of electricity than one and hence the bulb will glow more brightly.

**23)** Iron filings stick most to which part of the magnet?

- (A) North Pole of the magnet
- (B) South Pole of the magnet
- (C) Centre of the magnet
- (D) Ends of the magnet

Sol.(D)

Maximum iron filings stick to the ends of the magnet where the poles are situated.

**24)** The application of force on an object may change its?

- (A) Speed
- (B) direction of motion
- (C) time
- (D) speed and direction of motion, both

Sol. (D)

Both, the speed and the direction of motion of the object, may change on applying force.

**25)** If a force of 2N is applied over an area of 2 cm<sup>2</sup>, calculate the pressure produced.

- (A) 10000 Pa
- (B) 1000 Pa
- (C) 20000 Pa
- (D) 2000 Pa

Sol.(A)

$$\text{Area} = 2 \text{ cm}^2$$

$$= 2/10000 = 0.0002 \text{ m}^2$$

$$\text{We know that, Pressure} = \text{Force/Area} = 2\text{N}/0.0002 \text{ m}^2 = 10000 \text{ Pa}$$

**26)** (I) State the unit of force and define it.

(II) Name the unit of force in Standard International (S.I) system. How much mass can be lifted by this force in grams?

Sol. (I) Unit of force is kilogram force (kgf). 1 kgf is the force required to lift a body of mass 1 kg vertically upward.

(II) The unit of force in Standard International (S.I.) system is newton (N). 1 newton is the force required to lift the mass of 100 g vertically upward.

**27)** What are non-magnetic materials? Give any two examples.

Sol: Materials which are not attracted towards a magnet are called non-magnetic materials.

Examples - rubber and plastic.

**28)** What are the factors on which friction depends?

Sol. Friction depends on two factors:

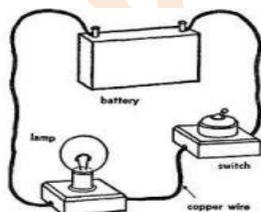
- (i) Nature of the surfaces in contact.
- (ii) How hard the surfaces press together.

**29)** When iron fillings are spread on a sheet and a bar magnet is placed on it, what do you observe? Do you find anything special about the way they arrange themselves?

Sol. When iron fillings are spread on a sheet and a bar magnet is placed on it, the iron fillings cling to the bar magnet.

Yes, we find that the iron fillings attract more towards the regions close to the two ends of a bar magnet.

**30)** Will the bulb glow in the arrangement shown in the figure? Give reasons.



Sol. Yes, the bulb will glow in the arrangement shown in the figure because the circuit is complete i.e. there is a continuity in the circuit without any break.

**31)** How can the process of expansion be used to fix a metal rim tightly on a wooden wheel?

Sol. The metal rim is made slightly smaller than the wooden wheel. On heating, the rim expands and fits onto the wheel. Cold water is then poured over the rim, which

contracts and fits tightly onto the wheel.

**32)** Why the wall of a dam is made stronger and thicker at the bottom than at the top?

Sol. The wall of a dam is made stronger and thicker at the bottom than at the top so as to

With stand high sideways pressure exerted by deep water stored in the reservoir of the dam.

**33)** (i) What is ball bearing? What is its use?

(ii) A pencil eraser loses tiny pieces of rubber each time you use it. why does this happen?

Sol. (i) Ball bearing is a device which consists of a ring of small metal balls. It is designed to make the moving parts of a machine to roll over each other rather than slide.

(ii) When we use a pencil eraser, friction between the eraser and the paper rubs off some rubber particles from the eraser. Thus, the eraser loses tiny pieces of rubber due to friction.

**34)** Explain the statement that repulsion is the sure test of magnetism.

Sol. Two magnet attract each other if unlike poles are brought close to each other, on the

Other hand two like poles of magnet repels each other. Attraction and repulsion is the sure test of magnetism

**35)** Differentiate between conductor and insulator with example.

Sol. Those substances through which electric current can flow are called conductor and

those substance through which electric current do not pass are called insulator.

Copper, silver, iron are conductors and plastic, paper, rubber are insulators.

**36)** Define:

(I) Force

(II) Contact force

(III) Muscular force

Sol. (I) Force: Force is a push or pull which changes or tends to change the state of rest or of

uniform motion or the direction of motion.

- (II) Contact force: Contact forces are the forces which act only when objects are in physical contact with each other. E.g.: muscular force, mechanical force, etc.
- (III) Muscular force: Muscular force is the force produced by the muscles of living beings.

**37)** How is compass used for finding directions at unknown place?

Sol. When a magnetic compass is placed at a particular place the needle of compass come to rest in north and south direction. The right side of compass needle is east and left side is west.

**38)** Write four uses of electromagnets?

Sol. Uses of electromagnets:

- a. For lifting and shifting heavy iron materials
- b. To remove iron splinters from wounds by doctors.
- c. For construction of electric motor and electric bell.
- d. To separate iron and other non-magnetic substance.

**39)** The handles of screwdrivers and pliers used by electrician for repair have plastic or rubber covering. Why?

Sol The handles of pliers and screw-drivers have rubber or plastic covering as rubber and plastic is bad conductor of electricity. During repairing, current may flow through the screw-driver and pliers that may cause electric shock to electrician in absence of insulator.

**40)** Describe a procedure to make a home-made torch?

Sol. The procedure to make a home-torch is as follows:

Take a torch bulb and a piece of wire. Remove the plastic covering at the two ends of the wire. Wrap one end of the wire around the base of the electric bulb. Fix the other end of the wire to the negative terminal of an electric cell with a rubber band. Now, bring the tip of the base of the bulb that is, its other terminal, in contact with the positive terminal of the cell. The bulb starts glowing

## CHEMISTRY

**41)** The components of mixture are separated for the following purposes

- (A) To remove harmful components.
- (B) To remove non-useful components in a mixture.
- (C) To obtain different but useful components of a mixture.
- (D) All of these.

Sol.(D)

The components of mixture are separated for the following purposes :To remove harmful components , to remove non-useful components in a mixture. To obtain different but useful components of a mixture.

**42)** A compound has

- (A) Only one kind of atom.
- (B) Only one kind of element.
- (C) A mixture of elements and molecules.
- (D) Only one kind of molecule

Sol.(C)

A compound has a mixture of elements and molecules.

**43)** Which one is a periodic change

- (A) Melting of ice
- (B) Change in season

- (C) Rusting of iron
- (D) Dissolving sugar in water

Sol.(B)

Change in season is a periodic change.

**44)** A mixture is a/an

- (A) Pure substance.
- (B) Impure substance.
- (C) Some are pure and others are impure.
- (D) None of the above.

Sol.(C)

Pure mixtures are called homogenous mixture whereas impure mixtures are called heterogeneous mixture.

**45)** The process of converting gas into liquid is called

- (A) Condensation
- (B) Cooling
- (C) Freezing
- (D) Evaporation

Sol.(A)

The process of converting gas into liquid is called condensation.

**46)** Define reversible and irreversible changes.

Sol. Reversible changes are changes which can be reversed to form the original substance.

Irreversible changes are changes which cannot be reversed to form the original substance.

**47)** Explain - Addition of salt to water is a physical change.

Sol. When salt is added to water, it dissolves and forms a salt solution. The dissolved salt can be obtained again on heating this solution. Thus, addition of salt to water is a physical change.

**48)** Why is carbon dioxide gas used to extinguish fire?

Sol. Carbon dioxide gas does not support combustion. When sprayed on a burning object, it cuts off the supply of oxygen and extinguishes the fire.

**49)** We can see water droplets condensed under a plate that has been used to cover a vessel containing milk that has just been boiled. From where have these droplets come from?

Sol. When liquids are heated, they change into gases(vapor or steam). This steam forms bubbles, which rise to the surface and escape into the air. When the container kept closed these vapors get settled on the lower surface of the lid. On cooling the vapors changes to form water drops.

**50)** What are undesirable changes? Give two example of it.

Sol. Those changes which are not useful to us and may cause harm are called desirable changes. Eruption of volcano and rusting of iron are example of undesirable changes. These changes are useless as well as harmful to us.

**51)** Give two example of changes in which energy is given out?

Sol: Energy is given out in

- a. Quicklime is dissolve in water
- b. Burning of coal.

**52)** What is solubility? Write the constituent of solution?

Sol. Solubility of a given solute in a solvent at a given temperature is defined as the weight in grams of the solute that will saturate 100 g of the solvent at particular temperature.

**53)** How do we obtain common salt from seawater?

Sol. Sea water is stored in huge ponds and allowed to evaporate by the natural process. The seawater thus gets concentrated. As more and more water evaporates, more crystals of common salt will be formed. These crystals are processed and packed.

**54)** Burning of sulphur powder is a chemical change. Give reason.

Sol. Burning of sulphur powder results in the formation of sulphur dioxide. This change is permanent and irreversible. Sulphur dioxide formed cannot be reversed back into sulphur powder by altering the conditions. The composition and properties of sulphur dioxide is altogether different from that of sulphur powder. Thus, burning of sulphur powder is a chemical change.

**55)** Define:

- (I) Element
- (II) Compounds
- (III) Mixtures

Sol. (I) Element: An element is a pure substance and is made up of one kind of atoms. Example: Sulphur, Hydrogen, Oxygen.

(II) Compound: A compound is a pure substance made up of two or more different elements combined chemically in a fixed proportion. Example: Water.

(III) Mixture: A mixture is an impure substance made up of two or more elements or compounds mechanically mixed together in any proportion. Example: Gun-powder.

**56)** Define distillation Write its advantages.

Sol. Distillation can be defined as the process of boiling a liquid, condensing the vapor and collecting the condensed liquid. Distillation process can be useful in extraction of petroleum products, manufacture of perfumes and medicine, food processing etc

57) What is sublimation? Write two examples of sublime substance?

Sol. The process of changing solid into gases directly without changing into liquid is called sublimation. Camphor and naphthalene are example of sublime substance. On heating, they vaporize into gases.

58) Iron rim is made slightly smaller than wooden wheel. How this rim is fitted on wooden wheel?

Sol. Iron rim is placed over wooden wheel to prolong its life. Iron rim is made slightly smaller than wheel. On heating the rim, it expands. Wooden wheel is put in rim in expanded state. On cooling iron rim contract and fit tightly with wood wheel.

59) Write a note on the occurrence of elements.

Sol. Elements occur both naturally and also can be obtained by artificial means. Naturally occurring elements occur in the earth's crust-example silicone and oxygen, earth's atmosphere-example helium and neon, and living organisms-example-carbon and oxygen. There are about 118 elements discovered till date.

60) Give the difference between physical and chemical changes.

Sol.

PHYSICAL CHANGES	CHEMICAL CHANGE
1) Physical changes are temporary and reversible.	1) Chemical changes are permanent and irreversible.
2) During a physical change, no new substance is formed.	2) During a chemical change, a new substance is formed.
3) During a physical change, the composition and properties of original substance is not altered.	3) During a chemical change, the composition and properties of original substance is altered.
Example - Boiling of milk	Example - Curdling of milk