

CBT CLASS IX SCIENCE SEPTEMBER (2024)

GENERAL INSTRUCTIONS

TOTAL NO. OF QUESTIONS 10 QUESTIONS.

ALL QUESTIONS ARE COMPULSORY.

1. Which of the following tissues has dead cells?

- a) Parenchyma
- b) Sclerenchyma
- c) Collenchyma
- d) Epithelial tissue

2. Girth of stem increases due to

- a) apical meristem
- b) lateral meristem
- c) intercalary meristem
- d) vertical meristem

3. Which is not a function of epidermis?

- a) Protection from adverse condition
- b) Gaseous exchange
- c) Conduction of water
- d) Transpiration

4. Voluntary muscles are found in

- a) alimentary canal
- b) limbs
- c) iris of the eye
- d) bronchi of lungs

5. Cartilage is not found in

- a) nose
- b) ear
- c) kidney
- d) larynx

6. Which of the following correctly represent the electronic distribution in the Mg atom?

- a) 3, 8, 1
- b) 2, 8, 2
- c) 1, 8, 3
- d) 8, 2, 2

7. Which of the following statement is always correct?

- a) An atom has equal number of electrons and protons.
- b) An atom has equal number of electrons and neutrons.
- c) An atom has equal number of protons and neutrons.
- d) An atom has equal number of electrons, protons and neutrons.

8. The maximum number of electrons that a valence shell of an atom can possess is _____

- a) 32
- b) 18
- c) 8
- d) 2

9. What is the total mass of neutrons present in Fe-56 atom?

- a) 30 u
- b) 56 u
- c) 26 u
- d) 40 u

10. Which of the following elements does not exhibit the electrovalency?

- a) Sodium
- b) Calcium
- c) Carbon
- d) Chlorine

ANSWERS (WITH EXPLANATION)

1b) Sclerenchyma

Explanation : The sclerenchyma is called the dead tissue because it lack protoplasm and has thick secondary walls which do not elongate during cell growth. Hence, mature cells get destroyed inside the sclerenchyma tissues.

2 b) lateral meristem

Explanation : The increase in the girth of a stem is due to the presence of lateral meristematic tissues. They are found in the cork cambium and in the vascular bundles of dicot roots and stems called vascular cambium as thin layers. This increase in the diameter and girth of the plant is called secondary growth.

3 c) Conduction of water

Explanation : Conduction of water and minerals in plants takes place in conducting vessels, located in the core, called xylem. Thus conduction of water is not the function of the epidermis.

4 b) limbs

Explanation : Voluntary muscles are the skeletal muscles of the body that attach to bones and control movement of the limbs, head, neck, and body under conscious control.

5 c) kidney

Explanation : Cartilage is a connective tissue found in nose, pinna of the ear and larynx. They provide support and flexibility to various parts of our body but not in the kidney. Kidneys help in the process of excretion and consists of renal tubules.

6 b) 2, 8, 2

Explanation : Atomic number and the number of electrons in magnesium atom is 12. So, electronic configuration is 2, 8, 2 (because $12 = 2 + 8 + 2$).

7 a) An atom has equal number of electrons and protons.

Explanation : The number of electrons and protons are always equal in all atoms. This maintains the electrical neutrality of the atom as the positive charges are balanced with negative charges. If the number of electrons and protons are not equal, then the atom will have a net positive or negative charge and it will form a cation or an anion.

8 c) 8

Explanation : The innermost shell has a maximum of two electrons but the next two electron shells can each have a maximum of eight electrons. This is known as the octet rule, which states, with the exception of the innermost shell, that atoms are more stable energetically when they have eight electrons in their valence shell, the outermost electron shell.

9 a) 30 u

Explanation : The isotope Fe⁵⁶ is neutral. So the number of electrons is equal to the number of protons. Therefore it has 26 electrons. Thus the isotope

Fe⁵⁶ has 26 protons, 30 neutrons and 26 electrons.

10 c) Carbon

Explanation : The number of electrons lost or gained by an element to achieve nearest noble gas configuration is called electrovalency of that atom.

Carbon does not exhibit electrovalency.