CBT Answer key Class IX September 2023

SCIENCE

Q1- An atom of each element has a definite combining capacity known as……

Ans- Valency **(d)**

Explaination-

The combining capacity of an element is known as its valency. Valency is the property of an atom that governs the number of atoms with which it can combine.

Q2-Some elements having same atomic number but different mass number this is happened due to….

Ans – Different Neutron Number (d)

Explaination-

Atoms of an element having same atomic number but different mass numbers are called isotopes.
Since,
Mass number = number of protons + number of neutrons
The number of protons in all the atoms of a particular element is same, therefore to have different mass numbers, isotopes contain different number of neutrons.

Q3-The Proton's is approximately _____ as that of the electron.

Ans- 200 times **(c)**

Q4. Which of the following statements is correct/true about Rutherford's model of an atom?

i) It was in agreement with E. Goldstein

ii) It can similar to the solar system

iii) Considered that the nucleus is Positively charged

iv) Established that the Alpha-particles are four times heavier as hydrogen atom

Ans- (ii) and (iii) statement are correct. **(b)**

Explaination-

According to Rutherford model, a central positively charged nucleus is present in the atom and electrons revolve around it. This model is similar to solar system so also called planetary model

Q5. While revolving in discrete orbits the electrons do not _____.

Ans- Radiate Energy **(c)**

Explaination-

According to the classical mechanics, orbits are shells of constant energy in which electrons revolve. These energy shells are considered to be of a discrete energy value and electrons radiate energy when they make transitions from one shell to another. But they do not radiate any energy while revolving.

Therefore, as electron revolve, it does not produce wavelets because, it do not spin about its on axis/centre, so they does not radiate.

Q6.Which muscles act involuntarily?

(i) Striated muscles

(ii) Smooth muscles

(iii) Cardiac muscles

(iv) Skeletal muscles

Ans- (ii) and (iii) - **(b)**

Explaination- Involuntary muscles are the muscles which contract without conscious control. The contraction is controlled by the autonomic nervous system. These are present in the walls of the digestive system, blood vessels, bronchi, uterus and bladder.

Q7.Girth of stem increases due to

Ans- Lateral meristem **(b)**

Explaination-

1. Lateral meristem is responsible for the increase in the girth of the stem.
2. It is found beneath the bark (called cork cambium) and in vascular bundles of dicot roots and stems (called vascular cambium) as thin layers.
3. It is composed of such initials which divide mainly in one plane and increases the girth of the stem.
4. Lateral meristem occurs at the lateral portion of the plant body.

Q8. The dead element present in the phloem is

Ans- Phloem Fibres

Explaination-

1. In vascular plants, the phloem is the living tissue that carries the soluble organic chemicals produced during photosynthesis.
2. Conducting cells, also known as sieve elements, parenchyma cells, which include both unspecialized and specialized companion cells and albuminous cells, and supportive cells like fibers and sclereids, makeup phloem tissue.

3. The primary phloem tissue that gives the plant stability, rigidity, and strength is called the sclerenchyma.
4. Both fibers and sclereids, two types of sclerenchyma, have thick secondary cell walls and are typically dead when they reach maturity.
5. The phloem fibers provide support to the tensile strength while permitting flexibility of the phloem.
6. They are elongated, narrow cells with a limited lumen and thick walls made of cellulose, hemicellulose, and lignin.
7. Sclereids are somewhat shorter, unusually shaped cells that contribute to the phloem's increased compression strength but limit its flexibility. They serve as defense mechanisms against herbivory.

Q9.While doing work and running, you move your organs like hands, legs etc. Which among the following is correct?

Ans- Smooth muscles contract and pull the tendons to move the bones **(c)**

Explaination-

- Smooth muscles are located in the visceral organs of the body. For example, urinary bladder, uterus, respiratory tract, etc.
- These muscles are not connected to bones and do not function in movements like walking and running.
- In contrast, skeletal muscles attach directly to the skeleton which synchronizes the movement of muscles with bones.
- These skeletal muscles are attached to bones with a tough, flexible band of fibrous connective tissue called tendon.
- When the skeletal muscles contract, it pulls the tendon attached to the bone, aiding to the movement of bones.

Q10.Which is not a function of epidermis?

Ans Transpiration **(d)**

Explaination-

The epidermis is the outermost layer of plants that helps in the protection of plants from unfavourable environmental conditions.
The gaseous exchange also occurs in the epidermis. The stomatal cells are the sites of gaseous exchange.
There are various cells that are modified from the epidermis that perform the function of transpiration.