**CONCEPT BASED QUESTIONS**

**JASON DAVID 9625499941 Class 9 Science 20/12/2021**

**Question :** Do plants like Peepal and Tulsi take in carbon dioxide and give out oxygen during night because they are considered as sacred plants ?

**Answer :**  There are 3 photosynthesis pathways adapted by plants for carbon fixation namely C3 pathway (Calvin cycle), C4 pathway and CAM pathway (Crassulacean Acid Metabolism). C3 and C4 are common among land plants and among these two, C3 is the most common. In photosynthesis, the source of oxygen is water. The photolysis of water (split of water in presence of light) can take place only in presence of sunlight. During night there is no sunlight and hence no photolysis of water to release oxygen. Therefore these plants can not release oxygen during night.

CAM pathway can be seen in desert plants and epiphytes (i.e. plants that live on other plants). Unlike C3 and C4 plants, these plants keep their stomata closed during day and open them during night for fixing CO2 in the form of malate and releases O2. They do it so, to prevent loss of water due to sunlight. During the day, they breakdown the malate and use the released CO2 through Kalvin cycle to produce sugars, similar to C3 plants. So, CAM plants release oxygen during night.

**However, it is not true that they release large amounts of oxygen during the night. The amount of oxygen is very less and that can be utilized in photorespiration.**

Other plants that give out oxygen ( in very less amount) at night are Areca Palm, Neem tree, Snake plant, Aloe Vera, Gerbera and Tulsi

Source: google search from different websites.

**AMANKUMAR  9582373515 Class 10 Science**

**Question :** Respected sir/mam, I had attended the science open merit test (SOMT) in 10th class but the results have not been declared yet. Please give me any update regarding it's result.

**Answer :**  Dear Aman, last SOMT test was held in December 2019 and its result was declared in March 2020 which is available in DSSTF website [www.dsstf.org](http://www.dsstf.org) Mention your year of appearance, school, roll number, father’s name etc. Merit list and Appreciation list is also available for other years. You can observe yourself in website or contact on (M) number 9313602293.

**PRIYA 8700747314 Class 10 Science 08/12/2022**

**Question:**

Why is this exam conducted and what will be the syllabus, pattern of exam What is the motive of this exam What are the benefits of this exam What is the cut off criteria of the exam Please tell me the above information as fast as possible because the exam is going to held on following Sunday please sir/ma'am answer my question as possible. (About SOMT)

**Answer**:

For information about SOMT go to SOMT Circular, you will get all related information.

**RISHI 9643210159 Class 10 Science 19/01/2023**

**Question :** Do all cells in our body have exactly the same DNA ?

**Answe**r: Please find below the answer of the question, you may do the changes if required. As I don't have the access of link on DSSTF website (forgotten the password).

"Yes, almost all cells of our body have the same DNA (Except RBCs which don't have DNA at all and the sperm or egg cells which have only half the amount of DNA of other body cells)."

Though each body cell has the same genomic content, but the requirements of the production of proteins is different of each cell of the body which is decided by about 20,000 of genes present on the chromosomes and therefore the portion of the DNA sequence (gene) which gets expressed in any region is influenced by the functional need of the body cell.

**R. P. SINGH 9990081661 Class 11 Biology 25/05/2023  
Question:**  Anatomically, the outer most covering (peel) of potato tuber is known as :  
(1) Epidermis (2) Endodermis (3) Hypodermis (4) Periderm Select the correct option and give reason ?

**Answer :** The potato periderm is the outer tissue of potato tubers that protects the tuber from pathogen attack, dehydration and wounding during harvest and storage. It is secondary in origin and replaces the epidermis early during tuber development. The outer layers of the periderm consist of cells with suberized walls. The layers of cork, cork cambium and secondary cortex constitute the protective covering called periderm. When we peel the skin of a potato tuber, we remove periderm.

**MANISHA VERMA 9871534682 Class 7 Science 31/7/2023**

**Question:** Why some plants consume insects ? Where are these plants found ?

**Answer :** Most of the plants are photosynthetic organisms and they absorb inorganic nutrients from the nutrient rich soil through their roots and turn them into organic molecules. But the Insectivorous plants grow in nitrogen deficient soils. The may be terrestrial or aquatic. To compensate the deficiency from soil supplies, they adapt to various means in order to attract, trap and digest the insects and other animals to obtain Amines/Proteins that they contain.

They mainly grow in humid soil which lack nitrogen. These plants receive plenty of sunlight and moisture but lack Nitrites/Nitrates/Ammonium ions which are required for synthesis of enzymes necessary for metabolic activities of the plants. Nitrogen fixation from atmosphere does not take place due to absence of Nitrogen fixing bacteria which are unable to survive in this habitat. It is interesting to know that there are about 630 species of carnivorous plants known to us, and some larger plants are capable of digesting even reptiles and small mammals. These insectivorous plants are commonly found in North Eastern States of India.