Paper IV

MERISTEMS

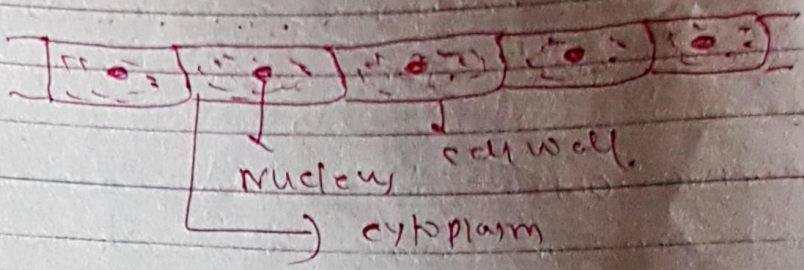
Q. What are Meristems. Describe different types of meristem and also mention and chief functio

INTRODUCTION → Plants parts and plant bodies also grow in length and diameter due to activities of tissues having dividing cells. Such tissues are called Merismatic tissues. In plant, growth is localised to the tips or some other region. several kinds of merismatic tissues occur in plant which formed plant organs of different nature.

DEFINITION → It is a tissue which has dividing cells or the cells have capacity to form new cells.

CHARACTERISTIC OF MERISMATIC TISSUE → Merismatic tissue bear the following features.

1. The cells are highly active.
2. The cells divided regularly or have capacity for cell division.
3. Cells are compactly arranged without intercellular spaces.
4. Cell wall is thin and cellulose.
5. The nuclei are large and prominent
6. Cells cytoplasm is dence and granular.
7. Vacuoles are small or absent
8. They store little amount of food substances.



CLASSIFICATION OF MERISTEMS → Meristems have been divided into 4 classes on the basis of 4 different characteristic.

[1] Meristems based on position.
[2] Meristems based on origin.
[3] Meristems based on plane of cell division.
[4] Meristems based on function.

[1] Meristems based on position → According to their position in plant body, the meristems have been divided into the following 3 types.

A) Apical Meristems → These are meristems found located at the apicies of plant parts. Such as root, stem and leaves. Hence the meristems located at the tip of root, stem and leaves are called apical meristems. These are unicellular and simple in organization in lower plants but are multicellular and have complex organization in higher plants.

FUNCTION → Apical meristems contibutes to increase in the length of the plant part and plant bodies.

B) Intercalary Meristems → The meristems of this kind remains interrelated as sandwiched between too permanent tissues. They are actual parts of apical meristems. Sometimes the apical meristems barks and the middle part elongates rapidally to form the intercalary meristems.

They have been found located at the base of petiole and nodes.

FUNCTION → They also increase the length of the plants.

C) Lateral Meristems → These are lateral position, occuring in the sides of plant parts and plant bodies. These are of secondary origin cambium and cork cambium are good examples of lateral meristems.

FUNCTION → It increase the diameter of thickness of the plant parts and the plant organs.