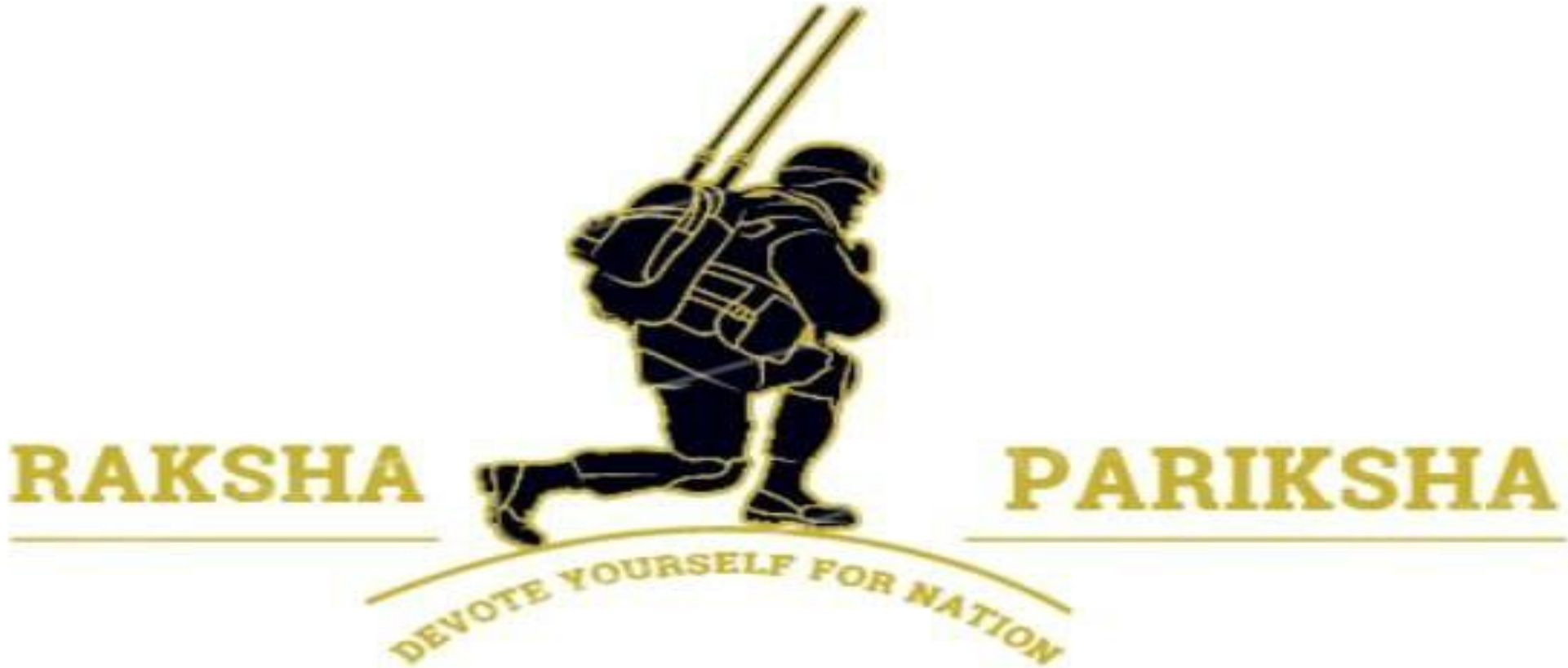

RAKSHA
PARIKSHA
DEVOTE YOURSELF FOR NATION

NDA PREVIOUS YEAR BIOLOGY QUESTIONS ANALYSIS

By :- Navneet Kumar

2018 - I

- Diseases (AIDS)
- Prokaryotic cell (Not a part)
- Respiration
- Classification of plants (Bryophyta)
- Classification of organisms (Higher to lower)
- Plant tissue (Meristems)
- Nervous system (Element transfer electric signal)
- Cell (Discovery)
- Food chain (Order)
- Tissue (Contractile tissue)
- Digestive system (Stomach acid)

2018 - II

- Phytoplankton, algae (Statement)
- Cell organelles (Contains DNA)
- Cell (SRM function)
- Tissue (Meristem)
- Classification of organisms (Unicellular)
- Diseases (Water borne)
- Digestive system (Stomach acid)
- Circulatory system (Oxygenated blood)
- Photosynthesis (Oxygen came from)
- Nervous system (Order)

2019 - I

- Cell organelles (Not posses Nucleic acid)
- Cell organelles (Not posses genetic material)
- Plant tissue (Conducting tissue)
- Tissue (Vascular tissue)
- Food chain (Primary consumers)

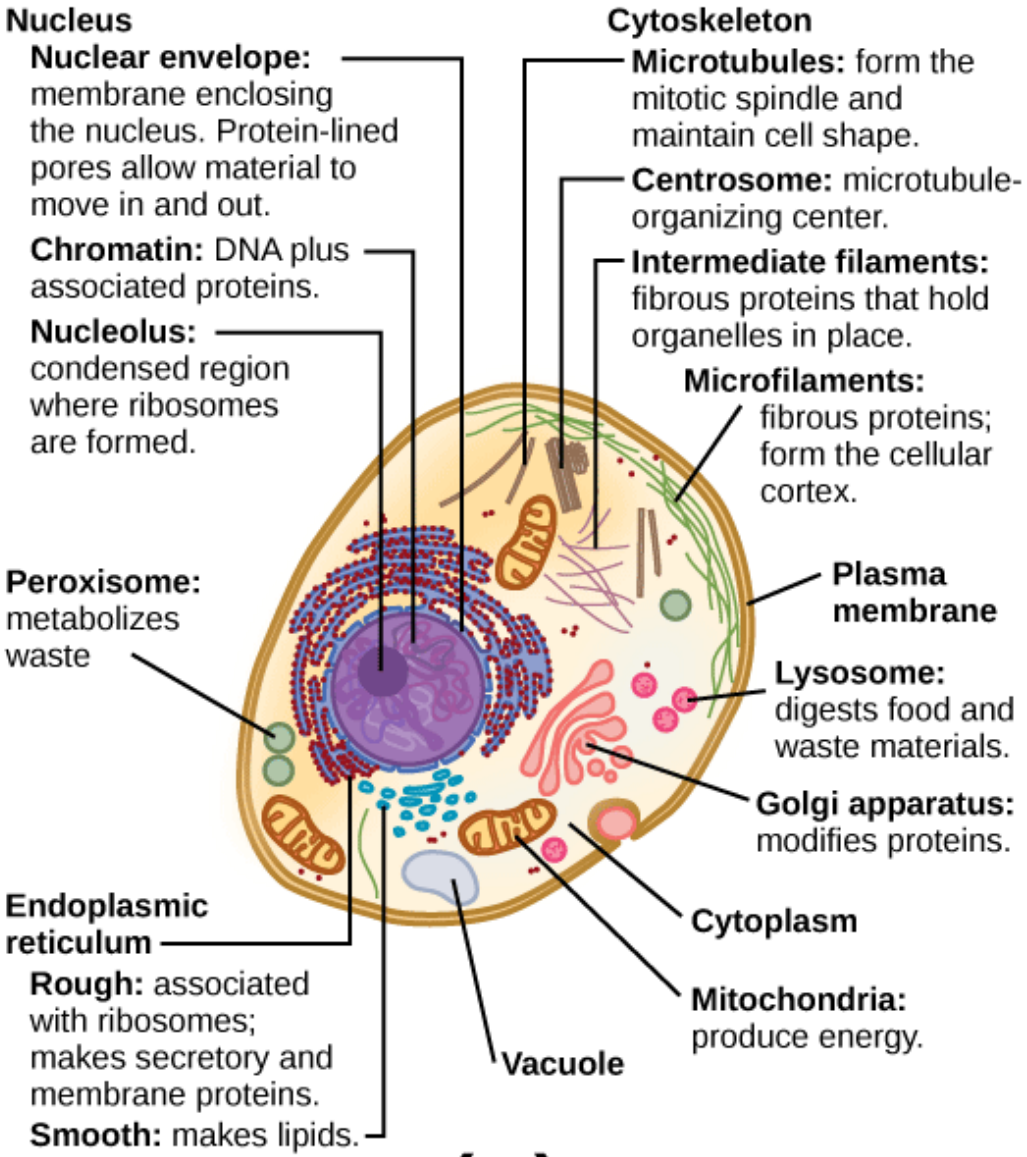
2019 - II

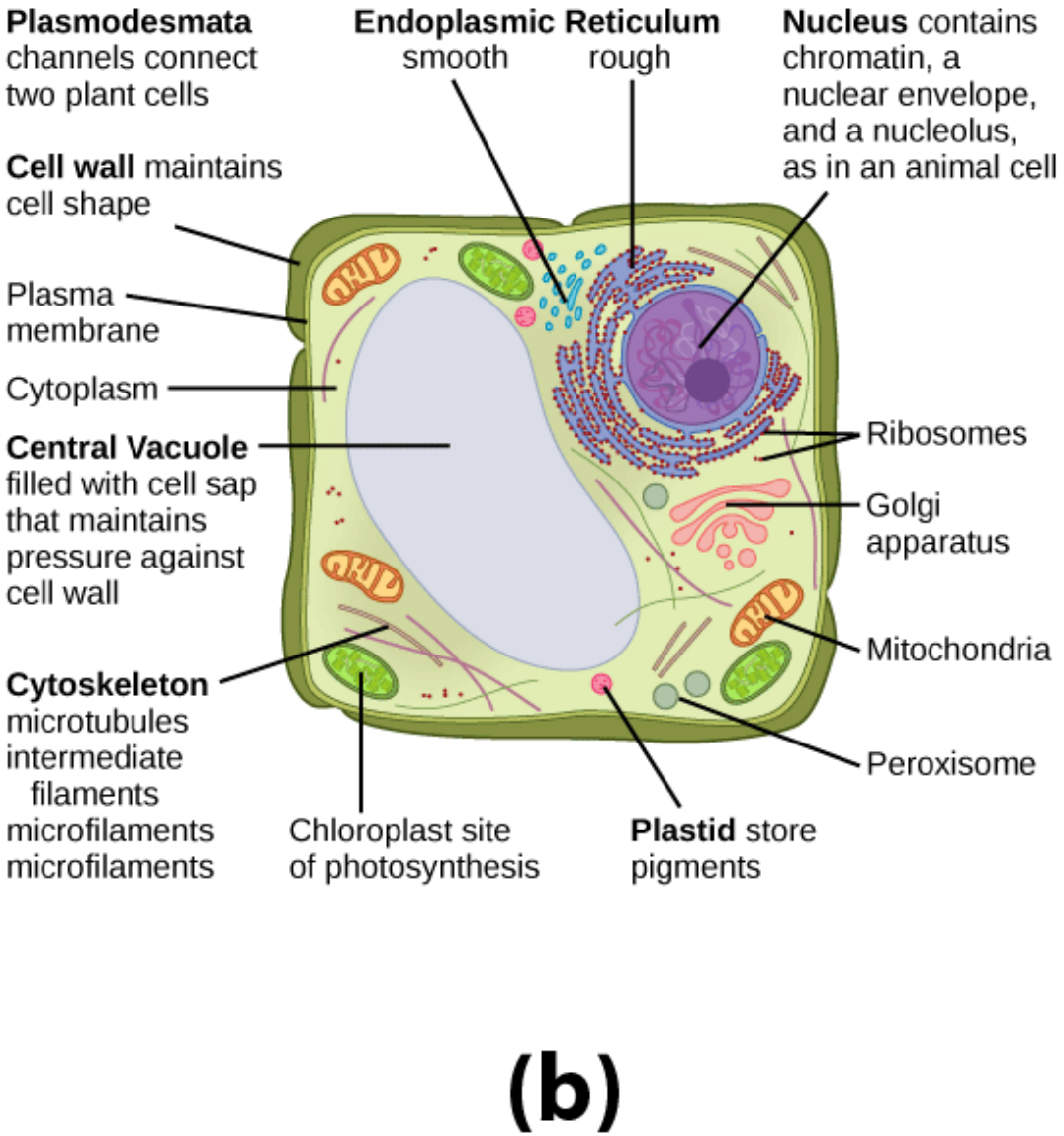
- Cell (Movement of water)
- Cell organelles (Mitochondria)
- Tissue (Blood)
- Plant tissue (Statement)
- Taxonomy (Embryological character)
- Glands (Thyroid gland)
- Diseases (Human)
- Virus (Statement)
- Vitamins (Vitamin ‘C’)

2020 - (I) & (II)

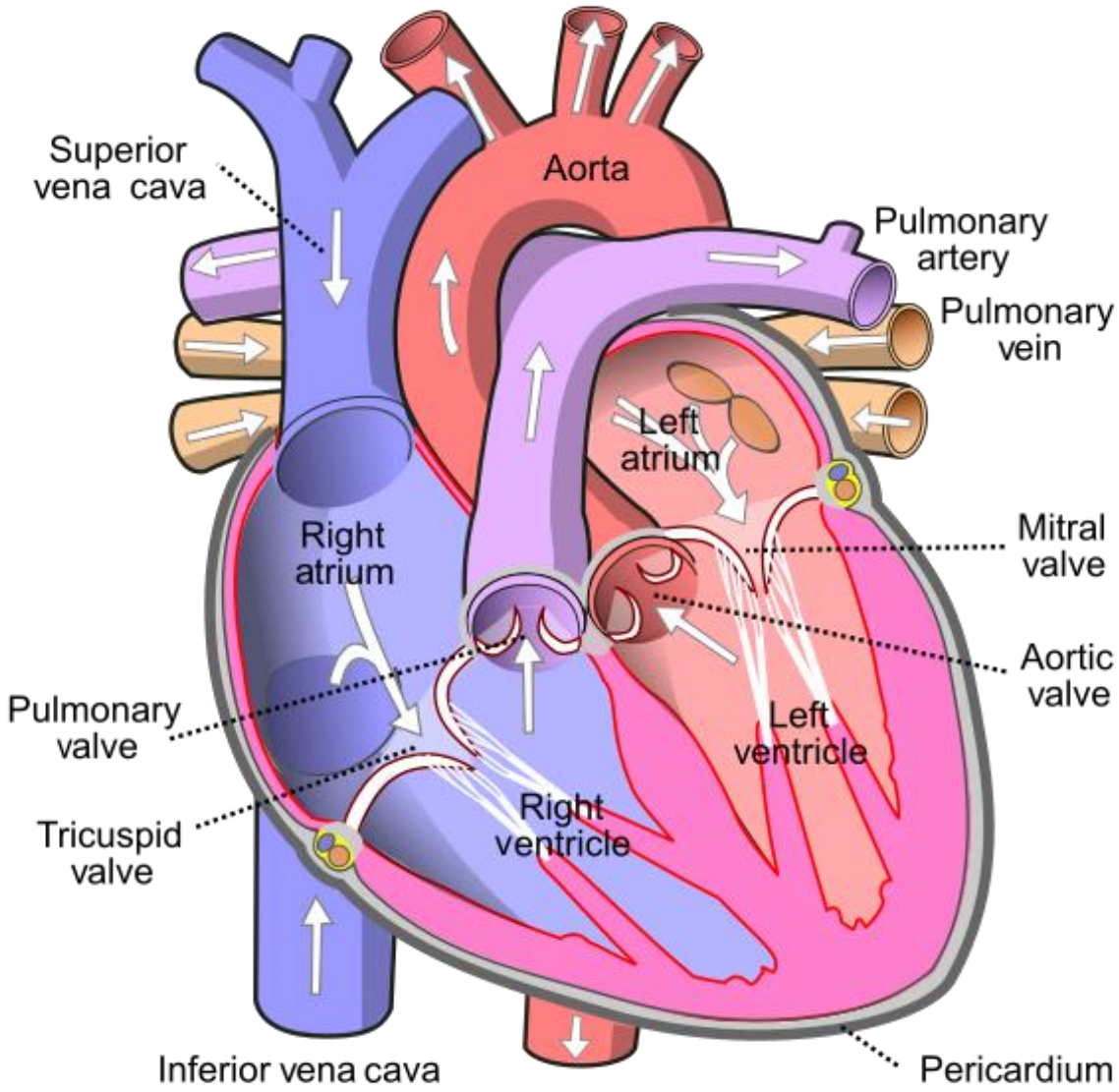
- Cell organelles (Role when excess water)
- Elements (Treatment of cancer)
- Diseases (Antibiotic of virus)
- Plant tissue (Dead cell)
- Prokaryotic organism (Membrane)
- Cartilage not found in organ
- Human eye (Image formation organ)
- Reproduction (Male reproductive system)
- Biodiversity

CELL ORGANELLES AND ITS FUNCTIONS

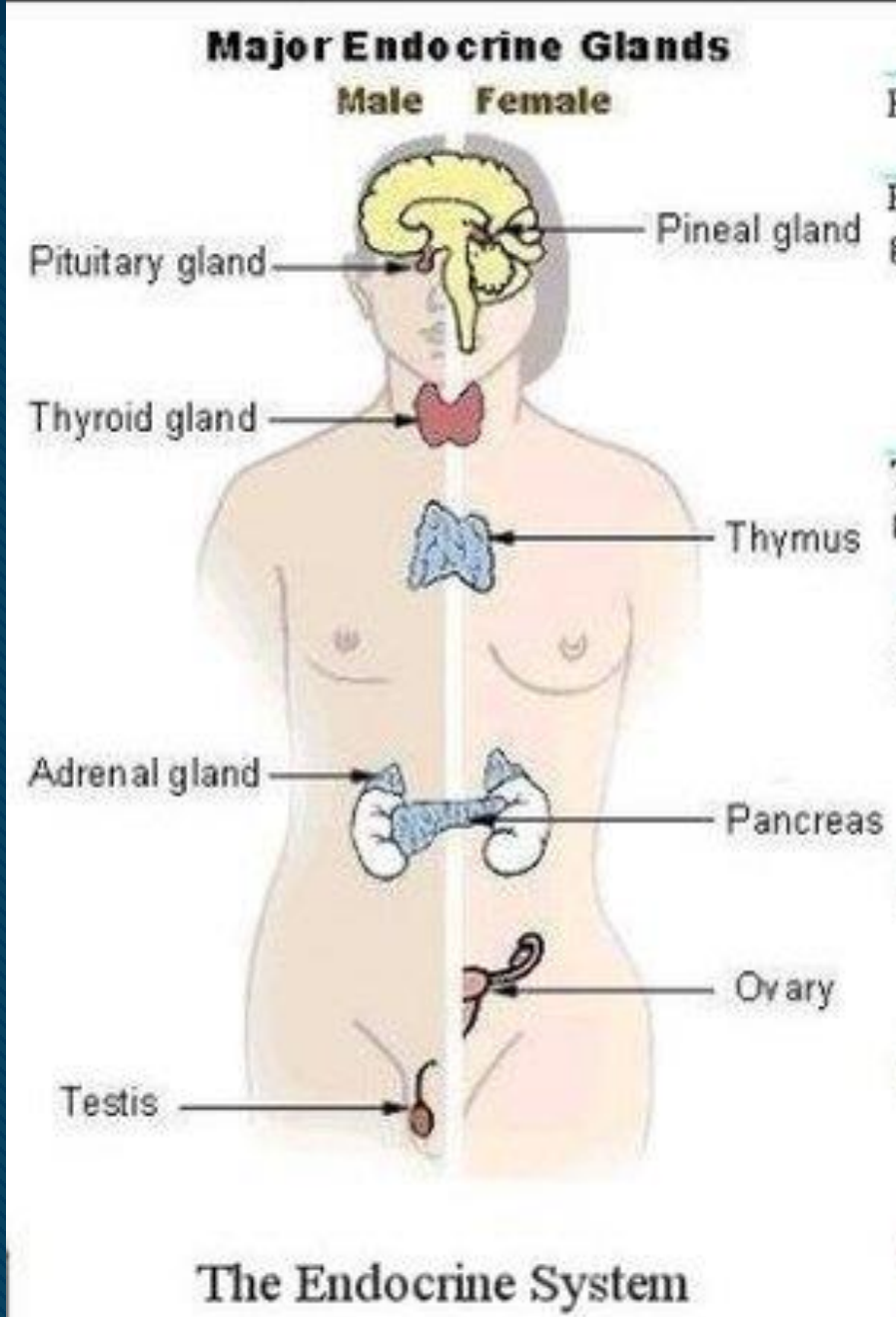




CIRCULATORY SYSTEM



ENDOCRINE GLANDS



The Endocrine System

Gland	Hormones produced	Effect of Hormone
Pineal gland	Melatonin	Affects reproductive development and daily physiologic cycles.
Pituitary gland	Growth hormone	Controls growth of bones and muscles.
	Anti-diuretic hormone	Increases reabsorption of water in kidneys.
	Gonadotrophins	Controls development of ovaries and testes.
Thyroid gland	Thyroxine	Controls rate of metabolism and rate that glucose is used up in respiration, and promote growth.
Adrenal gland	Adrenaline	Prepares the body for emergencies: increases heart rate and rate and depth of breathing, raises blood sugar level so more glucose is available for respiration, diverts blood from gut to limbs.
Pancreas	Insulin	Converts excess glucose into glycogen in liver.
	Glucagon	Converts glycogen back to glucose in liver.
Ovaries	Oestrogen	Controls ovulation and secondary sexual characteristics.
	Progesterone	Prepares the uterus lining for receiving an embryo.
Testes	Testosterone	Controls sperm production and secondary sexual characteristics.
Thymus	Thymosin	Promotes production and maturation of white blood cells.

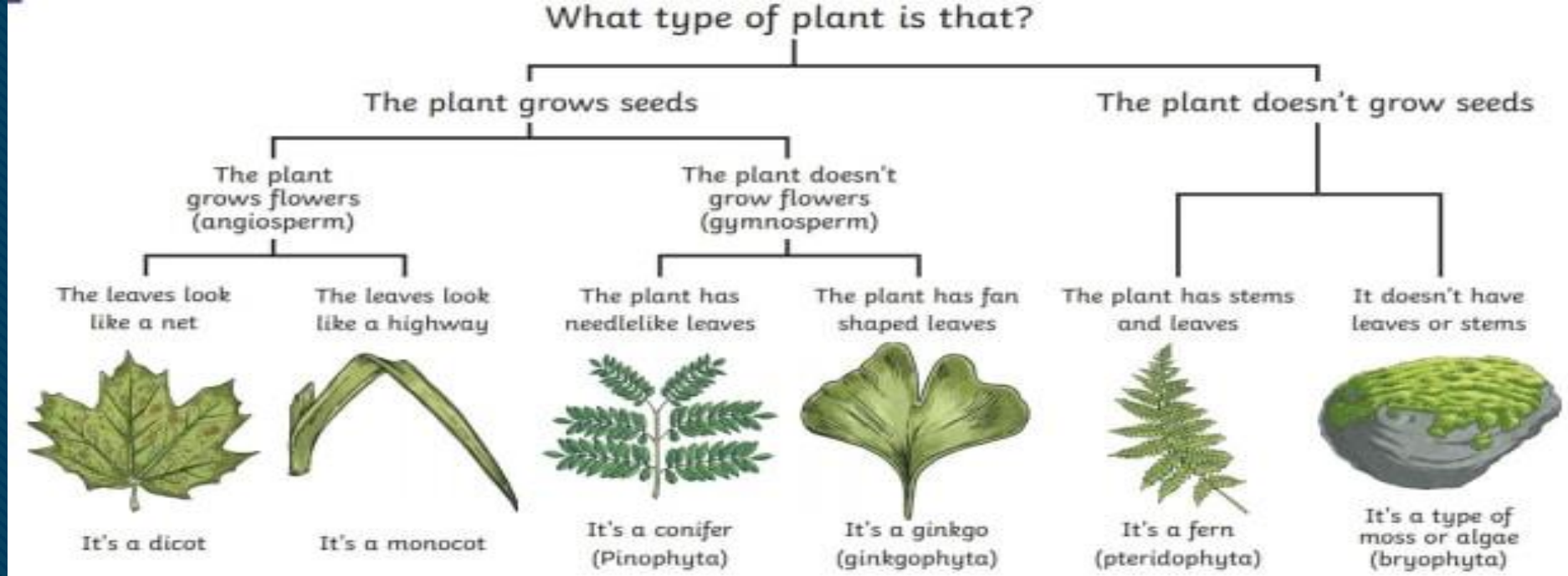
VITAMINS AND THEIR DEFICIENCY DISEASES

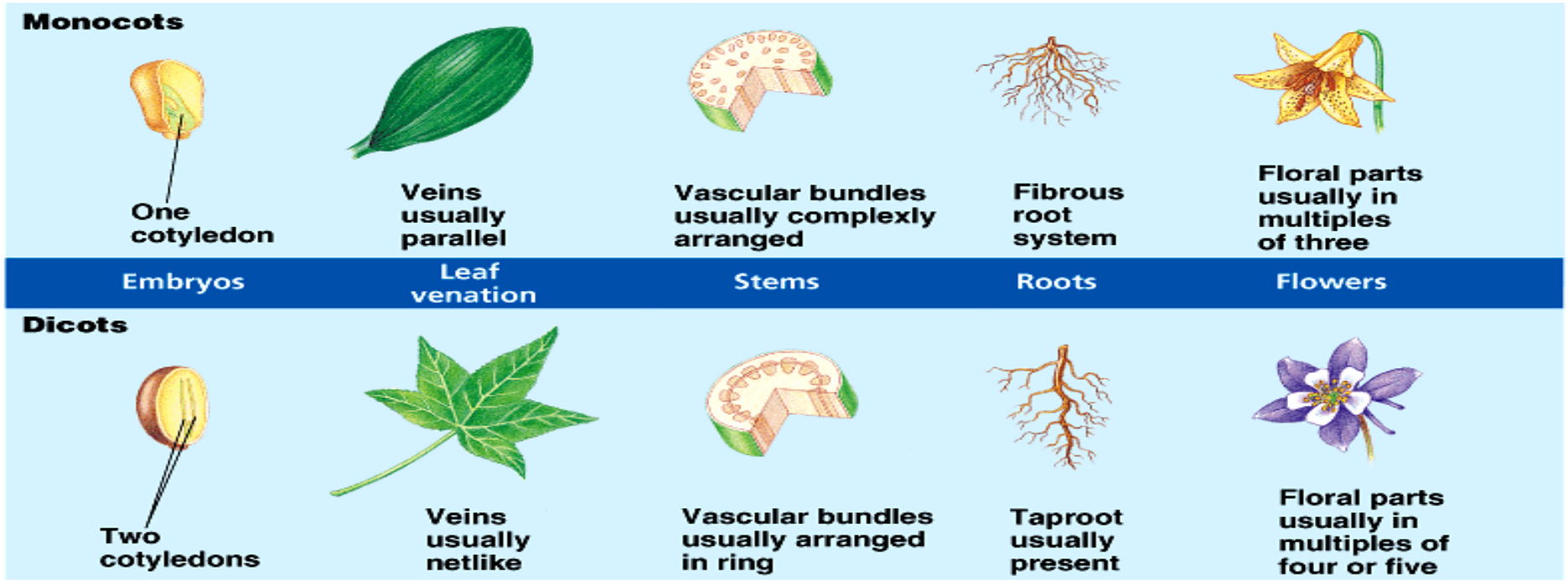
Vitamin/Mineral	Deficiency Disease/ Disorder	Available From
1. Vitamin A (Retinol)	Night blindness, poor vision	spinach, carrot, mangoes, butter
2. Vitamin B1 (Thiamine)	Beriberi, extreme weakness	eggs, meat, yeast, mushrooms, tomatoes
3. Vitamin B2 (Riboflavin)	Retarded growth, bad skin	green leafy vegetables, milk, yogurt, egg
4. Vitamin B3 (Niacin)	Diarrhea, dementia	mushroom, peanut, almond, lentil, barley
5. Vitamin B7 or Vitamin H (Biotin)	Dermatitis, Hair Loss	green leafy vegetables, most nuts, avocado, banana
6. Vitamin B12 (Cyanocobalamin)	Anaemia	fortified cereals, meat, egg
7. Vitamin C (Ascorbic Acid)	Scurvy, Swelling of Gums	lemon, oranges, avocado
8. Vitamin D (Calciferol)	Rickets & brittle bones in children which break and bend easily	milk, fish, liver-oil, mushrooms, sunlight
9. Vitamin E (Tocopherol)	Less Fertility	almonds, sunflower seeds, most nuts & seeds
10. Vitamin K (Phylloquinone)	Non-Clotting of Blood	green leafy vegetables, carrots

Minerals

11. Calcium	Brittle bones, tooth decay	milk, green leafy vegetables
12. Phosphorous	Bad teeth and bones	pulses, cereals, milk
13. Iodine	Goitre, enlarged thyroid gland	fish, table salt
14. Potassium	Cardiac Arrest	fish, bananas, mushrooms, dates, raisins
15. Copper	Low apetite, retarded growth	pulses and leafy vegetables
16. Iron	Anemia, lack of red blood cells	almonds, dates, green leafy vegetables, raisins

CLASSIFICATION OF PLANTS

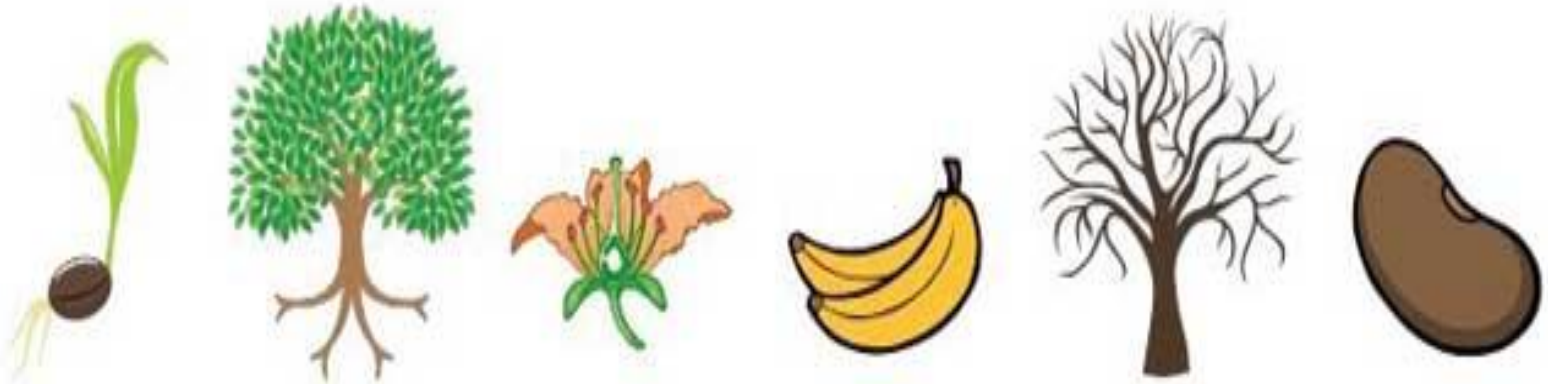




PLANT HORMONES

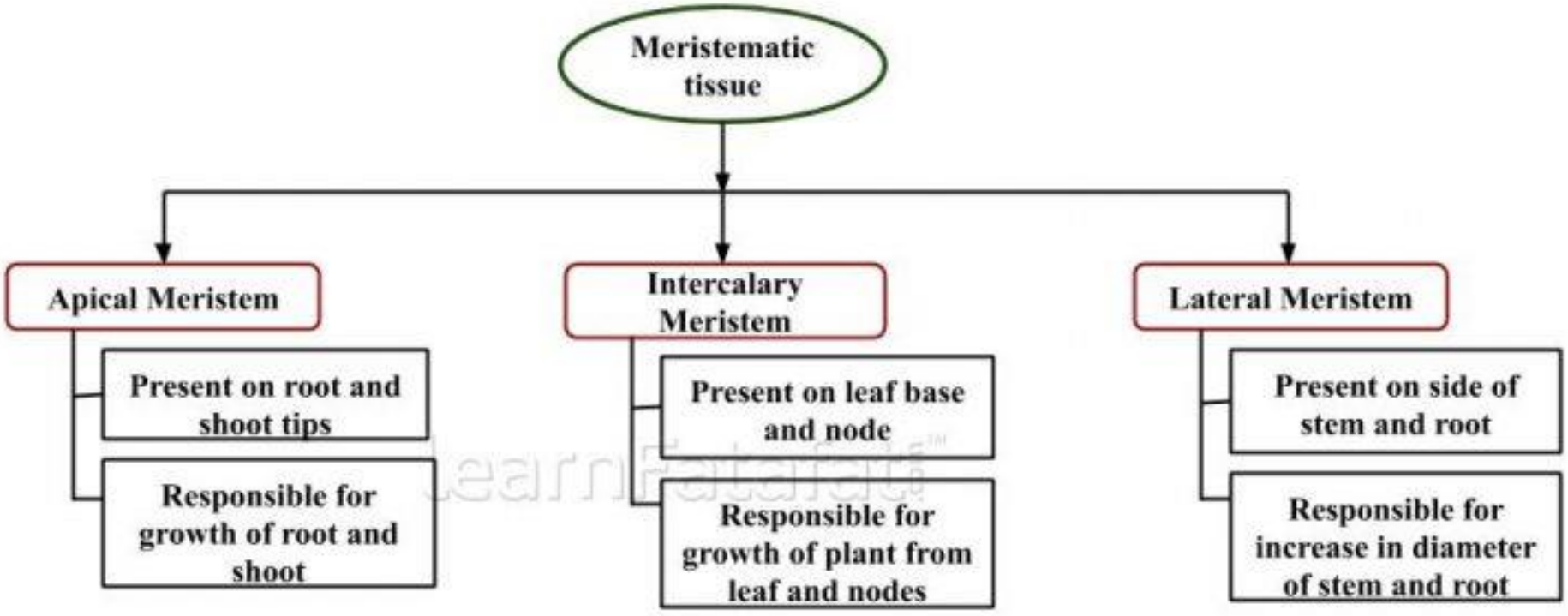
Phytohormones

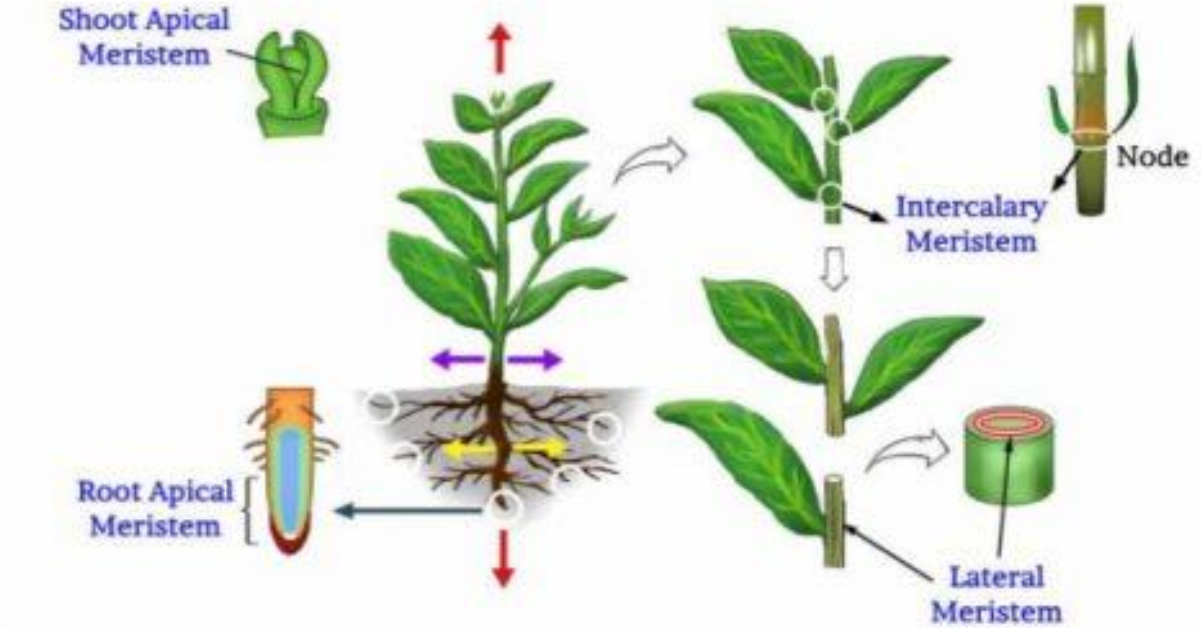
(Plant hormones)



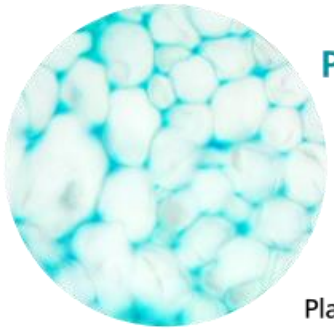
	Germination	Growth to Maturity	Flowering	Fruit Development	Abscission	Seed Dormancy
Gibberellin	✓	✓	✓	✓	✗	✗
Auxin	✗	✓	✓	✓	✗	✗
Cytokinins	✗	✓	✓	✓	✗	✗
Ethylene	✗	✗	✓	✓	✓	✗
Abscisic Acid	✗	✗	✗	✗	✓	✓

SIMPLE PLANT TISSUE



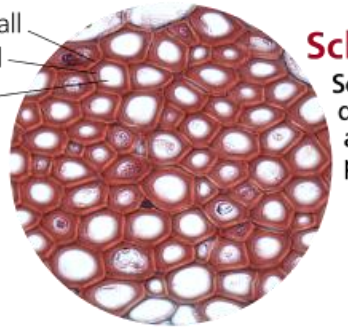


Plant permanent tissue



Phloem

Phloem transports sugars and other items. In angiosperms, **sieve-tube elements** contain the sugar solution. Sieve-tube cells are surrounded by various support cells .

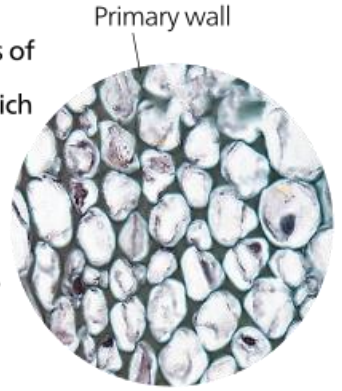


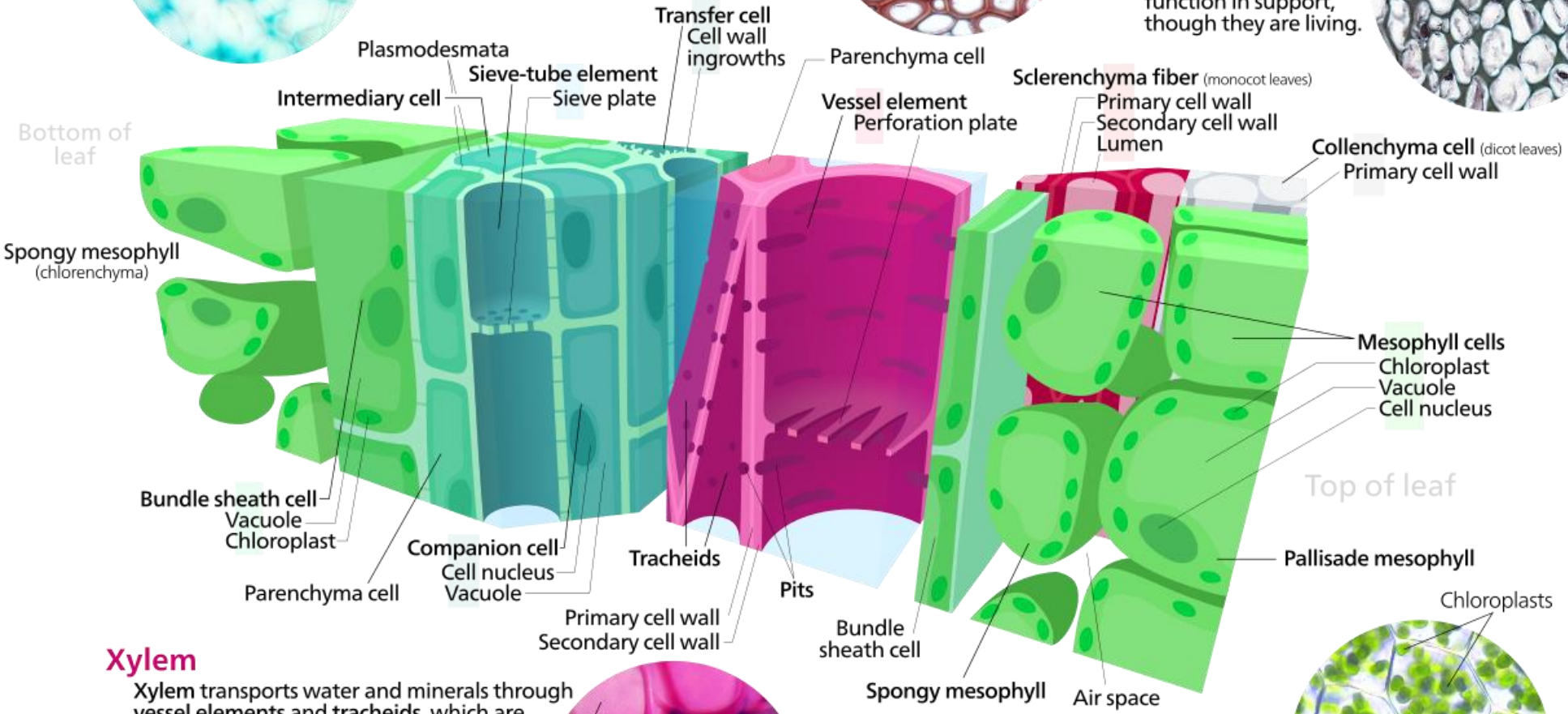
Sclerenchyma

Sclerenchyma mainly consists of dead cells that have **primary and secondary cell walls** which provide support.

Collenchyma

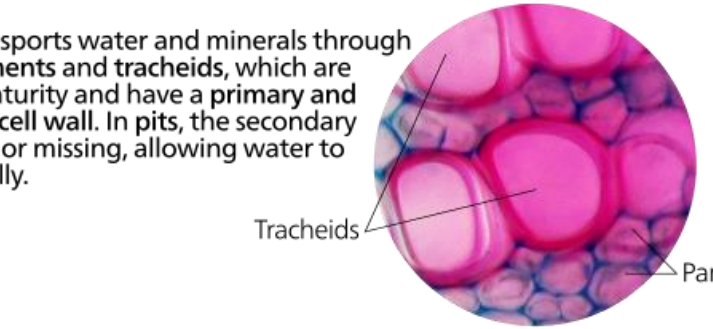
Collenchyma cells also function in support, though they are living.

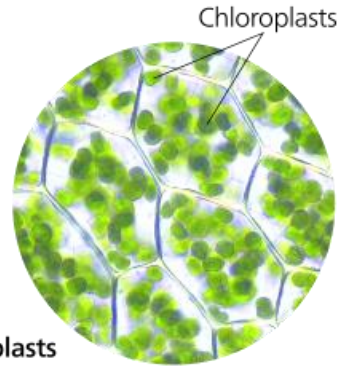




Xylem

Xylem transports water and minerals through **vessel elements** and **tracheids**, which are dead at maturity and have a **primary and secondary cell wall**. In **pits**, the secondary wall is thin or missing, allowing water to flow laterally.





Parenchyma

Parenchyma cells are un-specialized cells that carry out most of a plant's metabolism. Parenchyma cells with **chloroplasts** are called **chlorenchyma cells.**

Thank You