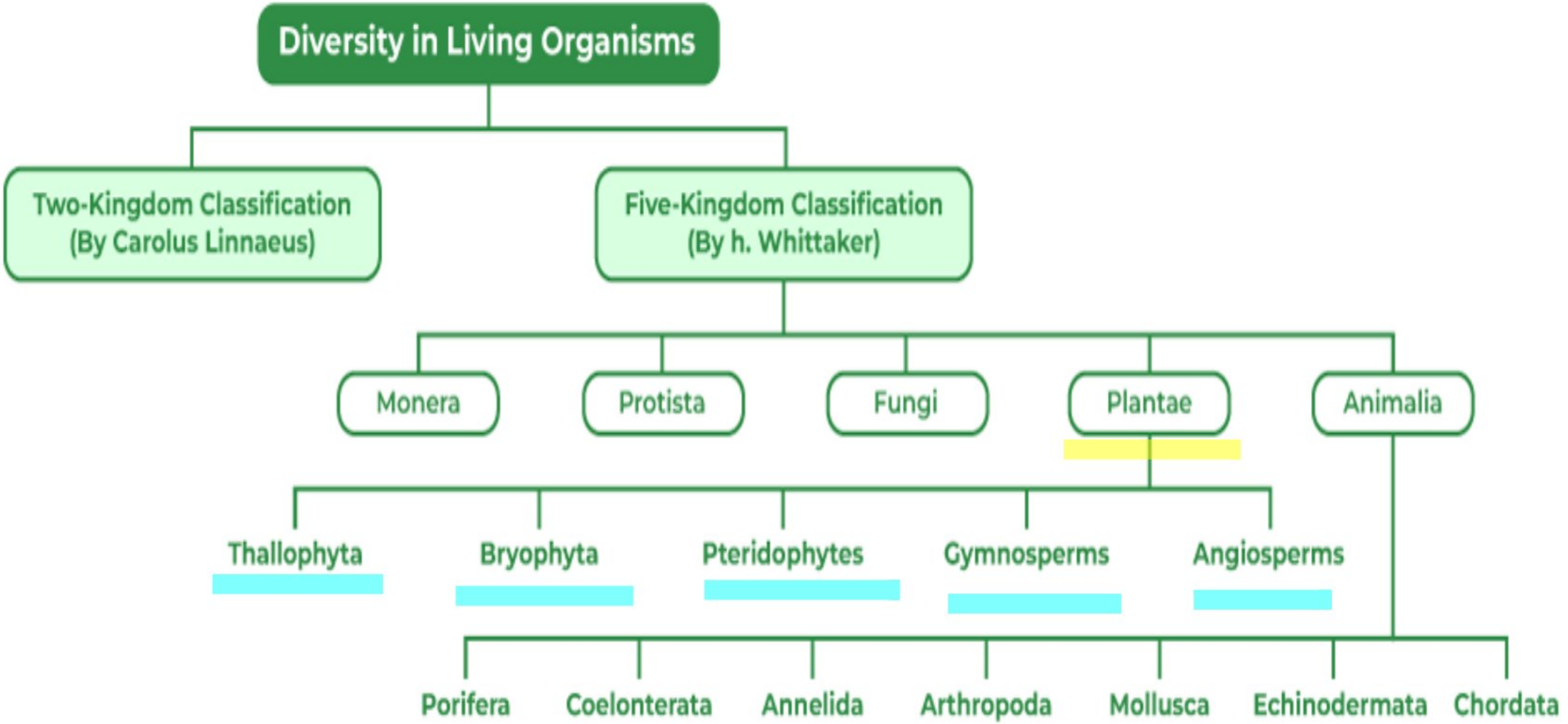
Plant kingdom

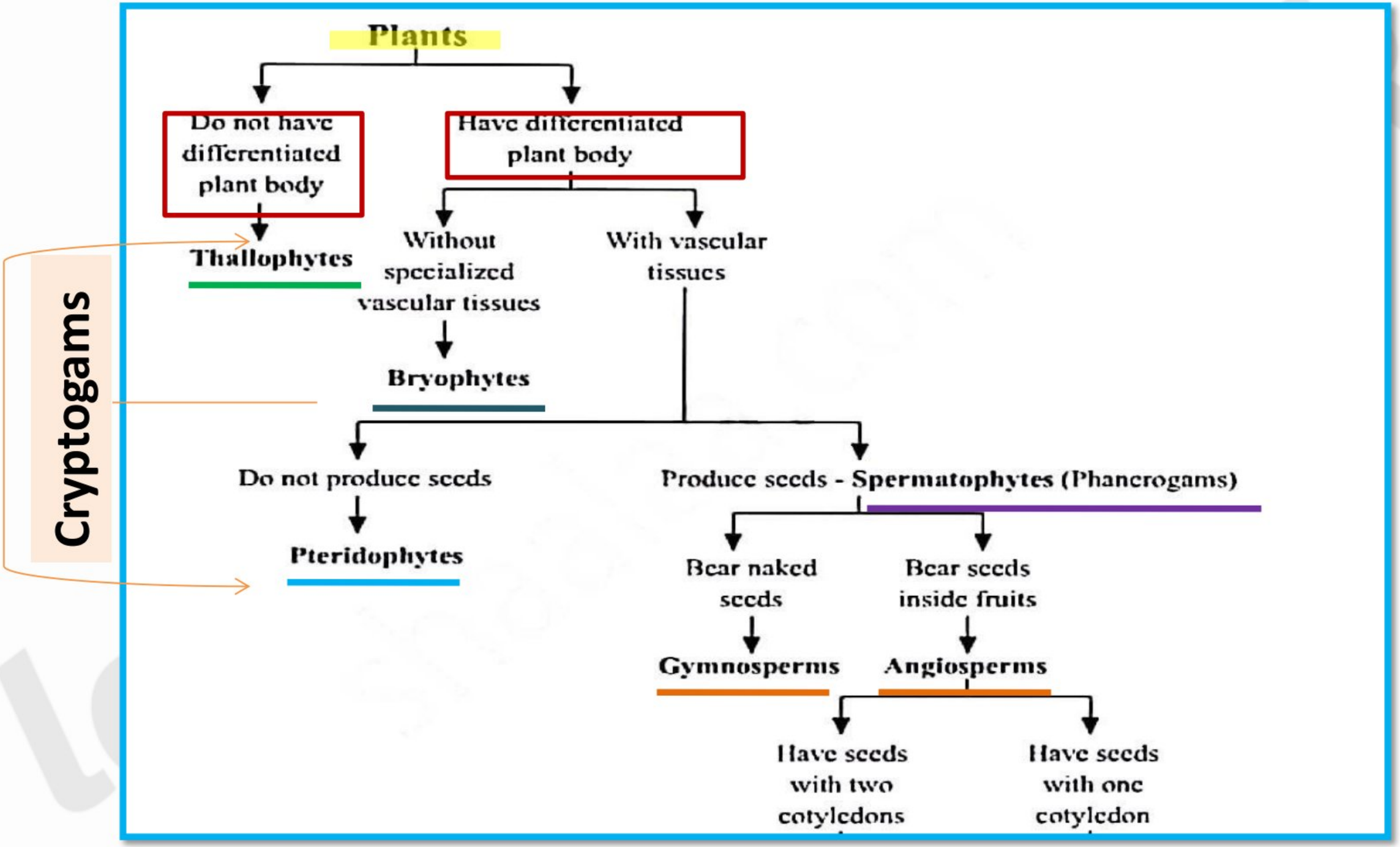

Diversity in Living Organisms
Two-Kingdom Classification (By Carolus Linnaeus)
Five-Kingdom Classification (By h. Whittaker)
Monera
Protista
Fungi
Plantae
Animalia
Thallophyta
Bryophyta
Pteridophytes
Gymnosperms
Angiosperms
Porifera
Coelonterata
Annelida
Arthropoda
Mollusca
Echinodermata
Chordata

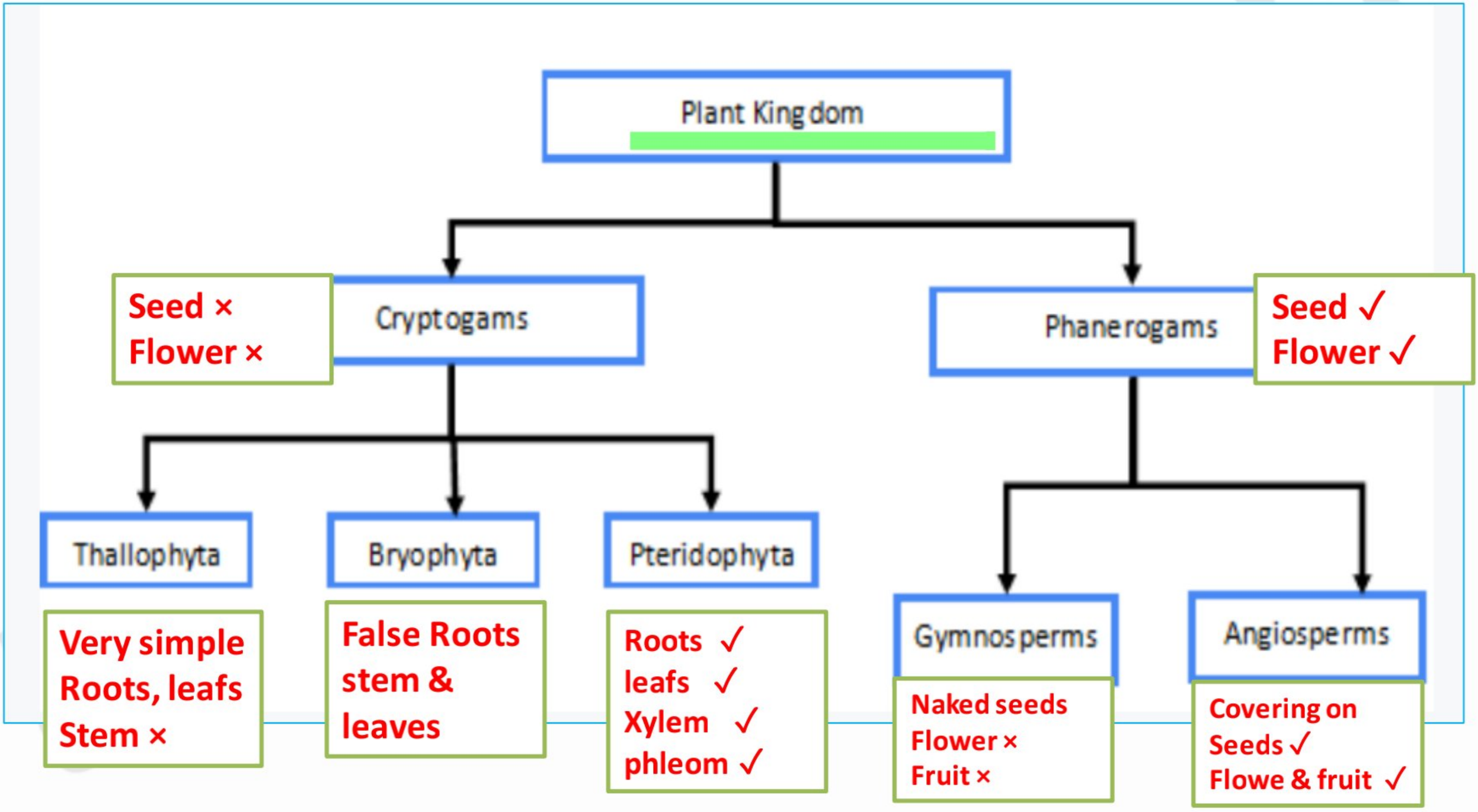
- **Two-Kingdom Classification-** was proposed by **Carolus Linnaeus**, who characterized organic entities into two kinds of **Plants** and **Animals.**

  दो जगत वर्गीकरण- **कैरोलस लिनिअस द्वारा प्रस्तावित किया गया था, जिन्होंने जैविक संस्थाओं को दो प्रकार के पौधों और जानवरों में विभाजित किया था।**

- **Five-Kingdom Classification–** was proposed by **H.Whittaker,** who isolated the life forms into **five unique classes**:

  पाँच जगत वर्गीकरण - एच.व्हिटेकर द्वारा प्रस्तावित किया गया था, जिन्होंने जीवन रूपों को पांच अद्वितीय वर्गों में अलग किया था:


Plants
Do not have differentiated plant body
Have differentiated plant body
Thallophytes
Without specialized vascular tissues
With vascular tissues
Bryophytes
Do not produce seeds
Pteridophytes
Produce seeds - Spermatophytes (Phanerogams)
Bear naked seeds
Bear seeds inside fruits
Gymnosperms
Angiosperms
Have seeds with two cotyledons
Have seeds with one cotyledon
Cryptogams


Plant Kingdom
Cryptogams
Seed ×
Flower ×
Phanerogams
Seed ✓
Flower ✓
Thallophyta
Bryophyta
Pteridophyta
Very simple
Roots, leafs
Stem ×
False Roots
stem &
leaves
Roots ✓
leafs ✓
Xylem ✓
phleom ✓
Gymnosperms
Naked seeds
Flower ×
Fruit ×
Angiosperms
Covering on
Seeds ✓
Flowe & fruit ✓

Plant kingdom

Plants- have cell wall(made of cellulose), Autotrophic

Cryptogams/क्रिप्टोगैम्स

•Reproduces by **spores**, without flowers or seeds.

- **Thaloophyta/थैलोफाइटा**
- **Bryophyta/ ब्रायोफाइटा**
- **Pteredophyta / टेरिडोफाइटा**

Phanerogams/फैनरोगैम्स

•known as **seed-bearing plants**

- **Angiosperms/आवृतबीजी**
- **Gymnosperms/ अनावृतबीजी।**

1. Thallophyta

- includes primitive forms of plant (साधारण पौधे के शरीर) life showing a simple plant body.
- **No stem, No Leaf & No Root** (न तना, न पत्ती और न जड़)
- Including unicellular to large **algae, fungi, lichens**. (शैवाल, कवक, लाइकेन)

Ex→ Algae

- Algae are **chlorophyll-bearing,** simple, **autotrophic**,.
- They occur in a variety of other habitats: soils, moist stones, and wood.
- Some Algae also occur in association with fungi (lichen) {कुछ शैवाल कवक (लाइकेन) के साथ भी पाए जाते हैं।}
- reproduce vegetatively by fragmentation (विखंडन)

❖ Algae divided into **3 classes**:

Chlorophyceae/क्लोरोफाइसी	Phaeophyceae/फियोफाइसी	Rhodophyceae/रोडोफाइसी
Green Algae EX→ Chlamydomonas, Ulothrix, spirogyra (क्लैमाइडोमोनस, उलोथ्रिक्स, स्पाइरोगाइरा)	Brown Algae EX→Fucus, Sargassum, ectocarpus. फ्यूकस, सरगासुम, एक्टोकार्पस।	Red Algae EX→ Polysiphonia, Gelidium, Porphyra, पॉलीसिफ़ोनिया, गेलिडियम, पोर्फिरा,

Q.) The members of **Phaeophyceae** are commonly called___ algae?

A. GREEN
B. BROWN
C. YELLOW
D. Red

- **FUNGI→ Eukaryotic** Organisms

- Includes microorganisms such as **mould** and **yeasts,** as well as **mushrooms.**
- They have **no chlorophyll**
- इसमें फफूंद और यीस्ट जैसे सूक्ष्मजीवों के साथ-साथ मशरूम भी शामिल हैं।उनमें कोई क्लोरोफिल नहीं होता

- **LICHEN→** The **symbiotic relationship** (सहजीवी संबंध) between algae and fungi is known as **lichen.**

❑ Bryophyta/ब्रायोफाइटा

- also called **amphibians** of the plant kingdom **(**उन्हें पादप साम्राज्य का उभयचर**)** because they are dependent on **water** for reproduction { so live on both **land** and **water**}

- They **lack true roots**, **stems** or **leaves (** उनमें वास्तविक जड़ों, तनों या पत्तियों का अभाव होता है।) .
- Does not have **vascular Tissue.**

- The main plant body of the **bryophyte** is a **haploid (**अगुणित**)**
- It **produces gametes** (युग्मक), hence is **called a Gametophyte.**

- **Ex→ Liverworts (**Marchantia**), Mosses, hornwort, Sphagnum**
  - **उदाहरणार्थ → लिवरवॉर्ट्स (मार्चेंटिया), मॉसेस, हॉर्नवॉर्ट,**
  - **स्फाग्नम**

❑ Pteridophyta/ टेरिडोफाइटा

term 'Pteridophyta' was proposed by **Haeckel**.

- well-differentiated structures such as roots, stems, and leaves as well as the vascular system / जड़, तना और पत्तियों के साथ-साथ संवहनी प्रणाली जैसी अच्छी तरह से विभेदित संरचनाएँ

- Evolutionarily, Pteridophytes are the first terrestrial plants to possess vascular tissues– **xylem** and **phloem** / टेरिडोफाइट्स पहले स्थलीय पौधे हैं जिनमें संवहनी ऊतक- जाइलम और फ्लोएम होते हैं, called as the first **Tracheophytes**

- know as → Botanical snakes, or snakes of the plant kingdom{due to the fact that they resemble reptiles सरीसृपों से मिलते जुलते. Just like reptiles were the **first land animals, Pteridophytes** were also the **first land plants**}

- USED → for **Medicinal Purposes**.

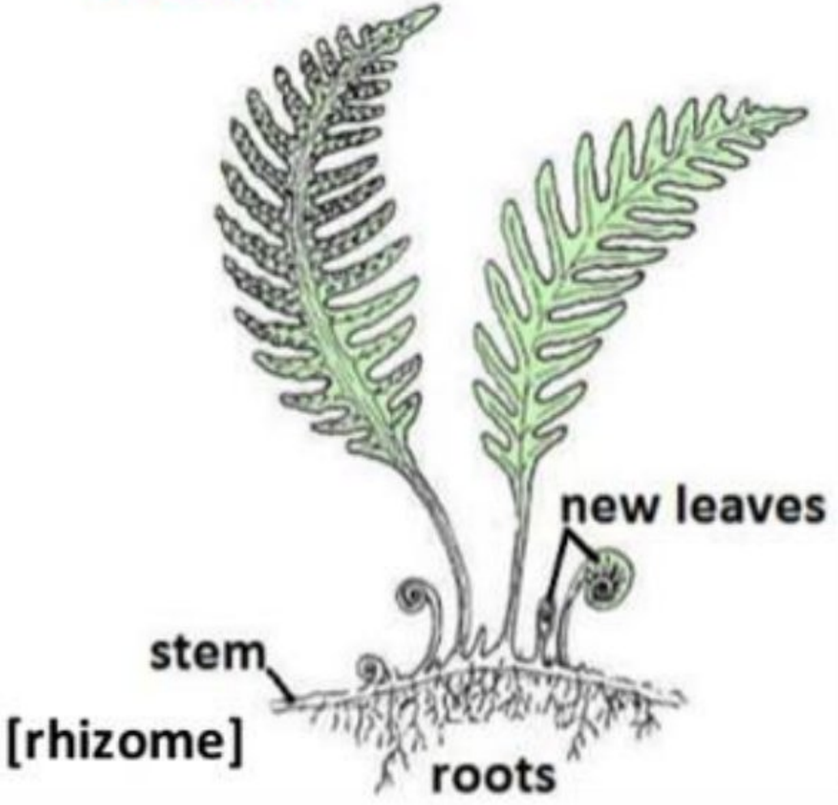
EX→ FERNS, MARSELIA, Selaginella, Adiantum ,Equisetum, OSMUNDA

फ़र्न्स, मार्सेलिया, सेलाजिनेला, एडियंटम, इक्विसेटम, ओसमुंडा

Pteridophytes (ferns) have:

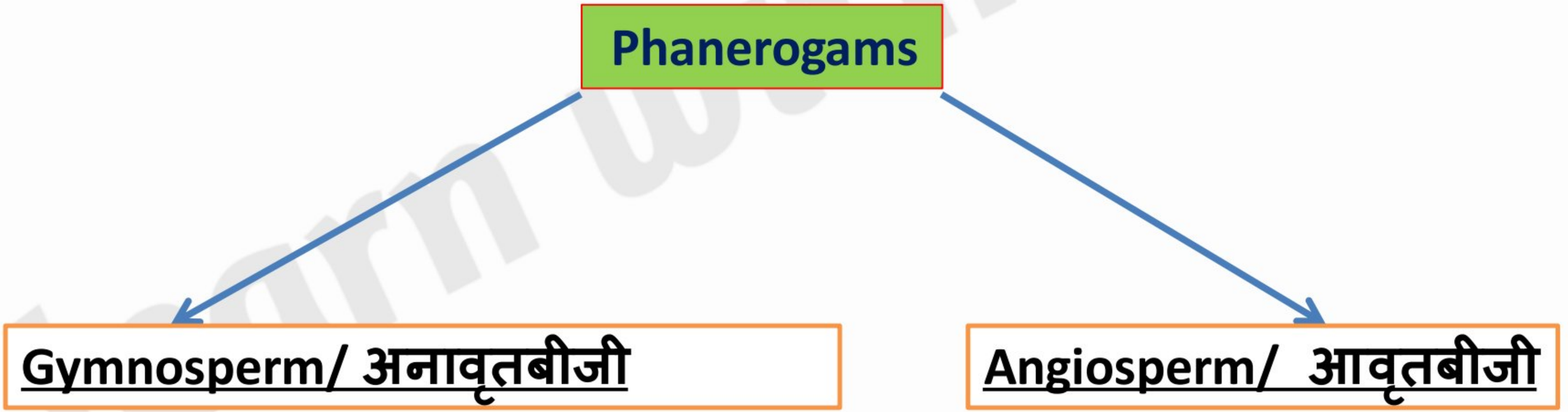
- ✓ Roots
- ✓ Stems
- ✓ Leaves

because they have vascular tissue



❑ Phanerogams/फैनरोगैम्स

- Phanerogams are known as seed-bearing plants which include **Angiosperms** and **Gymnosperms**. Phanerogams are more advanced than Cryptogams
  (फ़ैनरोगैम क्रिप्टोगैम से अधिक उन्नत हैं।



✓ Gymnosperm/ अनावृतबीजी

- Gymnosperms are plants in which → the **seeds(ovules)** are not enclosed/covered by the **ovary wall**, both before and after fertilization/ जिनमें निषेचन से पहले और बाद में बीज़ (अंडाशय) अंडाशय की दीवार से घिरे/कवर नहीं होते हैं। Seeds are **NAKED**

Zamia Pygmaea

- They are woody and perennial (बारहमासी), forming either bushes or trees (झाड़ियाँ या पेड़)
- Some are very large (**Sequoia sempervirens** सेकोइया सेपरविरेन्स or coast Redwood) and others are **very small (Zamia pygmaea or** ज़ामिया पाइग्मिया **).**

- Stem may be **unbranched (Cycas)** or **branched (Pinus).**
- Root is →a Taproot.

- **EX→ Cycas, Pinus, Araucaria,deodar etc.**

साइकस, पाइनस, अरौकेरिया, देवदार आदि।

Cycas

Pinus

✓ Angiosperms

- are **seed-bearing** plants with a **well-differentiated plant body**/ एक अच्छी तरह से विभेदित पौधे के शरीर , Seeds are covered

- In angiosperms, the seeds are enclosed by fruits/ पौधों में बीज फलों से घिरे रहते हैं

- **Most microscopic Wolfie** (0.1cm) to tall tree **Eucalyptus** (more than 100m)
- **Example:** Rafflesia, Eucalyptus, Orchids (रैफलेसिया, नीलगिरी, ऑर्किड)

Eucalyptus

Points to Remember

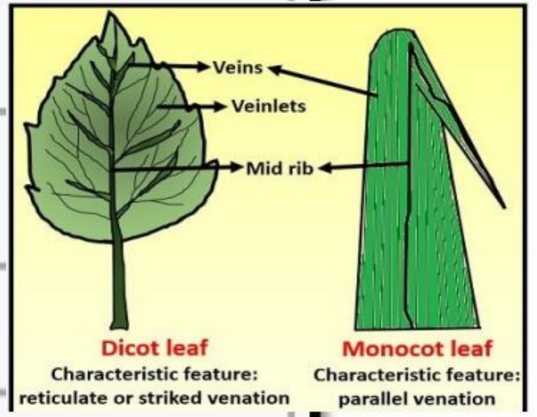
The largest flower **is Rafflesia** which belongs to the **angiosperm.**
The smallest **angiosperm tree is Wolfie** and the **largest tree** is the **Eucalyptus tree.**

Rafflesia

Wolfie

They are divided into two classes: **Monocotyledons** (एकबीजपत्री) & **Dicotyledons** (द्विबीजपत्री)

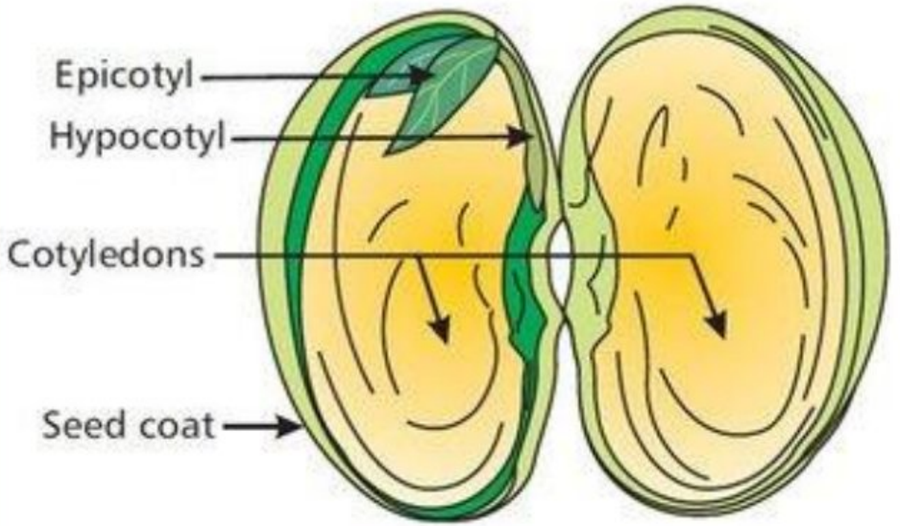
Monocotyledons	Dicotyledons
It contains only one cotyledon. 	It contains two cotyledons 
It has parallel venation	It has reticulate venation
Monocots have Fibrous root system	Dicots have Tap root system.
It has closed vascular bundlea.	It has open vascular bundles.
For Example:- Banana, Wheat, Rice	For Example:- Gram, Mango, Apple



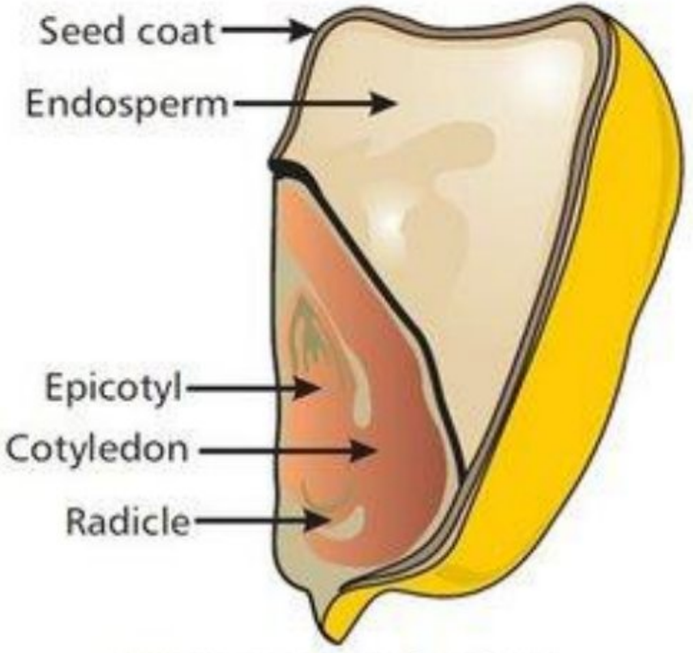
Usually 3 three floral parts

Usually 4 or 5 floral parts

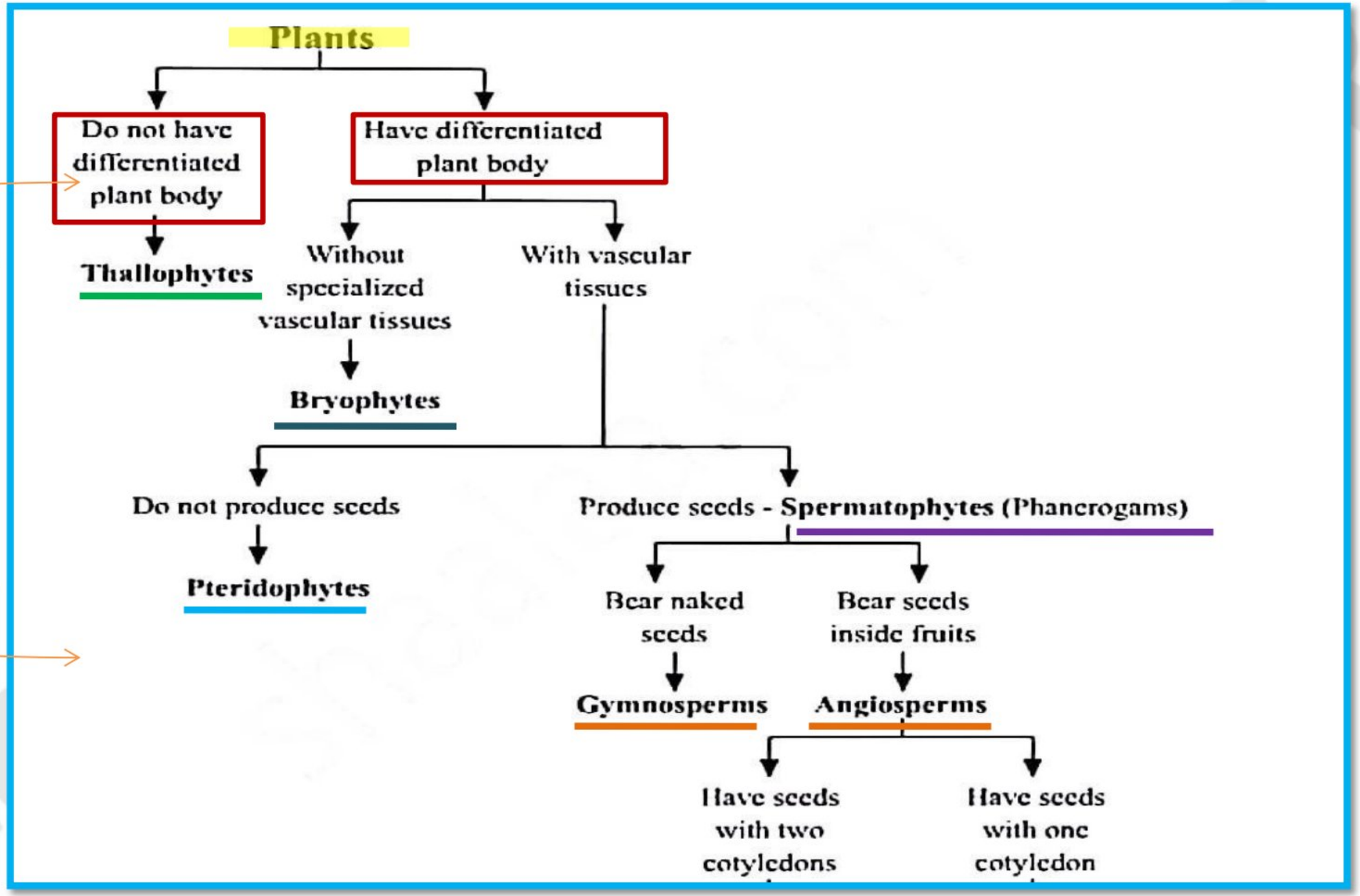
Monocot vs Dicot seed



Dicotyledon



Monocotyledon


Plants
Do not have differentiated plant body
Have differentiated plant body
Thallophytes
Without specialized vascular tissues
With vascular tissues
Bryophytes
Do not produce seeds
Produce seeds - Spermatophytes (Phanerogams)
Pteridophytes
Bear naked seeds
Bear seeds inside fruits
Gymnosperms
Angiosperms
Have seeds with two cotyledons
Have seeds with one cotyledon
Cryptogams

1.Q. Flowers less plants are termed as_

फूल रहित पौधों को कहा जाता है_

D

A. Phanerogams
B. Bryophytes
C. Thallophytes
D. Cryptogams

2.Q. Brophytes are often called as amphibian plant because they?

ब्रोफाइट्स को अक्सर उभयचर पौधा कहा जाता है क्योंकि वे ?

A. Appear like frog
B. Are found both in water and on land
C. Do not have habitat preference
D. Can eat insects

B

3.Q. FERNS BELONGS TO WHICH DIVISION OF PLANTS?

फ़र्न्स बेलॉन्स पौधों के किस प्रभाग से संबंधित हैं?

D

A. Phanerogams
B. ANGIOSPERMS
C. Thallophytes
D. Pteridophytes

4.Q. WHICH OF THE FOLLOWING IS NOT AMONG THE 3 MAIN CLASSES OF ALGAE?

निम्नलिखित में से कौन सा शैवाल के 3 मुख्य वर्गों में से नहीं है

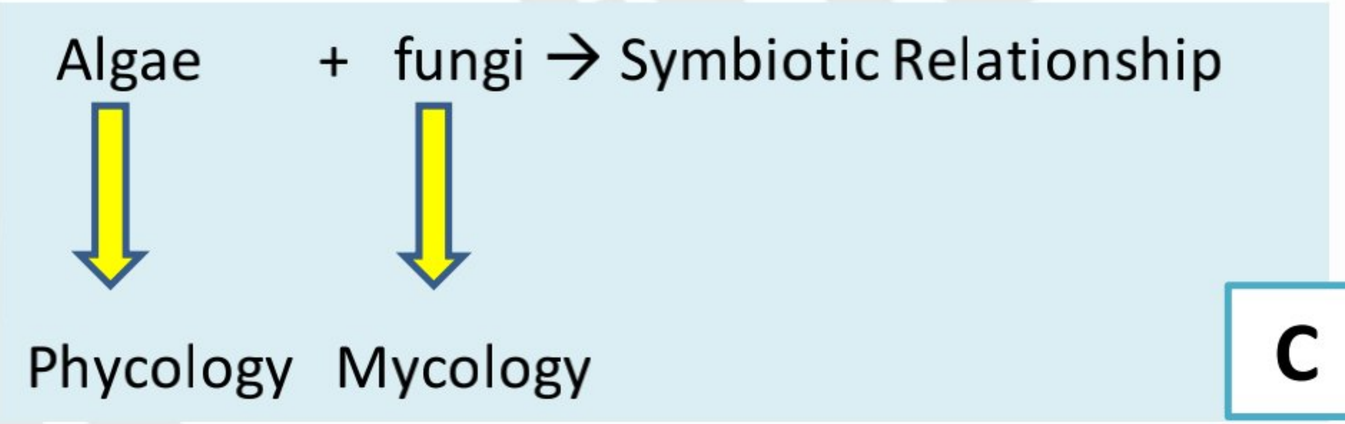
D

A. CHLOROPHYCEAE
B. RHODOPHYCEAE
C. PHAEOPHYCEASE
D. GYMNOSPERM

5.Q. _____are chlorophyll bearing, simple, thalloid, autotrophic and largely aquatic (both fresh water and marine) organisms.

____क्लोरोफिल युक्त, सरल, थैलॉयड, स्वपोषी और बड़े पैमाने पर जलीय (ताजे पानी और समुद्री दोनों) जीव हैं।

A. Pteridophytes
B. Bryophytes
C. Algae
D. Gymnosperms



C

6.Q. Bryopytes are also called __of the plant kingdom/ ब्रायोफाइट्स को पादप जगत का__ भी कहा जाता है।

A. Mammals
B. Amphibians
C. Reptiles.
D. Insecta.

B

7.Q. Which of the plant groups needs both land and water to complete their life cycle?

किस पादप समूह को अपना जीवन चक्र पूरा करने के लिए भूमि और पानी दोनों की आवश्यकता होती है?

A. Tracheophyta
B. Pteridophyta
C. Thallophyta
D. Bryophyta

D

8.Q. A plant that has seeds but no flowers and fruits?

एक ऐसा पौधा जिसमें बीज तो होते हैं लेकिन फूल और फल नहीं?

A. Bryophytes
B. Gymnosperms
C. Mosses
D. Pteridophytes

B

9.Q. Most primitive vascular plants?

सर्वाधिक आदिम संवहनी पौधे?

A. Mosses
B. Cycads
C. Kelps
D. Ferns

D

10.Q. Plants that possess spores and embryo but lack vascular tissues and seeds?

ऐसे पौधे जिनमें बीजाणु और भ्रूण होते हैं लेकिन संवहनी ऊतकों और बीजों की कमी होती है?

A. Rhodophyta
B. Bryophyta
C. Pteridophyta
D. Phaeophyta

B

11.Q. Which one is not an exception in angiosperms?

आवृतबीजी पौधों में कौन सा अपवाद नहीं है?

A. Double fertilization
B. Secondary growth
C. Presence of vessels
D. Autotrophic nutrition

A

12.Q. Pteridophytes differ from mosses in ?

टेरिडोफाइट्स मॉस से भिन्न होते हैं ?

A. Vascular tissue absent
B. Xylem is present and phloem is absent
C. Only xylem is present
D. Well developed vascular tissue

D

13.Q. Plants having vascular tissue without seeds ?

बीज रहित संवहनी ऊतक वाले पौधे ?

A. Angiosperm
B. Pteridophytes
C. Bryophytes
D. Gymnosperms

B

14.Q. Name the tissue that transport food to various parts of a plant?

उस उत्तक का नाम बताइए जो किसी पौधे के विभिन्न भागों में भोजन पहुंचाता है ?

A. Phloem
B. Xylem
C. Parenchyma
D. Scalene kaima

Xylem → WATER

A

15.Q Which of the following is called green algae?

निम्न में से किसे हरित शैवाल भी कहा जाता है ?

A. Phaeophycae

B. Porphyridium

C. Chlorophyceae

D. Rhodophyceae

C

16.Q. Pine is an example?

चीड़ उदाहरण है ?

A. Pteridophyta

B. Angiosperm

C. Gymnosperm

D. Monycotyledon

C

17.Q. The study of fungi is called?

कवक का अध्ययन कहलाता है?

A. Virology
B. Morphology
C. Mycology
D. kalology

The study of algae is called → **phycology** or **Algology**

C

18.Q. Which of the following is <u>not correct?</u>

A. Members of Chlorophyceae are called green algae
B. Members of Phaeophyceae are called red algae.
C. The members of Rhodophyceae are called red algae.
D. Members of Phaeophyceae are called brown algae.

B

19.Q. Name the largest angiosperm flower?

A. Wolfiea
B. Rafflesia
C. Eucalyptus
D. Zamia Pygmaea

B

20.Q. ferns belong to which division of plants to ?
फर्न्स पौधों के किस भाग में आते हैं ?

A. Gymnosperms
B. Angiosperms
C. Pteridophyta
D. Bryophyta

C

21.Q. Vascular bundles are absent in ___?

संवहनी बंडल___ में अनुपस्थित रहते हैं ?

A. Bryophyta
B. Pteridophyta
C. Gymnosperm
D. Angiosperms

A

22.Q. Which is use as an air pollution indicator?

वायु प्रदूषण शिक्षक के रूप में निम्नलिखित में से कौन काम आता है?

A. Algae
B. Lichen
C. Fungi
D. Bacteria

Lichens are a relationship between → algae and fungi

B

23.Q. Where do plants synthesize Protein From?

पौधे प्रोटीन संश्लेषण कहां से करते हैं ?

A. Fatty acids

B. Sugar.

C. Amino acid

D. water

C

24.Q. What are the five main types of hormones in plants?

पौधों में हारमोंस की पांच मुख्य शैली कौन सी है ?

A

A. Auxin, Gibrelin, Cytokinin , Abscisic acid and Ethylene

B. Auxin, amino acid, Abscisic acid and Ethylene , Gibrelin

C. Auxin, amino acid, Abscisic acid and Ethylene , gibrelin

D. Auxin, cytokinin, Abscisic acid and Ethylene , amino acids

25.Q. The development of a fruit without fertilization is called?

निषेचन के बिना पहल के विकास को - - - कहा जाता है ?

A. Parthenocarpy

B. Gametogamy

C. Apomixis

D. hybridogenesis

A

Q.26

Select the correct statement from the following :

Plants of wheat and grass have

1. same type of roots but different type of leaf venation.
2. same type of roots and leaf venation.
3. different type of roots and leaf venation.
4. different type of roots but same type of leaf venation
5. None of the above/More than one of the above.

2

Q.27 Various types of medicines are prepared from pleasant smelling plants called

1. herbs
2. shrubs
3. climbers
4. creepers
5. None of the above/More than one of the above.

1

Q.28 Which of the following is not an insectivorous plant?

1. Drosera
2. Monotropa
3. Cuscuta
4. More than one of the above.
5. None of the above

4

Q. 29

Consider the following class of plants :

A. Bryophyta

B. Gymnosperms

C. Pteridophyta

D. Thallophyta

Classes of plants having specialised tissues for the conduction of water are

1. A and D only
2. B and C only
3. A, B and C only
4. B, C and D only

2

Q. 30

_____ is a unisexual flower

1. Papaya
2. Mustard
3. *Hibiscus*
4. Sunflower
5. None of the above

The flower that has only male or female reproductive parts i.e., either stamens or carpels (pistil) are present are unisexual flowers. Examples of unisexual flowers are Bitter gourd, papaya, pumpkin, and cucumber.

1

Q. 31

Which of the following is an example of a green algae?

1. Laminaria
2. Sargassum
3. Chlamydomonas
4. Fucus

3

Q.32

Plants are divided into _____ groups.

1. 6
2. 7
3. 5
4. 4

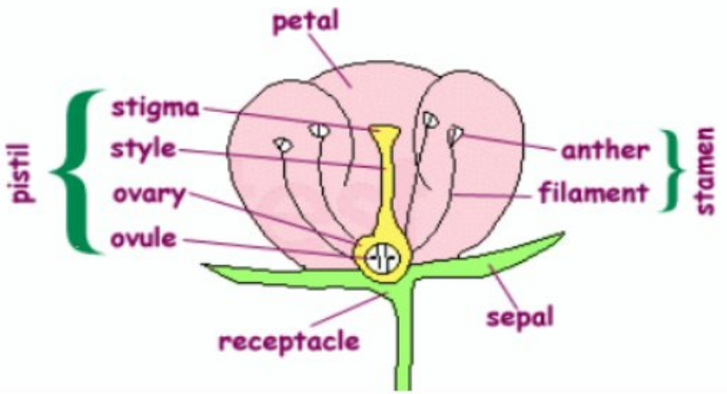
3

Q. 33

Which of the following part of a flower is not a reproductive organ?

1. Stigma
2. Style
3. Anther
4. Sepal

- **<u>The sepal</u>** is not a reproductive organ of a flower.
- The sepal is an accessory part of the flower.
- The stamen is the **male reproductive part.**
- The stamen consist of **anther and filament.**
- The pistil is the **female reproductive part.**



4

Q.34 Amarbel (Cuscuta) is an example of:

1. Autotroph
2. Parasite
3. Saprotroph
4. Host

2

Q. 35 _____ is a monocot plant.

1. Carrot
2. Daisy
3. Garlic
4. Rose

3

Q.36

_____ is a unisexual flower

1. Papaya
2. Mustard
3. *Hibiscus*
4. Sunflower

1

Q.37

Which of the following divisions of plants does NOT have a well-differentiated body?

1. Bryophyta
2. Thallophyta
3. Gymnosperms
4. Pteridophyta

2

Q.38 The essential organs in a flower for reproduction are:

1. The sepal and stamen
2. The stamen and pistil
3. The sepal and petal
4. The petal and pistil

2