

# NEET- 2020- 45 Days Crash Course



Date : 27<sup>th</sup> July 2020



PLANT KINGDOM QUIZ



NEET QUESTIONS

## quiz

Select the correct statement.

- (A) Sequoia is one of the tallest trees
- (B) The leaves of gymnosperms are not well adapted to extremes of climate
- (C) Gymnosperms are both homosporous and heterosporous
- (D) Salvinia, Ginkgo and Finns all are gymnosperms

## answer

### Ans [A]

Sequoia sempervirens is the tallest gymnosperm, The leaves of gymnosperms are well adapted to extremes of climate. This is the reason for gymnosperm to flourish in cold areas where instead of rain, snow is the source of water. Gymnosperms are heterosporous i.e., produce two different kinds of spores-microspores and megaspores. Salvinia is an aquatic pteridophyte.

## quiz

In bryophytes and pteridophytes, transport of male gametes requires

- (A) Birds
- (C) Wind

- (B) Water
- (D) Insects

*water is required  
for fertiliz*

*Zooidogamy*

## answer

### Ans [B]

The sperms of bryophytes and pteridophytes are flagellated and hence require an external supply of water to reach archegonia.

## quiz

Which one of the following statements is wrong?

- (A) Chlorella and Spirulina are used as space food
- ✓ (B) Mannitol is stored food in ~~Rhodophyceae~~
- (C) Algin and carrageenan are products of algae
- (D) Agar-agar is obtained from Gelidium and Gracilaria

→ of Brown algae ✓

answer

**Ans [B]**

Laminarin and mannitol are food reserves of brown algae or Phaeophyceae.

Rhodophyceae algae store food in the form of floridean starch.

## quiz

In which of the following, gametophyte is not independent free living?

- (A) Pteris  
(B) Pinus  
(C) Funaria  
(D) Marchantia

*gametophyte dominant*

*gametophyte is  
not  
nutritionally  
dependent*



## answer

### Ans [B]

In gymnosperms (like Finns), the male and female gametophyte do not have an independent free living existence. They remain within the sporangia retained on the sporophytes female gametophyte (within mega sporangium) and male gametophyte (within microsporangium)

## quiz

Male gametes are flagellated in

- (A) Ectocarpus (B) Spirogyra  
(C) Polysiphonia (D) Anabaena
- Brown alga* } Non motile gametes
- ↳ Red algae & Spirogyra, BGA →  
have no motile stage

## answer

### Ans [A]

Ectocarpus produces biflagellate gametes. Anabaena is a cyanobacteria and does not reproduce sexually. Spirogyra produces non-flagellated male gamete during conjugation, where entire cell content functions as gamete. Polysiphonia also produces nonflagellated spermatia.

## quiz

Which of the following is responsible for peat formation?

(A) Marchantia

(B) Riccia

(C) Funaria

✓ (D) Sphagnum

peat moss

**Ans [D]**

Among the bryophytes Sphagnum accounts by far the most important place economically. It is popularly called bog moss or peat moss. It is perennial and its growth continues year after year. Older portions undergo death but do not decompose due to secretion of acid that accounts for the antibacterial and antifungal actions. The increasing mass of dead remains accumulate year after year and form a compact dark coloured mass rich in carbon which is called peat. Peat is used as fuels. Paraffin, acetic acid, peat tar and ammonia are formed as by-products of peat obtained for industrial uses.

*Bogs → Peat → fuel*

## quiz

Male gametophyte with least number of cells is present in

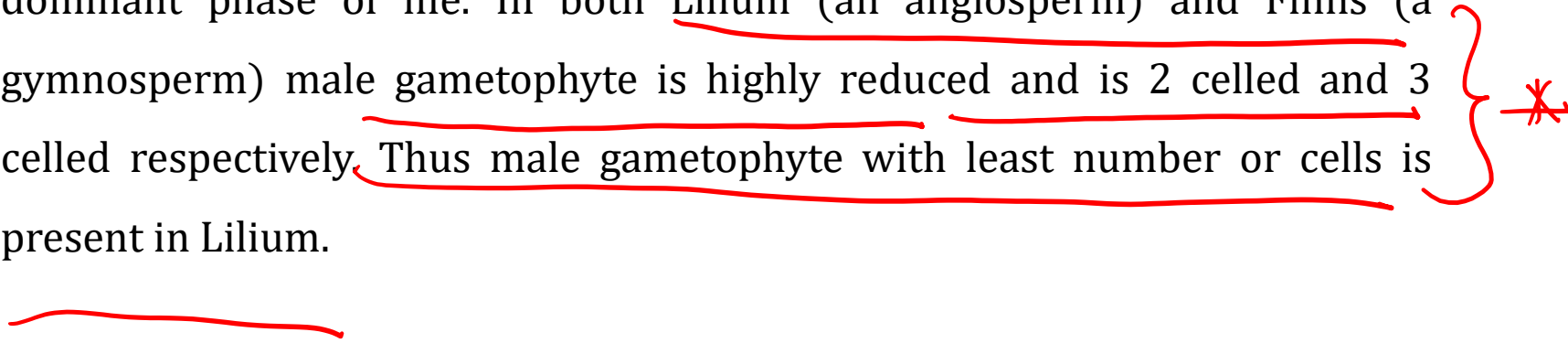
- (A) Pteris → prothallus (B) Funaria - Gametophyte dominant  
(C) Lilium (D) Pinus

↪ angiosperm - Male gametophyte - 2-3 celled

## answer

### Ans [C]

Pteris has a multicellular gametophytic prothallus which has both antheridia and archegonia. Funaria has a bisexual leafy gametophyte which is the dominant phase of life. In both Lilium (an angiosperm) and Pinus (a gymnosperm) male gametophyte is highly reduced and is 2 celled and 3 celled respectively. Thus male gametophyte with least number of cells is present in Lilium. }



## quiz

Isogamous condition with non-flagellated gametes is found in

- (A) Volvox *mobile* (B) Fucus *- brown alga*  
(C) Chlamydomonas (D) ~~Spirogyra~~

*↳ has  
mobile  
stages*




## answer

### Ans [D]

Chlamydomonas has flagellated gametes which are similar or dissimilar in size. In Volvox and Fucus, non-motile female gametes and motile male gametes are produced (oogamy). Spirogyra has gametes that are similar in size (isogamous) and are non-flagellated.

## quiz

Monoecious plant of Chara shows occurrence of

- (A) Upper antheridium and lower oogonium on the same plant
-  (B) Upper oogonium and lower antheridium on the same plant
- (C) Anthcridiophore and archegoniophore on the same plant
- (D) Stamen and carpel on the same plant

## answer

### Ans [B]

All species of Chara reproduce sexually and show highly advanced oogamy. The sex organs are the most distinctive features of the Order Charales and are the most complicated among the thallophytes. Male and female gametangia are called antheridia and oogonia respectively. Male fructification (cluster of antheridia) is called globule and the female is nucule. They are borne at the nodes of short branches, globule towards lower side and nucule (female structure) towards upper side.

female - nucule  
placed higher  
than male

## quiz

Read the following statements (A - E) and answer the question which follows them.

- ✓ (A) In liverworts, mosses and ferns gametophytes are free-living
- ✓ (B) Gymnosperms and some ferns are heterosporous *eg Selaginella, Salvinia, Marsilea*
- ✓ (C) Sexual reproduction in Fucus, Volvox and Albugo is oogamous
- (D) The sporophyte in liverworts is more elaborate than that in mosses. ✗
- (E) Both Pinus and Marchantia are dioecious. ✗  
*→ Monoecious*

How many of the above statements are correct?

- |           |          |
|-----------|----------|
| (A) Three | (B) Four |
| (C) One   | (D) Two  |

**answer**

**Ans [A]**

Three

## quiz

Syngamy can occur outside the body of the organism in

- fusion of male & female gametes
- (A) Mosses                      (B) Algae → external fertilization
- (C) Ferns                      (D) Fungi

## answer

### Ans [B]

Syngamy is the complete and permanent fusion of male and female gametes to form the zygote. When fertilization occurs outside the body of the organism, this type of gametic fusion is called external fertilization or external syngamy. In majority of algae, external fertilization occurs.

→ \* unip

## quiz

What is common in all the three, Funaria, Dryopteris and Ginkgo?

- (A) Presence of archegonia
  - (B) Well developed vascular tissues
  - (C) Independent gametophyte
  - (D) Independent sporophyte
- Handwritten notes:*  
Moss fun (under Funaria)  
L gymnos (under Ginkgo)  
X (next to B)  
X (next to C)  
X (next to D)



## answer

### Ans [A]

In Funaria (Bryophyta), Dryopteris (Pteridophyta) and Ginkgo ✓  
(Gymnosperm) female sex organ archaegonium is formed. Funaria lacks  
independent sporophyte and vascular tissues while independent  
gametophyte is absent in Ginkgo.

## quiz

Which one of the following is wrongly matched?

~~(A)~~ Spirogyra - Motile gametes

(B) Sargassum - Chlorophyll

(C) Basidiomycetes - Puffballs

(D) Nostoc - Water blooms

false

True

True

True

Chl a, d

## answer

### Ans [A]

In Spirogyra, gametes are non-motile and sexual reproduction takes place by conjugation. Sargassum belongs to Phaeophyceae group of algae. They are commonly called as 'brown algae' and contain photosynthetic pigments chlorophyll a and c. Puffballs are Basidiomycetes with a stalked rounded structure that sends out puffs of spores, e.g., Lycoperdon oblongisporum. Nos toe is a colonial cyanobacterium. It enriches its habitat with nitrogen by fixing atmospheric nitrogen and also causes water bloom.

## quiz

The plant body is thalloid in

(A) Sphagnum Moss

(B) Salvinia a pteridophyte

(C) ~~Marchantia~~

(D) Funaria Moss

→ Liverwort → Thallus like

**Ans [C]**

Sphagnum and Funaria belong to Class Bryopsida of Division Bryophyta, They are typically mosses. The plant body has radial symmetry and is essentially leafy. Salvinia belongs to division Pteridophyta. It has a sporophyte plant body with true leaves, stem and roots. Marchantia belongs to Class Hepaticopsida of Division Bryophyta, They are also called liverworts. The plant body is a dorsoventrally flattened thallus.



## quiz

Which one of the following is common to multicellular fungi, filamentous algae and protonema of mosses?

- (A) Diplontic life cycle
- (B) Members of Kingdom Plantae
- (C) Mode of nutrition
- (D) Multiplication by fragmentation

gametophyte

Plum-

Plantae

moss

Kingdom fungi - saprophytic

Ans (D)

Hap

lonk

✓ ✓

## answer

### Ans [D]

Algae and moss are included in plant kingdom while fungi constitute a separate kingdom. Among them, mosses invariably show diplontic life cycle while others may or may not. Algae and moss are autotrophic while fungi are heterotrophs, But they all show multiplication by fragmentation.

## quiz

Cycas and Adiantum <sup>fern</sup> resemble each other in having

- (A) Seeds ✗
- (B) Motile sperms ✓
- (C) Cambium ✗
- (D) Vessels ✗

Gymnosperm → Tracheids ✓, motile sperms <sup>seeds</sup>

Adiantum is a fern - no seed, no vessels,  
but motile sperms



## answer

### Ans [B]

Cycas is a gymnosperm and Adiantum is a pteridophyte, Cambium and seeds are absent in pteridophytes, while vessels are absent in both of these two groups. Both Cycas and Adiantum resemble each other in having multi-ciliated sperms.

## quiz

How many organisms in the list given below are autotrophs?

Lactobacillus, Nostoc, Chara, Nitrosomonas, Nitrobacter, Streptomyces,  
Saccharomyces, Trypanosoma, Porphyra, Wolffia

(A) Four

(B) Five

(C) Six

(D) Three

## Ans [C]

Autotrophic nutrition involves manufacture of organic materials from inorganic raw materials with the help of energy obtained from outside sources. It is of two types - chemosynthesis and photosynthesis. The organisms which are able to manufacture their organic food from inorganic raw materials with the help of energy derived from exergonic chemical reactions are called chemoautotrophs. Nitrosomonas and Nitrobacter are chemoautotrophic nitrifying bacteria.

Those organisms who can manufacture organic compounds from inorganic raw materials with the help of solar energy in the presence of photosynthetic pigments are called photoautotrophs. E.g., Nostoc, Chara, Porphyra and Wolffia.

## quiz

The gametophyte is <sup>Cycline</sup> living generation in

(A) Polytrichum

(B) Adiantum

(C) Marchantia

(D) Pinus

} Sporophyte is dominant

↳ gameophyte is dominant

? rather allus  
Active

does Photosynthesis

## answer

### Ans [D]

In gymnosperms (like Pinus), the male and female gametophyte do not have an independent free living existence. They remain within the sporangia retained on the sporophytes i.e., female gametophyte (within megasporangium) and male gametophyte (within microsporangium).

## quiz

Compared with the gametophytes of the bryophytes, the gametophytes of vascular plants tend to be

→ Gametophyte are reduced

- (A) smaller but to have larger sex organs
- (B) Larger but to have smaller sex organs
- (C) Larger and to have larger sex organs
- ☒ (D) Smaller and to have smaller sex organs

## answer

### Ans [D]

In bryophytes, the dominant phase of life cycle is gametophytic plant body.

In contrast, vascular plants have sporophytic plant body in most of their life cycle and reduced, smaller gametophyte which have smaller sex organs.

## quiz

Archegoniophore is present in

- (A) ~~Marchantia~~ - *liverwort* (B) Chara - *Algae*  
(C) Adiantum - *fern* (D) Funaria - *Algae*



## answer

### Ans [A]

Marchantia is a dioecious plant, Male plants bear antheridiophores and female plants bear archegoniophores. Antheridiophores consists of a stalk and a disc like portion called receptacle, Archegoniophore is composed of a stalk and disc like receptacle at its distal end.

## quiz

A prokaryotic autotrophic nitrogen fixing symbiont is found in

(A) Alnus

(C) Cicer

~~(B) Cycas~~

(D) Pisum

has BGA in the coralloid  
roots

## answer

### Ans [B]

Cycas forms facultative symbiotic association with autotrophic nitrogen fixing cyanobacteria. Cycas provides fix carbon and a stable environment to the cyanobacteria in exchange for fixed nitrogen. These cyanobacteria are endosymbionts and live within the roots of Cycas. In addition to normal roots, Cycas develops specialised symbiotic organs at a young age called pre-coralloid roots which transform into coralloid roots upon successful colonisation by cyanobacteria.

## quiz

Algae have cells made up of

- (A) ~~Cellulose, galactans and mannans~~
- (B) Hemicellulose, pectins and proteins
- (C) Pectins, cellulose and proteins
- (D) Cellulose, hemicellulose and pectins

## answer

### Ans [A]

Majority of algae (eukaryotes) possess a definite cell wall containing cellulose and other carbohydrates. In algal cell wall, different chemical components are present which vary widely among different groups (e.g., xylan, mannan, galactan, alginic acid, silica, agar, pectin, carrageen in, etc.). Cell wall of blue-green algae is made up of micro-peptides (proteins). This micro-peptide is not found in eukaryotic algae,

## quiz

Male and female gametophytes are independent and free-living in

- (A) Mustard
- (C) Finns

(B) Castor

✓ (D) Sphagnum - Moss

gametophyte is

dominant

## answer

### Ans [D]

Sphagnum is a bryophyte in which dominant phase or plant body is independent and free living gametophyte. The sporophyte is parasitic over gametophyte. In Pinus (a gymnosperm), mustard and castor (angiosperms), the main plant body is sporophytic, Gametophyte is highly reduced and is completely dependent on sporophyte.

## quiz

Which one of the following is monoecious?

(A) Marchantia

(B) Cycas

(C) Pinus

(D) Date palm

→ male &

female

gametophyte in same plant



## answer

### Ans [C]

Monoecious plants have separate male and female flowers on the same plant, Pinus have both the male and female cones or strobili on the same tree.

## quiz

Which one of the following is a vascular cryptogam?

- (A) Ginkgo
- (B) Marchantia
- (C) Cedrus
- ~~(D)~~ Equisetum

## answer

### Ans [D]

Pteridophytes are known as vascular cryptogams (Gk kryptos = hidden + gamos = wedded). They reproduce by spores rather than seeds. They are the first vascular land plant. The pteridophyte Equisetum belongs to the Class Sphenophyta. All vegetative parts of it possess vascular tissues (i.e. hadrome equivalent to xylem and leptome equivalent to phloem) organised in definite groups of steles.

## quiz

Mannitol is the stored food in

(A) Porphyra

(C) Gracillaria

~~(B) Fucus~~

(D) Chara

- Brown alge

## answer

### Ans [B]

Fucus is a brown algae i.e. belongs to Class Phaeophyta. In this alga the accumulation product of photosynthesis is D-mannitol (a sugar alcohol) and the reserve food material is laminarin.

## quiz

\*\* N/ECT

Which one of the following is considered important in the development of seed habit?

- (A) Heterospory
- (B) Haplontic life cycle
- (C) Free-living gametophyte
- (D) Dependent sporophyte

Very imp ques \*\*

Seed habit due to

- e.g. Selaginella
- ① Heterospory - 2 types  
♂ gametophyte
  - ② Gametophyte nutritionally  
depend upon  
sporophyte
  - ③ Only one functional  
megaspore
  - ④ Megaspore develops into

## answer

### Ans [A]

The differentiation of spores into microsporcs and megaspores, and their dependence on the parent sporophyte for the nutrition, are certain features in the life cycle of Selaginella. which have been considered as the essential pre-requisties for the formation of seeds, characteristic of spermatophytes. It is generally agreed, that the seed plants arose from the heterosporous vascular plants that instead of discharging the megaspore acquired the habit of retaining it within the megasporangium.

## quiz

Which one of the following has haplontic life cycle?

(A) Polytrichum

(B) Ustilago

(C) ~~Wheat~~

(D) Funaria

fun ym  
Moss

↳ only zygote is diploid



## answer

### Ans [D]

Funaria exhibits gametophytic ( $n$ ) as well as sporophytic ( $2n$ ) generation in its life cycle. The gametophytic generation is represented by a short lived protonema which produces spermatozoids in antheridium of male shoot and egg in archegonium of female shoot. Egg and spermatozoids are fused to form zygote. From zygote diploid sporophyte is produced. The capsule of sporophyte produces haploid spores. Then the haploid gametophyte is produced from the haploid spores. So, the zygote is the only diploid stage in the life cycle. Hence, the life cycle is haplontic life cycle.

## quiz

Which one of the following plants is monoecious?

~~(A)~~ Pinus

(B) Cycas

(C) Papaya

(D) Marchantia

## answer

### Ans [A]

Monoecious plants have separate male and female flowers on the same plant, Pinus have both the male and female cones or strobili on the same tree.

## quiz

Select one of the following pairs of important features distinguishing Gnetum from Cycas and Pinus and showing affinities with angiosperms.

- (A) Perianth and two integuments
- (B) Embryo development and apical meristem
- (C) Absence of resin duct and leaf venation
- (D) Presence of vessel elements and absence of archegonia

→ advanced gymnosperm - Has vessels,  
No archegonia

## answer

### Ans [D]

In gymnosperm except Order Gnetales (Gnetum) xylem consist of xylem parenchyma and tracheids with bordered pits but lacks vessels. So, Gnetales are the most advanced among gymnosperms. They lack archegonia in female gametophyte thus showing similarity with angiosperm and act as connecting link between the two.

## quiz

In which one of the following male and female gametophytes do not have free living independent existence?

- (A) Polytrichum - moss  
(B) Cedrus → gymnosperm - gametophyte  
(C) Pteris - fern  
(D) Funaria - Moss not dominant

## answer

### Ans [B]

In gymnosperm (like Cedrus) the male and female gametophyte do not have an independent free living existence. They remain within the sporangia retained on the sporophytes i.e., female gametophyte with megasporangium and male gametophyte within microsporangium.

## quiz

Which one of the following is heterosporous?

- (A) Adiantum
- (B) Equisetum
- (C) Dryopteris
- ☒ (D) Salvinia

exception pteridophyte



## answer

### Ans [D]

The sporophyte of pteridophyte produces meiospores inside sporangia, which may be homosporous (e.g., Equisetum, Adiantum, Dryopteris, etc.) or heterosporous (e.g., Salvinia, ~~Selaginella~~ etc.).

Selaginella

## quiz

Spore dissemination in some liverworts is aided by

- (A) Indusium - *protects sporophyte* (B) Calyptra  
(C) Peristome teeth (D) ~~Elaters~~

→ In funari's

## Ans [D]

An elater is a cell (or structure attached to a cell) that is hygroscopic, and therefore will change shape in response to changes in moisture in the environment. Elaters come in a variety of forms, but are always associated with plant spores. In plants that do not have seeds, they function in dispersing the spores to a new location. In the liverworts, elaters are cells that develop in the sporophyte alongside the spores. They are complete cells, usually with helical thickenings at maturity that respond to moisture content. In most liverworts, the elaters are unattached, but in some leafy species (such as *Frullania*) a few elaters will remain attached to the inside of the sporangium (spore capsule). The elaters by hygroscopic movement help in spore dispersal.

## quiz

Flagellated male gametes are present in all the three of which one of the following sets?

(A) Zygnema, Saprolegnia and Hydrilia

(B) Fucus, Marsilea and Calotropis

(C) Riccia, Dryopteris and Cycas

(D) Anthoceros, Funaria and Spirogyra

dipteris is on

fern

gymnosperm

flagellated  
male  
gametes

## answer

### Ans [C]

Flagellated male gametes are mostly seen lower groups of plants like algae, bryophytes, pteridophytes. It is also seen in certain gymnosperms like Cycas.  
The bryophytes like Riccia have the male gametes which are biflagellate.



## quiz

If you are asked to classify the various algae into distinct groups, which of the following characters you should choose?

- (A) Nature of stored food materials in the cell
- (B) Structural organization of thallus
- (C) Chemical composition of the cell wall
- (D) Types of pigments present in the cell

## answer

### Ans [D]

Algae are a group of chlorophyllous, nonvascular plants with thallose plant body. Different algae show different pigments present in the cell like chlorophyll - a, b, xanthophylls, carotenes, etc. These pigments provide the base for classification of various groups of algae into different classes. Members of Chlorophyceae possess chlorophyll - a, b pigments, Bacillariophyceae contains diatomin pigment whereas that of Phaeophyceae has fucoxanthin, Rhodophyceae has r-phycoerythrin and r-phyocyanin and cyanophyceae has phycobilin pigment.

## quiz

In the prothallus of a vascular cryptogam, the antherozoids and eggs mature at different Limes, As a result

- (A) There is high degree of sterility
- (B) One can conclude that the plant is apomictic
- ☒ (C) Self fertilization is prevented
- (D) There is no change in success rate of fertilization



## answer

### Ans [C]

In prothallus of vascular cryptogams the antherozoids and eggs mature at different times. The spores on germination! gives rise to prothallus, The antherozoids are biflagellated or multiflagellated. The egg is produced inside the venter, water is essential for fertilization and it is always cross-fertilization. Self fertilization is prevented,

## quiz

Peat moss is used as a packing material for sending flowers and live plants to distant places because

- (A) It serves as a disinfectant
- (B) It is easily available
- ☒ (C) It is hygroscopic
- (D) It reduces transpiration

## answer

### Ans [C]

The partially decomposed Sphagnum mass accumulates to form compressed mass called peat, which after drying is used as coal. So it is also called peat moss. Sphagnum has the capacity to retain water for long periods and thus it is used to cover plant roots during transportation.

## quiz

Conifers differ from grasses in the

*gymnosperm*

*endosperm develops after fertil'*

- (A) Formation of endosperm before fertilization
- (B) Production of seeds from ovules
- (C) Lack of xylem tracheids
- (D) Absence of pollen tubes

## answer

### Ans [A]

Conifers belong to gymnosperms. They are seed bearing plants in which the sporophylls are aggregated to form cones and the seeds develop in exposed state over the surface of megasporophylls. Vascular strand consists of tracheids and sieve cells. Female gametophyte forms archegonia, provides nourishment to developing embryo and later gets transformed into food-laden tissue or endosperm inside the seed. This endosperm is formed before fertilization so it is haploid in nature. It provides nourishment for growth of seedlings at the time of seed germination. Grass is an angiospermic plant and endosperm is produced after fertilization,

## quiz

Plants reproducing by spores such as mosses and ferns are grouped under the general term

- ✓ (A) Cryptogams → no flowers (B) Bryophytes  
(C) Sporophytes → no seeds (D) Thallophytes  
→ no reproductive organs

## answer

### Ans [A]

Eichler divided plant kingdom into two subkingdoms – Cryptogamae and Phancrogamae. All plants without flowers and seeds are Included in the Sub-kingdom Cryptogamae whereas Phanerogam ae includes plants which bear flowers and seeds.

Cryptogams are further classified into three divisions. Thallophyta, Bryophyta and Pteridophyta.

Spore bearing plants such as mosses and ferns belong to cryptogams because instead of reproducing by flowers and seeds they reproduce by means of spores.

## quiz

Which one pair of examples will correctly represent the grouping spermatophyta according to one of the schemes of classifying plants ?

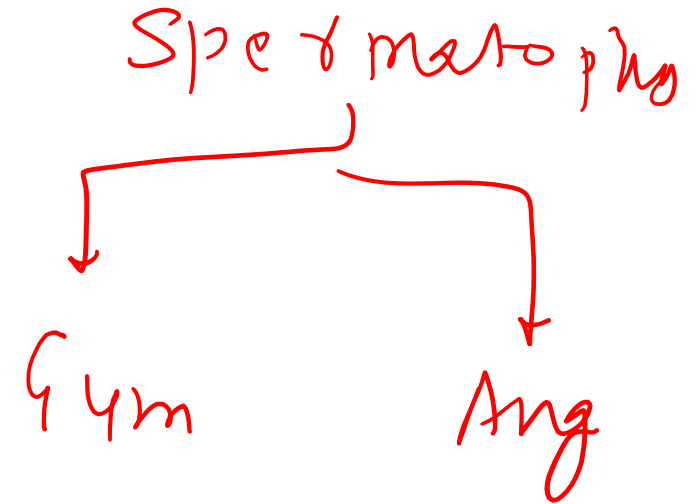
(A) Acacia, sugarcane X

(C) Rhizopus, Triticum X

(B) Pinus, Cycas ✓ ✓

(D) ~~Ginkgo~~, ~~Pisum~~ ✓

Gymno An





## answer

### Ans [D]

Spermatophyta includes seed bearing plants and this includes gymnosperms and angiosperms. Acacia and sugarcane both are angiosperms. Pinus and Cycas both are gymnosperms. Rhizopus belongs to Kingdom Fungi and Triticum is an angiosperm. Ginkgo is gymnosperm and Pisum is an angiosperm. So Ginkgo and Pisum correctly represent the grouping spermatophyta.

↓  
Gym

↓  
Ang

## quiz

Which of the following plants produces seeds but not flowers?

- (A) Maize
- (C) Peepal

(B) Mint

☒ (D) Pinus - cones present

answer

**Ans [D]**

Pinus

## quiz

Cycas has two cotyledons but not included in angiosperms because of

 (A) Naked ovules

(B) Seems like monocot

(C) Circinate ptyxis

(D) Compound leaves

## answer

### Ans [A]

Cycas belongs to Order Cycadales of gymnosperms because it has naked seed. It is not enclosed inside a fruit. It does not have double fertilization and so the endosperm formed is haploid in nature and not triploid. So it is not included in angiosperms as they have ovules (or seeds) produced inside fruit. This is the main difference between gymnosperms and angiosperms.

## quiz

A student observed an algae with chlorophyll a, b and phycoerythrin, it should belong to

(A) Phaeophyta

(B) Rhodophyta

☒ (C) Chlorophyta

(D) Bacillariophyta

→ green algae

## answer

### Ans [B]

The algal Class Rhodophyceae contains a red pigment (r-phycoerythrin) and a blue pigment (r-phyococynin) in the chromatophores. These pigments can utilize those wavelengths of light (blue-green region of spectrum, i.e., 480-520 nm) that are not absorbed by chlorophyll. This enables red algae to grow at greater depths than other plants (upto 300 ft, below water). In addition to these, chl.-a, chl.-d, carotenes and xanthophylls are present. In phaeophyceae chromatophores are yellowish brown in colour possessing xanthophylls in abundance.

Bacillariophyceae are called 'diatoms' due to presence of an accessory brown pigment called diatomin. Other pigments are chl.-a, chl.-e (but not chl.-b), carotenes and xanthophylls.

In chlorophyceae colouring pigments are just like higher plants, i.e., Chl.-a, Chl.-b, xanthophylls and carotenes.

## quiz

Plant group with largest ovule, largest tree, and largest gametes is

☒ (A) Gymnosperm

(B) Angiosperm

(C) Bryophyta

(D) Pteridophyla



## answer

### Ans [A]

Gymnosperms are the most primitive seed plants. The plants are generally perennial, woody trees or shrubs. In general, tallest trees are in gymnosperms e.g., Sequoia sempervirens is 366 ft. in height. The male gametes of Cycas are largest (300  $\mu$ ) in size, they are visible to naked eye and are oval in form and top-shaped. The ovule of Cycas is also largest in the plant kingdom.

## quiz

The antherozoids of Funaria are

- (A) Multiciliated
- (B) Monociliated
- (C) Aciliated
- (D) Biciliated

## answer

### Ans [D]

Androcytes or antherozoid mother cell of Funaria metamorphoses into a single biflagellate spermatozoid (antherozoids), It is a spirally coiled biflagellate (biciliated) structure.