

PART - I
SECTION - A

1. i) Give brief answers:

[4]

- a) What are subsidiary cells ?
- b) According to which theory energy is needed for water absorption ?
- c) Define inflorescence.
- d) What type of fruits are produced by the gymnosperms ?

ii) Choose the correct answer:

[4]

- a) Haplo-diplontic life cycle is exhibited by
 - 1) Liverworts
 - 2) Chlamydomonas
 - 3) Pinus
 - 4) Spirogyra
- b) Sexual reproduction in Rhodophyceae is
 - 1) Isogamous only
 - 2) anisogamous only
 - 3) oogamous only
 - 4) all of these
- c) Nucleus is absent in
 - 1) sieve tubes
 - 2) companion cells
 - 3) meristematic cells
 - 4) parenchyma
- d) Fabaceae shows
 - 1) marginal placentation and is monocarpellary
 - 2) axile placentation and is bicarpellary
 - 3) axile placentation and is hypogynous
 - 4) marginal placentation and is epigynous

iii) Give reasons:

- a) Bulliform cells are present in some leaves.
- b) Sporophyte of moss is only partially parasite on the gametophyte.

SECTION B

2. Mention four characteristic features of pteridophytes.

[2]

3. Give one difference between the following:

[2]

a) Symplast and apoplast movement of water

b) Epiphyllous and epipetalous condition

4. Draw a diagram showing L. S. of a maize grain.

[2]

OR

Draw a diagram showing the T.S. of a monocot root (diagrammatic).

5. Write a short note on the gametophyte of bryophytes.

[2]

SECTION C

6. Differentiate between Chlorophyceae, Phaeophyceae and Rhodophyceae

[3]

on the basis of stored food, composition of cell wall and flagellar number.

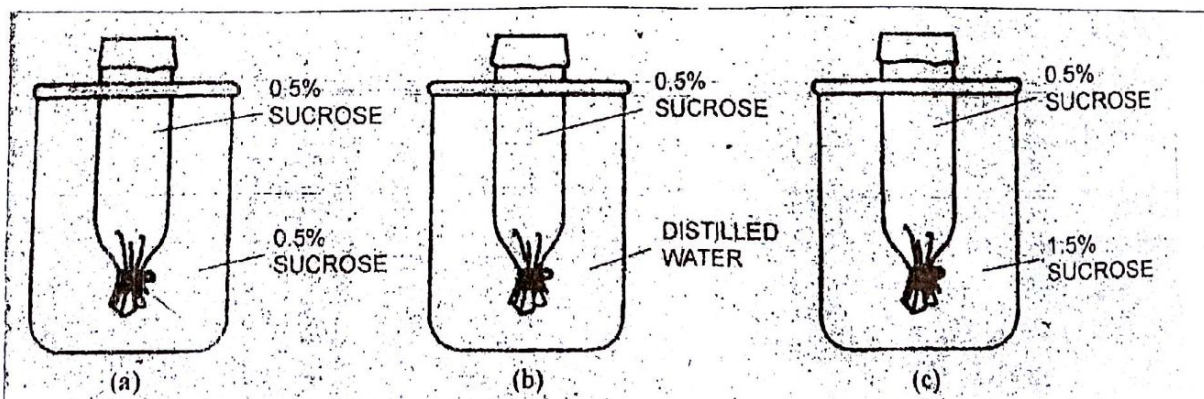
7. Explain transpiration pull theory for ascent of sap.

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8. Dialysis bags containing 0.5% sucrose solution are placed in beakers

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containing solutions indicated below:



Indicate the beaker in which the following events occur:

- Dialysis bag remains the same size.
- Dialysis bag swells.
- Water moves from the bag into the beaker.
- The OP inside the bag is higher than outside the bag.
- Water potential inside the bag is higher than outside the bag.
- What is the water potential of pure water ?

PART – II (40 MARKS)

SECTION –A

Question 1

Answer the following questions briefly and to the point.

- (i) "Diatoms" the chief producers in the oceans belongs to the group (1)
- (a) Chrysophytes
 - (b) Dinoflagellates
 - (c) Euglenoids
 - (d) Slime moulds
- (ii) The bacteria used in a biogas plant is (1)
- (a) Methanogen
 - (b) Halophile
 - (c) Thermoacidophile
 - (d) Cyanobacteria
- (iii) The radially symmetrical diploblastic animals belong to the phylum (1)
- (a) Porifera
 - (b) Cnidaria
 - (c) Platyhelminthes
 - (d) Echinodermata
- (iv) The excretory system in cocroach is (1)
- (a) Nephridia
 - (b) Protonephridia
 - (c) Malpighain tubule
 - (d) Flame cells
- (v) What kind of heart and bones do birds have? (1)
- (vi) What are tendons? Where are they found? (1)
- (vii) What do you mean by cell aggregate body plan? Give an example of an organism with plan. (1)
- (viii) What are choanocytes? (1)
- (ix) Define coenocytic condition. (1)
- (x) What is plasmodium? (1)

9. a) Placentation of an angiospermic family is given below. Name the family and draw the floral diagram of the family.

[3]



OR

b) Placentation of an angiospermic family is given below. Name the family and draw the floral diagram of the family.



SECTION D

10.a) (i) Describe secondary growth in a dicot stem.

(ii) Give two points of difference between heart wood and sap wood.

OR

b)(i) Describe secondary growth in a dicot root.

(ii) Give two points of difference between early and late wood.

11.a)(i) Why are xylem and phloem classified as complex tissues? Describe the structure of phloem.

(ii) Give the significance of osmosis in plants.

OR

b)(i) Describe the different types of vascular bundles in plants.

(ii) Give the significance of diffusion in plants.

SECTION – B

Question 2

Give any two differences between bone and cartilages (2)

Question 3

‘Urochordates are known as Tunicates’. Why? How are cephalochordates different from them? (2)

Question 4

Draw a neat labeled diagram of cuboidal epithelial tissue (2)

OR

Give a neat sketch of a neuron. Label its parts.

Question 5

What are jawless vertebrates known as? Name one class coming under it. Give any two characteristic of it with an example. (2)

SECTION – C

Question 6

State any three distinguishing features of Ctenophora (3)

OR

State any three distinguishing features of Hemichordates.

Question 7

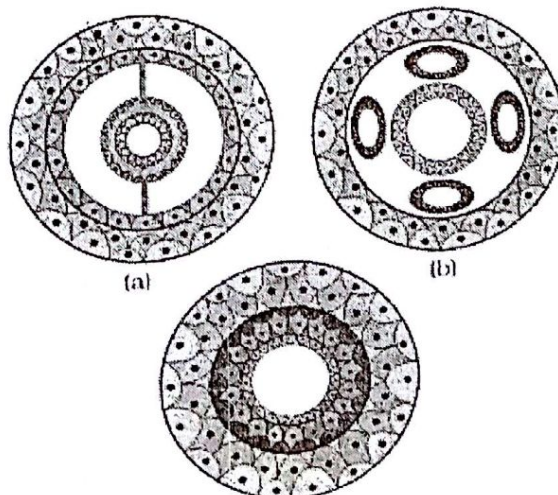
Explain the TS of a hyaline cartilage with the help of a diagram. (3)

Question 8

A research scholar is working on a fish. He finds that its mouth is ventral in position and its gills are exposed. To which class he is likely to classify this fish? Write any four other distinguishing features of the class to which it belongs. (3)

Question 9

Identify the following diagrams. What are they? Write notes on each of the following (3)



SECTION – D

Question 10

Define Tissue. Give an outline on the classification of tissues in Animals. Explain in detail any one category with respect to its classification, location, structure and function. Support your answer with the help of suitable diagrams. (5)

OR

What are chordates? Mention the characteristics that made them unique. Give a comparative account on the different classes coming under super class tetrapoda.

Question 11

What do you mean by classification? List out and explain the characteristics that form the basis of classification in animals (5)

OR

Briefly explain the morphological characteristics of a cockroach .Give the systematic position also.