BOTANY

11 STANDARD

Time : 2.30 Hrs. Marks : 70

I. ***Answer all questions :*** 15 x 1 = 15

1. The correct statement regarding blue green algae is_____.

   a) lack of motile structures

   b) presence of cellulose in cell wall.

   c) absence of mucilage around the thallus

   d) presence of Floridean starch.

2. In Pinus the scale leaves on the dwarf shoots have a distinct midrib and are called _____.

   a) Mycorrhizae b) Erwinia

   c) Cataphylls d) Coralloid Roots

3. Gynoecium with united carpels is termed as _____.

   a) Apocarpous b) Multicarpellary

   c) Syncarpous d) None of the above

4. Identify the Binomial name belongs to the family Apocynaceae _____.

   a) Thevetia peruviana b) Aeschynomene aspera

   c) Solanum trilobatum d) Aloe vera

5. In a dark field Microscope a special effect in an ordinary microscope is brought about by means of a special component called _____.

   a) patch stop carrier b) numerical aperture

   c) magnification d) cystolith

6. Who found the cell division in the roundworm?

   a) Robert Brown b) Edouard Van Beneden

   c) Flemming d) Theodor Boveri

7. _____ is used as an anti coagulant.

   a) amylopectin b) Glycans

   c) Heparin d) Ramnose

8. Viroids differ from viruses in having _____.

   a) DNA molecules with protein coat

   b) DNA molecules without protein coat

   c) RNA molecules with protein coat

   d) RNA molecules without protein coat

9. Seed formation without fertilization in flowering plants involves the process of _____.

   a) sporulation b) Budding

   c) Somatic hybridization d) Apomixis

10. In the green sulphur bacteria the hydrogen donor is H_2S and the process of pigment is called _____.

    a) Rhodospirillum b) Bacterioviridin

    c) Streptococcus d) Nitrobactor

11. Write the correct sequence of karyokinesis is _____.

    a) Prophase, Anaphase, Metaphase, Telophase

    b) Prophase, Metaphase, Anaphase, Telophase

    c) Prophase,Telophase,Metaphase Anaphase,

    d) Prophase, Metaphase, Telophase, Anaphase,

12. Identify the correct match _____.

1) Die back disease of citrus	–	(i) Mo
2) Whip tail disease	–	(ii) Zn
3) Brown heart of turnip	–	(iii) Cu
4) Little leaf	–	(iv) B.

a) 1. (iii) 2. (ii) 3. (iv) 4. (i)

b) 1. (iii) 2. (i) 3. (iv) 4. (ii)

c) 1. (i) 2. (iii) 3. (ii) 4. (iv)

d) 1. (iii) 2. (iv) 3. (ii) 4. (i)

13. The foolish seedling disease or Bakanae caused due to the _____.

a) Gibberella fujikuroi b) Agaricus

c) Rhizopus d) Pisum

14. The branch of Botany which deals with the ageing, abscission and senescence is called _____.

a) Phytogeronotology b) Dendrochronology

c) Phytohormones d) Dormancy

15. Structures between two adjacent cells which is an effective transport pathway _____.

a) Plasmodesmata b) Middle lamella

c) Secondary wall layer d) Primary wall layer

PART – II

II. Answer any six questions : 6 x 2 = 12

16. Differentiate Homiomerous from Heteromerous lichens.
17. Do you agree with the statement Bryophytes need water for fertilization? Justify your Answer.
18. What are the functions of leaf ? (Any two)
19. What are called syngenesious anther?
20. Write the significance of DNA barcoding?
21. Draw the floral diagram of solanance (Datura metal)
22. What are called apoenzyme?
23. What are called Lenticels?
24. Write the difference between Dark respiration and photorespiration (any two)

PART – III

III. Answer any six questions Q.No.29 is a compulsory question : 6 x 3 = 18

25. What are called as amber?
26. Draw and label the parts of Lamp brush chromosome.
27. What are called polygamous flower? Give one example.
28. Write the physiological effects of auxin (any three).
29. Bring out the differences between sap wood and heart wood (any three)
30. What are called Eustele? Give examples
31. Explain lock and key mechanism.
32. What is meant Papilionaceous corolla?
33. Name any three Economic importance of Algae.

PART – IV

IV. Answer all the questions : 5 x 5 = 25

34. Draw and label the parts of a structure of a Bacterial cell.

(OR)

Write the difference between Dicot and Monocot stem.

35. Write the sexual reproduction in Oedogonium.

(OR)

Write any five Economic importance of Gymnosperm:

36. Write the characteristic features of the stem.

(OR)

Write the types of Aestivation and Explain:

37. Draw the flow chart of Benthem & Hooker's system of classification.

(OR)

Write the Flow chart of kreb's cycle.

38. Write the difference between C_3 plant C_4 plants (any five)

(OR)

Write the Botanical Description of Ricinus communis (castor)

ANSWER KEY - BOTANY

I. Choose the correct Answer

1) a	**2) c**	**3) c**	**4) a**	**5) a**
6) b	**7) c**	**8) d**	**9) d**	**10) b**
11) b	**12) b**	**13) a**	**14) a**	**15) a**

Part – II (2 marks)

16. Homoiomerous - Algal cells evenly distributed in the thallus.

    Heteromerous - A distinct layer of algae and fungi present.

17. Yes, the antheridia produces biflagellate antherozoids which swims in thin film of water and reach the archegonium and fuse with the egg to form diploid zygote so, water is essential for fertilinzation.

18. Functions of leaf

    1. Photosynthesis

    2. Transpiration

    3. Gaseous exchange

19. Syngenesious :

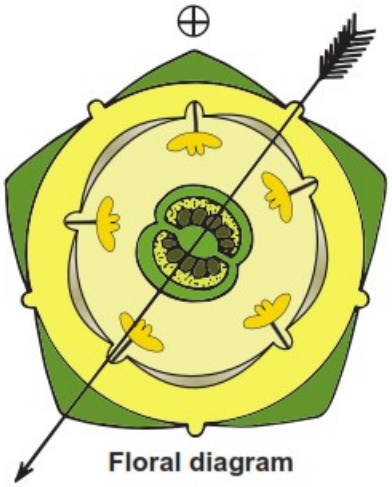
    The anther lobes connected but the filaments free Ex. Asteraceae.

20. DNA Barcoding – Significance

    1. DNA bar-coding greatly helps in identification and classification of organism.

    2. It aids in mapping the extent of Biodiversity.

21. Solanacoae – Datura metal.



Floral diagram

22. Apoenzyme : The inactive enzyme without its non protein component.

23. Lenticels : Lenticel is raised opening or pore on the epidermis or bark of stems and roots. It is formed during secondary growth in stems.

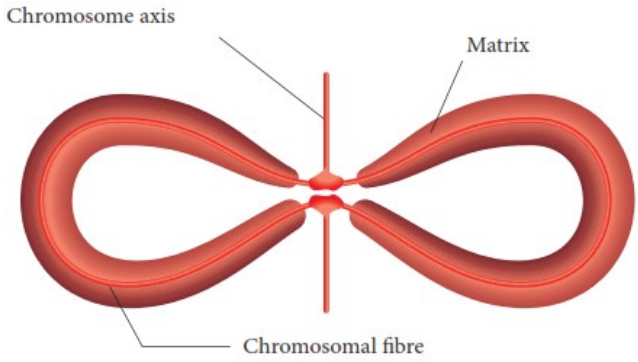
24.

Dark Respiration	**Photorespiration**
1. It takes place in photosynthetic green cells.	1. It takes place in all living cells.
2. It involves chloroplast, peroxisome and mitochondria	2. It involves only mitochondria.

Part – III (3 marks)

25. Amber : Amber is a fossilized, tree resin especially from the wood. Which has been appreciated from its colour and natural beauty since Neolithic times.

26. Lamp brush chromosome



Lampbrush chromosomes

27. Polygamous Flower :

The condition in which bisexual and unisexual flowers occur in a same plant is called polygamous. Ex. Musa.

28. Physiological effects of auxin.

1) They promote cell elongation in stem and coleoptile.

2) Auxin stimulates respiration.

3) Suppression of growth in lateral bud by apical bud due to auxin produced by apical bud is termed as apical dominance.

29.

Sap wood	**Heart wood**
1. Living part of the wood	1. Dead part of the wood.
2. It is less in coloured.	2. It is dark in coloured
3.Very soft in nature	3. Hard in nature
4. Tyloses absent	4. Tyloses present

30. In dicot stem vascular bundles are arranged in a ring around the pith. This type of Stele is called eustele.

31. Lock and key Mechanism of enzyme :

In a enzyme catalysed reaction the starting substance is the substrate. It is converted to the product. The substrate binds to the specially formed pocket in the enzyme – the active site this is called lock and key mechanism of enzyme action

32. Papilionaceous corolla. :

Made up of five distinct petals. Organized in a Buttertfly shape three types of petals. 1. Posterior petal vexillum. 2. Lateral petal / alae / wing petals 3. Anterior petal carina / keel petals. Ex. Pea

33. Economic importance of Algae

1. Chlorella – food

2. Gracillaria – Agar agar

3. Laminaria – Alginate : Ice cream

Part – IV (5 marks)

34. Book Volume -1 - Pg. No.15 - Fig.1.9

(or)

Anatomical differences between dicot stem and monocot stem

S.No.	Characters	Dicot Stem	Monocot Stem
1.	Hypodermis	Collenchymatous	Sclerenchymatous
2	Ground tissue	Differentiated into cortex, endodermis and pericycle and pith	Not differentiated, but it is a continuous mass of parenchyma.
3	Starch Sheath	Present	Absent
4	Medullary rays	Present	Absent
5	Vascular bundles	(a) Collateral and open (b) Arranged in a ring (c) Secondary growth occurs	(a) Collateral and closed (b) Scattered in ground tissue (c) Secondary growth usually does not occur.

35. Sexual reproduction in oedogonium

1. Explanation

2. Macrandrous & nannandrous

3. Diagram and parts. Vol.-1, Page No.57.

(OR)

Economic importance of gymnosperm - Vol.-1, Page No.82. Table 2.6

36. Characteristic features of stem - Vol.-1, Page No.105.

(OR)

Types of aestivation - Vol.-1, Page No.138 - Fig 4.22 Page No.139.

37. Bentham and hooker system of classification – Vol-1, Page No.175 Fig. 5.6

(OR)

Kreb's cycle - Vol.-II, Page No.152 - Fig. 14.8

38. C_3 and C_4 Plants – Vol.-II, Page No.134

(OR)

Botanical Description of Ricinus communis

Vegetative Characters (any two)

Floral Characters (any two)

Floral diagram

Floral Formula