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STD: XI

BIOLOGY (B L-1-15)

MARKS-70

**ANSWER THE FOLLOWING :**

**30X1=30**

1. Differentiate homoimerous and heteromerous lichens.
2. Write the distinguishing features of monera.
3. Why do farmers plant leguminous crops in crop rotations/mixed cropping?
4. Differentiate haplontic and diplontic life cycle.
5. What is plectostele? give example.
6. What do you infer from the term pycnoxylic?
7. Mention two characters shared by gymnosperms and angiosperms.
8. Draw and label the parts of regions of root.
9. Write the similarities and differences between 1. *Avicennia* and *Trapa*
2. Radical buds and foliar buds 3. Phylloclade and cladode
10. How root climbers differ from stem climbers?
11. Find out the floral formula for a bisexual flower with bract, regular, pentamerous, distinct calyx and corolla, superior ovary without bracteole.
12. Give the technical terms for the following: -
  - a. A sterile stamen
  - b. Stamens are united in one bunch
  - c. Stamens are attached to the petals
13. Bring out the significance of Transmission Electron Microscope.
14. State the protoplasm theory.
15. Define –enzymes.
16. Why the cells of sclerenchyma and tracheids become dead?
17. List out the non-photosynthetic parts of a plant that need a supply of sucrose?
18. Plant A in a nutrient medium shows whiptail disease plant B in a nutrient medium shows a little leaf disease. Identify mineral deficiency of plant A and B?

**3MARKS**

1. Compare sympodial branching with monopodial branching.
2. Differentiate pinnate uncostate with palmate multicostate venation
3. Give an account of G<sub>0</sub> phase.
4. Differentiate cytokinesis in plant cells and animal cells.
5. Write any three significance of mitosis.
6. Differentiate –nucleoside and nucleotide.
7. Write the properties of water.
8. Write the properties of enzymes.
9. In a forest, if the bark of a tree is damaged by the horn of a deer, How will the plant overcome the damage?
10. In which season the vessels of angiosperms are larger in size, why?

11. Continuous state of dividing tissue is called meristem. In connection to this, what is the role of lateral meristem?
12. If the concentration of salt in the soil is too high and the plants may wilt even if the field is thoroughly irrigated. Explain
13. How phosphorylase enzyme open the stomata in starch sugar interconversion theory?
14. The nitrogen is present in the atmosphere in huge amount but higher plants fail to utilize it. Why?
15. Why is that in certain plants deficiency symptoms appear first in younger parts of the plants while in others, they do so in mature organs?
16. Two groups (A & B) of bean plants of similar size and same leaf area were placed in identical conditions. Group A was exposed to light of wavelength 400-450nm & Group B to light of wavelength of 500-550nm.  
Compare the photosynthetic rate of the 2 groups giving reasons.
17. A tree is believed to be releasing oxygen during night time. Do you believe the truthfulness of this statement? Justify your answer by giving reasons.
18. Grasses have an adaptive mechanism to compensate photorespiratory losses- Name and describe the mechanism.
19. What are enzymes involved in phosphorylation and dephosphorylation reactions in EMP pathway?
20. Respiratory quotient is zero in succulent plants. Why?

**5MARKS****LN-1**

1. Briefly discuss on five Kingdom classification. Add a note on merits and demerits.
2. Give a general account on lichens.

**LN-2**

3. Do you think shape of chloroplast is unique for algae. Justify your answer?
4. Do you agree with the statement 'Bryophytes need water for fertilization'? Justify your answer.

**LN-3****LN-4**

5. Explain the different types of placentation with example.
6. Differentiate between aggregate fruit with multiple fruit.
7. Explain the different types of fleshy fruit with suitable example.

**LN-5**

8. What is the role of national gardens in conserving biodiversity – discuss
9. Where will you place the plants which contain two cotyledons with cup shaped thalamus?
10. Give the floral characters of *Clitoria ternatea*.
11. How will you distinguish Solanaceae members from Liliaceae members?

**LN-6**

12. Distinguish between prokaryotes and eukaryotes.
13. Difference between plant and animal cell.
14. Draw the ultra structure of plant cell.

**Ln-7**

15. Differentiate between mitosis and meiosis.
16. Write about Pachytene and Diplotene of Prophase I.

**Ln-8**

17. Explain the structure of DNA .  
18 .Describe the types of RNA .

**LN-9**

- 19.Explain sclereids with their types.  
20.What are sieve tubes ? Explain.  
21.Distinguish the anatomy of dicot root from monocot root.  
22.Distinguish the anatomy of dicot stem from monocot stem.

**LN-10**

23. A timber merchant bought 2 logs of wood from a forest & named them A & B, The log A was 50 year old & B was 20 years old. Which log of wood will last longer for the merchant? Why?  
24. A transverse section of the trunk of a tree shows concentric rings which are known as growth rings. How are these rings formed? What are the significance of these rings?

**LN-11**

- 25.What are the parameters which control water potential?  
26. An artificial cell made of selectively permeable membrane immersed in a beaker (in the figure). Read the values and answer the following questions?



- a. Draw an arrow to indicate the direction of water movement  
b. Is the solution outside the cell isotonic, hypotonic or hypertonic?  
c. Is the cell isotonic, hypotonic or hypertonic?  
d. Will the cell become more flaccid, more turgid or stay in original size?  
e. With reference to artificial cell state, is the process endosmosis or exosmosis? Give reasons

**LN-12**

- 27.Write the role of nitrogenase enzyme in nitrogen fixation?  
28. Explain the insectivorous mode of nutrition in angiosperms?

**LN-13**

29. In Botany class, teacher explains, Synthesis of one glucose requires 30 ATPs in C4 plants and only 18 ATPs in C3plants. The same teacher explains C4 plants are more advantageous than C3 plants. Can you identify the reason for this contradiction?  
30. When there is plenty of light and higher concentration of O<sub>2</sub>, what kind of pathway does the plant undergo?Analyse the reasons.

**LN-14**

31. Explain the reactions taking place in mitochondrial inner membrane.  
32. What is the name of alternate way of glucose breakdown? Explain the process involved in it?  
33. How will you calculate net products of one sucrose molecule upon complete oxidation during aerobic respiration as per recent view?

**LN-15**

34. Write the physiological effects of Cytokinins.  
35. Describe the mechanism of photoperiodic induction of flowering.  
36. Give a brief account on Programmed Cell Death (PCD)

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IMPORTANT QUESTIONS :

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