SECTION A

1. Why is blind spot devoid of vision?  
2. What is meant by stele?  
3. Name the chemical that makes the middle lamella.  
4. How is a turgid cell different from a flaccid cell?  
5. Name the smallest living cell that completely lacks a cell wall and can survive without oxygen.

SECTION B

6. Mention the Phylum along with one example with reference to the distinctive features mentioned below:

(a) Bioluminescence and comb plates
(b) Water vascular system
(c) Rasp organ, radula
(d) Cnidoblasts
7. (a) What is placentation?
(b) Name the type of placentation shown in given figures (i) and (ii). Give one example each.

(i)  
(ii)  

8. Diagrammatically represent the Nitrogen cycle.

9. Name one surface structure of motile bacteria which help in motility. Briefly describe its structure.

10. Describe the structure of the contractile protein Actin with the help of a neat labeled diagram

OR

Describe the role of lungs and skin in excretion.

SECTION.C

11. Give a brief account of the events that takes place in the Prophase –I of the Meiosis.

12. Draw the structure of a double membrane bound cell organelle in plant cell which are found in green cells and label the following parts:
(a) Space limited by inner membrane.
(b) Flattened membranous sacs.
(c) Flat membranous tubules which connect membranous sacs of the different grana.
(d) Relatively less permeable membrane.
13. What is Facilitated diffusion? How symport transport is different from antiport transport?

14. What is aestivation? Describe the different types of aestivation found in flowering plants.

15. (a) Name the widely accepted improved model of the structure of cell membrane

(b) Who proposed this model?

(c) Explain this model of Plasma membrane with the help of the diagram.

16. a) Which pathway of photosynthesis is more efficient – C3 or C4 pathway. Give reason.
(b) Give a diagrammatic representation of C4 Pathway.

17. Differentiate between Red algae, Green algae and Brown algae with respect to their pigments and stored food.

18. In the given table showing name of some hormones and their function. Fill in the blanks A to F

<table>
<thead>
<tr>
<th>No.</th>
<th>Name of the hormone</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Glucagon</td>
<td>(A)</td>
</tr>
<tr>
<td>2.</td>
<td>(B)</td>
<td>Controls metabolism of proteins</td>
</tr>
<tr>
<td>3.</td>
<td>Parathyroid Hormone</td>
<td>(C)</td>
</tr>
<tr>
<td>4.</td>
<td>(D)</td>
<td>Regulates the diurnal rhythm of human body</td>
</tr>
<tr>
<td>5.</td>
<td>Prolactin</td>
<td>(E)</td>
</tr>
<tr>
<td>6.</td>
<td>(F)</td>
<td>Regulates female sexual behaviour</td>
</tr>
</tbody>
</table>

OR

Which of the plant growth regulators one would use for the following:-

a) 'bolt'a rosette plant.
(b) induce immediate stomatal closure of leaves
(c) quickly ripen a fruit
(c) induce rooting in a twig
(c) delay in the leaf senescence
(c) induce parthenocarpy in tomatoes
19. Describe Primary, Secondary and Tertiary structure of proteins and support your answers with diagrams.

20. Where do you find the following in the cockroach alimentary canal and mention their function also.
   (i) Crop    (ii) Hepatic caeca   (iii) Gizzard

21. Differentiate between the anatomy of dicot stem and that of a monocot stem with reference to the following:
   (i) Epidermis    (ii) Hypodermis   (iii) Vascular bundles


SECTION D

23. Priya had a party at home. So she was very busy in preparing varieties of dishes. When she was cooking vegetable, suddenly she picked that hot utensil with bare hands in a hurry. As she touched that utensil, she quickly left the utensil and all vegetable fell down. Her husband, Mohan explained to her, what such actions were called and how it happens.

   (a) Which action was shown by Priya?

   (b) Mention the arc of that action. What is the importance of that action?

   (c) What values are shown in the action of Mohan.

SECTION E

24. a) Where does Non – cyclic Photophosphorylation takes place?

   (b) Describe Z-scheme in light reaction of photosynthesis.

   (c) Why is it called so?

   OR

   (a) Explain Pressure flow hypothesis of translocation of sugars in plants.

   (b) A transverse section of root nodule of soya bean plant appears pink.
      (i) What makes nodule pink?

      (ii) What type of condition does this pigment create in the nodule and how?
Section: Open Text Based Assessment (OTBA) questions

Instructions for the students:

01. These questions are based on one of the themes provided to you by the board.

02. Please ensure that you get a copy of the relevant themes from the school to refer while answering the questions.

03. Each question carries 5 marks.

04. The suggested word limit for the questions is 100-120 words. However depending on the question, your answer could be shorter/or longer. It is important to present your views, arguments and conclusions logically, coherently in your own language; based on the concepts learnt during teaching learning sessions till class XI, their applicability with respect to the open text material and your own awareness of the given theme.

25. Represent the integrity in various systems of the body by taking examples of at least three body systems and any two examples from your daily life and their processes

26. Reflect how the above text material prepares you for life, by giving suitable examples from real life situations

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