INSTRUCTIONS

Please read the following instructions carefully.

1. Check your name and school information. Sign that it is correct.

I agree that this is my name and school.
Candidate's signature

2. RUBRIC. There are TWELVE questions. Answer ALL TWELVE questions. Questions 10, 11 and 12 each offer TWO choices. Attempt any ONE choice from each.

3. When answering the questions:

   Read each question carefully.
   Use a black pencil for diagrams. DO NOT use coloured pencils.
   DO NOT use staples, paper clips, glue, correcting fluid or ink erasers.
   Complete your answer in the allocated space only. DO NOT write outside the answer box.

4. The marks for the questions are shown in brackets ( ).
Q.1.  (Total 4 Marks)

a. A student is interested in learning about carbon cycle, conservation of endangered species and recycling of waste. Which field of biology should he choose and why? (2 Marks)
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___________________________________________________________________________________
___________________________________________________________________________________

b. Draw a diagram to show the arrangement of chains in a tertiary protein. (2 Marks)
Q.2. (Total 4 Marks)

How do viruses survive:

i. inside the host cell?
___________________________________________________________________________________
___________________________________________________________________________________
___________________________________________________________________________________
___________________________________________________________________________________

ii. outside the host cell?
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___________________________________________________________________________________
Q.3. (Total 4 Marks)

a. State any TWO roles of mesosomes in a bacterial cell. (2 Marks)

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b. Describe briefly the process of reproduction in bacteria as shown in the diagram. (2 Marks)

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Q.4. (Total 4 Marks)
State any FOUR features of plant like protists.
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Q.5. (Total 6 Marks)
a. Describe how mycorrhizal association is an example of mutualism. (3 Marks)
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b. Fill in the following information for ascomycetes. (3 Marks)
   Group: Ascomycetes
   Hyphae: ____________________________________
   Sexual reproduction: __________________________
   Asexual reproduction: _________________________
Q.6. (Total 5 Marks)

a. What do you mean by the term ‘pentamerous’? (1 Mark)

b. Given are the characteristics of a plant of family Y. Draw EACH characteristic separately to see what the flowers of family Y would look like. (Do NOT draw the floral diagram) (4 Marks)

<table>
<thead>
<tr>
<th>Inflorescence:</th>
<th>Flower:</th>
<th>Androecium:</th>
<th>Gynoecium:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solitary</td>
<td>Zygomorphic</td>
<td>Diadelphous</td>
<td>Superior ovary</td>
</tr>
</tbody>
</table>
Q.7. (Total 5 Marks)

a. Mention THREE exclusive features of the animal shown in the diagram which make it different from other arthropods. (3 Marks)

b. Describe the role of NAD in Kreb’s cycle. (2 Marks)
Q.8.  

(Total 4 Marks)

Mention the cause and TWO symptoms of each of the following respiratory disorders.

i.  Sinusitis: __________________________________________________________

________________________________________________________

________________________________________________________

ii. Pneumonia: ______________________________________________________

________________________________________________________

________________________________________________________
Q.9. (Total 4 Marks)

The diagram shows some specialized cells of plants.

i. Identify cell M.

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___________________________________________________________________________________

ii. Describe how cell M is necessary for the functioning of phloem.

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Q.10. (Total 5 Marks)

EITHER

a. What are the bases of classification of enzymes? Describe any THREE examples of enzymes with reference to any ONE basis.

OR

b. Describe in detail the structure and function of endoplasmic reticulum.
Q.11. (Total 5 Marks)

EITHER

a. A few pollen grains brought by an insect to a flower lead towards the creation of a new plant. Explain the given statement with reference to the life cycle of a flowering plant.

OR

b. ‘We need insects for global survival.’ Do you agree or disagree? Discuss the given statement with at least THREE supporting examples.
Q.12. (Total 5 Marks)  

EITHER  

a. Describe what happens to the molecules of starch from the moment they enter into the buccal cavity till the time they enter into the blood.  

OR  

b. Which part of the heart is also referred to as the pacemaker? Explain with reference to the location and function of this part of the heart.