

**CHRISTIAN SOCIAL SERVICES COMMISSION (CSSC)  
NORTHERN ZONE JOINT EXAMINATIONS SYNDICATE (NZ-JES)**



**FORM SIX PRE-NATIONAL EXAMINATIONS 2026**

**131/1**

**BIOLOGY 1**

**Time: 3:00 Hours**

**Wednesday, 25<sup>th</sup> February 2026 p.m**

---

**Instructions**

1. This paper consists of **two** sections **A** and **B** with the total of **ten (10)** questions.
2. Answer **all** questions in section **A** and any **two** questions from section **B**.
3. **All** drawings should be done using pencil and **all** writing should be in blue / black pen.
4. Cellular phones are **not** allowed in examination room.
5. Write your **examination number** on each page of your answer booklet(s).

## SECTION A (70 Marks)

Answer all questions

1. (a) Due to increased understanding on cell biology the “Concept of cell theory” has been challenged based on the modern knowledge of virology blood cell and origin of life. Give **five (5)** points to justify the statement.  
(b) Early research on cytoplasmic organelles revealed that mitochondria were formerly aerobic prokaryotes that invaded an ancestral eukaryotic cell and learn to live symbiotically within it. As a recent cytologist, justify this statement by giving **five (5)** points.
2. (a) (i) By using ring formula show how condensation takes place in the formation of double sugar that naturally occurs in stem of sugar cane plants.  
(ii) A biologist teacher provided egg white and assigned form six students to mention three important procedures used to test protein and state expected observation. Give the required response to the above statement.  
(b) In the year 1943, Bloor proposed the classification of lipids based on their composition, briefly show this classification.
3. (a) Describe how polysperm is prevented in mammals?  
(b) The chromosome number in radical of a certain species of flowering plant is 16. Giving reasons. Calculate the number of chromosome in each of the following cells.  
(i) Pollen tube nucleus (ii) Antipodal cells (iii) Endosperm  
(iv) Endosperm (v) Pollen mother cells (vi) Integuments
4. (a) Explain the challenges of assigning name to a newly discovered organisms.  
(b) Taxonomist prefer to use mangifera indica for a mango. Write down **five (5)** reasons as to why mangifera indica is more biologically significant to the taxonomist than the name mango.
5. (a) Explain the advantages of the following  
(i) Refractory period (ii) Adaptation  
(b) Differentiate between rods and cones. Give any **four** points.  
(c) Transmission speed is among the characteristics of nerve impulse as if is determined by a certain factor. In **three** points justify the statement.
6. (a) In some plant species during condition D compound K combine with oxygen under the influence of enzyme M to form compound N and 3 – PGA, then compound N undergoes a series of reaction involving three different organelles to form 3 – PGA.  
(i) Give the name of condition D (ii) Give the name of enzyme M  
(iii) Give the name of compound K and N.  
(iv) Name **three** organelles involved in the conversion of compound N to PGA.  
(v) With one reason specify which plant species is condition D likely to take place.  
(b) When the chlorophyll absorbs light it loses an electrons and become positively charged. In this oxidized state the chlorophyll become “Electron hungry”. What does this phrase of words mean?
7. (a) What is the role of the mucus and surfactant secreted by the epithelium of lining of the nasal passage and alveolus respectively?  
(b) Glycolysis leads to formation of pyruvie acid. How is the pymvie acid converted into ethanol. Explain by giving **two** points.  
(c) The volume of air exchanged in the alveoli’s is infarct less than that of pulmonary ventilation. Suggest why this is the case.

## SECTION B (30 Marks)

Answer **two (2)** questions from this section

8. Describe stages involved in formation of pyruvate from glycolysis.
9. (a) A structure Q is a band like thickening in the center of root endodermis of vascular plants and it is impervious to water in order to allow easy transportation of water and mineral ions  
(i) Identify structure Q (ii) Give four roles of structure Q  
(b) Describe the munch’s mass flow hypothesis model.
10. (a) Briefly explain **five (5)** changes that occur to a flow after fertilization.  
(b) State **five (5)** advantages of reproduction by seeds.