

**Bago University**  
**Department of Botany**  
**First Semester Examination, March, 2019**

**Second Year (B.Sc.)**  
**Botany Specialization**  
**Answer All Questions**

**Bot.2105**  
**Introduction to Evolution**  
**Time allowed: (3) Hours**

**Determine whether each statement is TRUE or FALSE.**

**(10 marks)**

1. Life might have formed as a by-product of volcanic activity.
2. Well-developed stromatolites from 2.7 Ga successions are found in many places.
3.  $\text{CH}_2$  radicals produced by methane photolysis in the troposphere.
4. Organisms affect the composition of the atmosphere in several significant ways.
5. Cysteine was found in the photolysis of  $\text{CH}_4$ ,  $\text{NH}_3$ ,  $\text{H}_2\text{O}$ , and  $\text{H}_2\text{S}$ .
6. Living cells today are assemblages that includes very small molecules.
7. RNA catalysts being to translate strings of RNA letters into chains of proteins.
8. The prokaryotic cells are usually much smaller than eukaryotic cells.
9. Mitochondria are believed to have descended from an  $\alpha$ -proteobacterial ancestor.
10. Multicellularity developed in prokaryotes prior to eukaryotes evolution.

**Write correct word to complete the following sentences.**

**(10 marks)**

1. The Earth's surface was likely covered with a ----- rock.
2. The primitive bacteria are descended from the pioneering-----.
3. The high concentration of ----- needed to keep the contemporary biosphere.
4. The amino acid requires the presence of  $\text{NH}_4^+$  in the ----- ocean.
5. The early bubbles that gave rise to cells were lipid or -----.
6. Nucleic acids and ----- play in a key role in life processes.
7. Polypeptides are more efficient catalysts than -----.
8. In prokaryotes, ribosomes are found free in the -----.
9. A methane-producing archaeobacteria called -----.
10. The earliest animal that still exists is the -----.

**Answer all questions.**

**(10 marks)**

1. How to form Ozone layer?
2. Explain about the pyrolysis.
3. State the other prebiotic compounds.
4. Give an account on DNA as heredity materials.
5. Briefly explain the hydrogen hypothesis.

**Answer all questions.**

**(20 marks)**

1. Describe the prebiotic Hadean environment.
2. Explain the hypothesis of Oparin and Haldane.
3. Give an account the structural organization from atoms to macromolecules.
4. Briefly discuss the survivors of extreme earth's environment.

**Answer any three questions.**

**(30 marks)**

1. Mention about  $\text{CO}_2$  level in primitive earth.
2. Discuss about the evidence from iron formations.
3. Describe the primitive enzyme and heredity compound.
4. Give an account on the evolution of metabolism.
5. Write detail the origin of mitochondria and chloroplasts.