

Bago University
Department of Zoology
First Semester Examination, March 2019

Fourth Year BSc
(Zoology Specialization)
Answer ALL questions

Zool.4103
Biotechnology I
Time Allowed: (3) Hours

- I. State TRUE OR FALSE to the following statements. (10 marks)**
1. Biotechnology will increasingly affect the efficiency of all fields.
 2. Mutation is a chemical deletion or addition of one or more of the chemical parts of the DNA molecule.
 3. Two molecular biology techniques are PCR and DNA sequencing.
 4. Individual chromosomes contain a thousand of sequences.
 5. Enzyme phospholipase A2 is widely used as a food emulsifier.
 6. Environmental biotechnology is the branch of biotechnology.
 7. There are two key points for environmental biotechnology.
 8. A material may have tested as biodegrading at a low rate in the lab.
 9. Biological oxygen demand means the amount of dissolved oxygen required by aerobic microorganisms.
 10. Molecular biology techniques are used to genetic engineer in animal biotechnology.
- II. Complete the following statements with appropriate words. (10 marks)**
1. The term genetic engineering was first used in -----.
 2. There are two broad categories of genes-structural and -----.
 3. Method of separation and identification relied upon gel ----- and auto radiography.
 4. The future market growth of ----- products is largely assured.
 5. All biotechnological processes are essentially performed within -----.
 6. Solid, liquid, and gaseous wastes can be modified by ----- to new products.
 7. The ----- rate of many organic compound is limited by their bioavailability.
 8. Microbial aggregates or -----that can be separated from the purified effluent via sedimentation.
 9. The use of gene ----- can change the human gene.
 10. A vector such as a virus has been specifically modified to take the -----along with it.
- III. Answer All questions. (10 marks)**
1. Mention the term "biotechnology".
 2. Describe the catalytic function of the enzyme.
 3. Tabulate the compounds approximated time to biodegrade more than 100 years.
 4. Describe the term Bioremediation.
 5. Describe the major goals of vaccine research.
- IV. Answer All questions. (20 marks)**
1. Tabulate the advantages and disadvantages of producing organic compounds by biological rather than chemical means.
 2. Mention the use of microorganisms for enzyme production.
 3. Briefly discuss the advantages of biotechnological treatment of wastes.
 4. Write short notes on the types of biological pollutants.
- V. Answer Any THREE questions. (30 marks)**
1. Describe briefly on the some selected definitions of biotechnology.
 2. Discuss precisely on traditional forms of bioprocess technology.
 3. Tabulate source organisms for selected enzyme products.
 4. Explain detail about the processing of biofragmentation.
 5. State the composting process recycles waste products to soil conditioner.
 6. Explain the potential application of somatic cell nuclear transfer.
