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FACULTY OF ALLIED HEALTH SCIENCES, UNIVERSITY OF RUHUNA
Department of Medical Laboratory Science
Year End Examination – Year 3 - 8th Batch
Biotechnology (MLS 3104) – SEQ

Date: 07th of November 2019

Time: 10.15 a.m. – 11.15 a.m.

Duration: 01 hour

Answer all questions

Index Number:

1. Enzymes are involved in facilitating the metabolic pathways by reducing the activation energy.
- 1.1. Genes play a major role in regulation of enzyme activity.
- 1.1.1. Briefly describe following terms.
- a. Operon (15 marks)
 - b. Constitutive gene (10 marks)
 - c. Inducible gene (10 marks)
 - d. Repressible gene (10 marks)
- 1.2. Inhibitors are important in controlling enzyme activity.
- 1.2.1. Briefly describe the following
- a. Negative feedback inhibition (10 marks)
 - b. Competitive inhibition (10 marks)
 - c. Non-competitive inhibition (10 marks)
- 1.3. List four factors affecting the enzyme function (10 marks)
- 1.4. Briefly describe the use of enzymes as an analytical agent to detect glucose in biological fluids (15 marks)
- 2.
- 2.1. A gene library is a set of cloned fragments that collectively represent the genes of a particular organism.
- 2.1.1. Briefly describe the following.
- a. Genomic library (20 marks)
 - b. cDNA library (20 marks)
- 2.1.2. Briefly describe the construction of a genomic library. (15 marks)
- 2.1.3. List different methods used in screening of gene libraries. (15 marks)
- 2.2. Different methods are used in protein purification.
- 2.2.1. List the different methods used in disruption of cells. (10 marks)
- 2.2.2. Briefly describe the High-Performance Liquid Chromatography (HPLC) of proteins. (20 marks)

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