

UNIVERSITY OF JAFFNA, SRI LANKA
 BACHELOR OF SCIENCE IN MEDICAL LABORATORY SCIENCES
 FOURTH YEAR SECOND SEMESTER EXAMINATION- APRIL 2020



MLSBM 4233 BIOTECHNOLOGY AND MOLECULARBIOLOGY II

Date: 22.07.2020

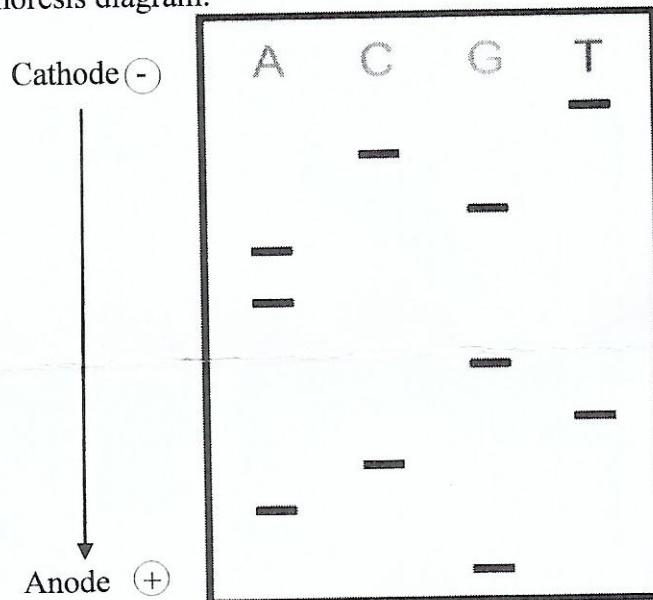
Time: 1 Hour

ANSWER ALL FOUR QUESTIONS.

1.

1.1. Describe the Sanger's method in DNA sequencing. (55 Marks)

1.2. Deduce the sequence of the template DNA from the given PAGE gel electrophoresis diagram. (10 Marks)



1.3. Compare the advantages of DNA sequencing by automated and manual methods. (35 Marks)

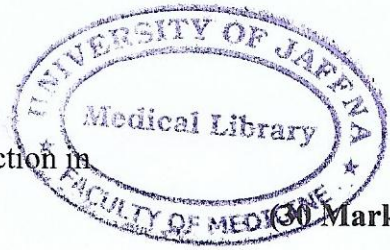
2.

2.1. Define gene therapy. (10 Marks)

2.2. Compare *in vivo* and *ex vivo* gene therapy. (30 Marks)

2.3. Outline the challenges in gene therapy with reasons. (30 Marks)

2.4. Compare the advantages and disadvantages of Nested PCR with conventional PCR. (30 Marks)



3.

3.1. List the factors which affect the amplification reaction in conventional PCR. (30 Marks)

3.2. Briefly describe how the above mentioned factors influence the amplification reaction. (70 Marks)

4. Write notes on

4.1. Oncogene (30 Marks)

4.2. Types of chromosomal deletions (40 Marks)

4.3. Genetic variations associated with Down syndrome (30 Marks)