

**The Open University of Sri Lanka**  
**Bachelor of Medical Laboratory Sciences (B.MLS)**



**MLU4245- Cytogenetics and Molecular Genetics**

**Semester 01- Academic year 2015/2016**

**No Book Test 02**

***Return your question paper with the answer sheet***

**Date: 16.05.2016**

**Duration – 1 ½ hours**

**Time: 10.00am- 11.30am**

**Registration No:.....**

**Please read the following instructions carefully before you answer the paper.**

**(100 marks)**

**Part A: Multiple Choice Questions (20 marks)**

There are ten (10) multiple choice questions in this paper, each question with five responses. Select the **correct response** and encircle the correct response in the paper itself.

**Part B: True/ False Questions (10 marks)**

You are given ten (10) True / False questions. State whether they are “True” or “False” by underlining the correct response.

**Part C: Short Answer Questions (40 marks)**

You are given two (02) short answer questions. Each question contains four (04) parts. Answer all the questions in the given papers.

**Part D: Short Essay Question (30 marks)**

There are two (02) short essay questions. Each question contains three (03) parts. Answer all the questions in the given papers.

**Good Luck!**

### Part B: True/ False Questions (10 marks)

State whether they are "True" or "False" by underlining the correct response

1. During medical procedures that involve tissue removal, tissues can either be destroyed or preserved for research. (True/False)
2. Ethics is justified sets of principles and values. (True/False)
3. Personalized medicine analyzes a person's DNA to prescribe drugs to better treat their illnesses. (True/False)
4. Reproductive cloning creates genetically non- identical organism. (True/False)
5. Gene therapy is a technique for correcting defective genes that are responsible for disease development. (True/False)
6. PCR cannot be used in biodiversity studies. (True/False)
7. Chloroform increases phenol's phase density in DNA extraction. (True/False)
8. Sanger di-deoxy method is not the most popular protocol for sequencing. (True/False)
9. The sequence is recorded by an automated sequencer as an "electropherogram". (True/False)
10. The "shotgun" method cannot be used to sequence large pieces of DNA. (True/False)

**Part C: Short Answer Questions (40 marks)**

Answer all the questions in the papers provided to you.

1.
  - 1.1 What is called as DNA fingerprinting? (03 marks)
  - 1.2 What is the basic principle of DNA fingerprinting? (05 marks)
  - 1.3 Write two (02) different types of DNA fingerprinting methods available. (06 marks)
  - 1.4 What are the applications of DNA fingerprinting? (06 marks)
2.
  - 2.1 List six (06) samples used for DNA extraction. (06 marks)
  - 2.2 What are the essential components of a DNA extraction procedure? (06 marks)
  - 2.3 Write four (04) different types of DNA extraction procedures. (04 marks)
  - 2.4 Mention one technique used to quantify the DNA after extraction. (04 marks)

**Part D: Short Essay Question (30 marks)**

There are two (02) short essay questions. Answer all the questions in given papers.

1.
  - 1.1 Write the different types of DNA sequencing methods available. (05 marks)
  - 1.2 What are the advantages and disadvantages of next generation sequencing? (07 marks)
  - 1.3 What is the purpose of whole genome sequencing? (03 marks)
2.
  - 2.1 Briefly explain the steps in PCR. (08 marks)
  - 2.2 What are the uses of PCR. (04 marks)
  - 2.3 Write commonly used PCR methods in research and diagnostics. (03 marks)

-----THE END-----

