

Module Description

Module title: Molecular Biology– practical part.

Module code: BCH 361

Year: 1444 H (2022) – First semester.

Module objectives:

- Practical knowledge in the molecular biology field.
- Understand the principles behind basics molecular biology techniques.
- Working in basic experiments of molecular biology lab.

Mark distribution:

Total mark is 30:

- 5 marks for quizzes.
- 5 marks for analysis sheet.
- 2 marks for homework
- 5 marks for Lab Reports.
- 1 mark for lab performance.
- 12 marks for final exam **7 November 2022 (11:00-1:00)**

-Module experiments

| NO. | Experiment Title | Analysis sheet Homeworks | Quizzes |
|---|---|-----------------------------|---------|
| 0 | Introduction to Molecular Biology. | - | - |
| 1 | Preparation of Genomic DNA from Rat Blood. | Sheet # 1 | Quiz #1 |
| 2 | Extraction of RNA from Rat Blood (Kit). | | Quiz #2 |
| 3 | Characterization of DNA by Spectrophotometric Assay and Melting Temperature (tm). | Sheet # 2 | Quiz #3 |
| 4 | Agarose Gel Electrophoresis (AGE). | | |
| Report (1) submission ‘Includes lab# 1, 2, 3, and 4’(5 marks) (Monday section: October, 3) (Wednesday section: October, 12) | | | |
| 5 | cDNA Synthesis. | HW # 1 | Quiz #4 |
| 6 | Polymerase Chain Reaction (PCR) and Primer Design. | Sheet # 3 & HW # 2 | Quiz #5 |
| 7 & 8 | PCR - Optimization of Annealing Temperature. PCR Troubleshooting. | Sheet #4 | Quiz #6 |
| Report (2) submission ‘Includes lab# 6, 7, and 8’(5 marks) (Monday section: October, 31) (Wednesday section: November, 2) | | | |
| 9 | Sanger Sequencing. | HW # 3 | - |