

**W1-2-60-1-6**

## JOMO KENYATTA UNIVERSITY

**OF**

**AGRICULTURE AND TECHNOLOGY**

# University Examinations 2016/2017

**YEAR 4 SEMESTER II EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN GENOMIC SCIENCE**

**SZL 2428: BIOINFORMATICS**

**DATE: June 2017 TIME: 2 HOURS**

**Instructions: Answer Question One (Compulsory) and Any Other Two Questions.**

**QUESTION ONE (30 MARKS)**

1. Describe briefly primary and secondary databases. (6marks)
2. Distinguish between pairwise and local sequence alignment. (6marks)
3. Describe briefly the principle of electrospray ionization technique of protein identification. (6marks)
4. Distinguish between swiss-prot and uniprot protein database. (6marks)
5. i. Explain data ware housing (1mark)

ii. Describe briefly preprocessing data during data mining process. (5marks)

**QUESTION TWO (20 MARKS)**

Describe the following techniques of protein analysis.

1. 2D protein electrophoresis. (8marks)
2. Mass spectrometry (12marks)

**QUESTION THREE (20 MARKS)**

Discuss different ways of identifying similarities and differences in nucleotide and protein sequences. (20marks)

**QUESTION FOUR (20 MARKS)**

1. Discuss characteristic features of Swiss-prot and Unit-prot. (10marks)
2. Discuss tasks of data mining (10marks)

**QUESTION FIVE (20 MARKS)**

Describe the architecture of data mining. (20marks)