***Discipline Genetic engineering and biosafety***

Assignments for the CDS

***Assignments for the CDS 1*.** Creation of animal model organisms of human diseases. Producing hormones, vaccines and other drugs genetic engineering has the potential to cure genetic diseases through gene therapy. Presentation of results of performance: The written decision or situational problems. Dangerous of genetic engineering and its advantage. DNA Separation Techniques. Construction of Small RNA cDNA Libraries for Deep Sequencing MicroRNA-Profiling in Formalin-Fixed Paraffin-Embedded Specimens Functional Analysis of miRNAs in the Immune System: Gain-of-Function Expression of miRNAs in Lymphocytes.

***Assignments for the CDS* 2**Whole-protein mass analysis is primarily conducted using either time-of-flight (TOF) MS, or Fourier transform ion cyclotron resonance (FT-ICR). **Presentation of results of performance:** The written decision or situational problems.

***Assignments for the CDS 3*** Limitations of DNA microarrays. Protein sequencing by chemical methods. Protein sequencing by mass spectrometry

***Assignments for the CDS 4.* Collection and analysis of microarry. Applications of** four families of engineered nucleases in genome editing.

Advantages of the Cas9-guideRNA system (adapted from CRISPR) in genome editing.

To measure changes in the level of gene expression

To observe DNA mutations

# To study genomic gains and losses

# *Assignments for the CDS 5.* Practical applications of Different types of PCR in genetic engeering..

Several modifications of PCR methods have been developed to enhance the utility of this method in diagnostic settings based on their applications. Some of the common types of PCR are:

Real-Time PCR

Nested PCR

Multiplex PCR

Quantitative PCR

Arbitrary Primed PCR.