Assignment 7

The due date for submitting this assignment has passed.

As per our records you have not submitted this assignment.

1. Which of the following genome editing technologies is identified to be the most feasible for genome editing compared to others?  
   - TALENS  
   - Meganucleases  
   - Zinc finger nucleases  
   - CRISPR-Cas9  
   Scoring: 0  
   Accepted Answers:  
   - CRISPR-Cas9

   1 point

2. One of the major advantages of genome editing technology is:  
   - Selectable marker genes insertion are necessary.  
   - Targeted genomic DNA sequences are modified in vivo.  
   - Targeted genomic DNA sequences are modified in vitro.  
   - Selection of transforming by using selection marker genes are possible.  
   Scoring: 0  
   Accepted Answers:  
   - Targeted genomic DNA sequences are modified in vitro.

   1 point

3. Accumulation of task intermediates and low catalytic efficiency are common problems for engineered homologous or heterogeneous multigene pathways. Therefore, pathways should be constructed optimally to minimize the negative effects by using:  
   - Metabolic engineering strategies.  
   - Reconstituted DNA technology.  
   - A combination of metabolic engineering and synthetic biology strategies  
   - Transgenic technology  
   Scoring: 0  
   Accepted Answers:  
   - A combination of metabolic engineering and synthetic biology strategies

   1 point

4. Replacing the promoter and changing the RBS (Ribosome Binding Site) can control the gene expression at:  
   - Transcriptional and translational levels, respectively  
   - Replication and transcriptional levels, respectively  
   - Transcriptional level only  
   - Epigenetic level and transcriptional level  
   Scoring: 0  
   Accepted Answers:  
   - Transcriptional and translational levels, respectively

   1 point

5. Choose the incorrect statement about CRISPR loci:  
   - A. It is composed of unique repeats.  
   - B. It is composed of alternate identical repeats and unique spacers  
   - C. Repeat sequences averaging 32 bp are interspersed by variable spacer sequences of approximately same size.  
   - D. CRISPR-associated (cas) genes surround CRISPR loci  
   Scoring: 0  
   Accepted Answers:  
   - B. It is composed of alternate identical repeats and unique spacers

   1 point

6. Which of the following processes help the system to provide first memory of the infection in CRISPR-Cas mediated immunity?  
   - A. Adaptation  
   - B. Interference  
   - C. Biogenesis  
   - D. Invasion  
   Scoring: 0  
   Accepted Answers:  
   - A. Adaptation

   1 point

7. Interference by Type II CRISPR-Cas system is accomplished by:  
   - A. A single effector protein  
   - B. A multiprotein complex  
   - C. RNase  
   - D. TALENS  
   Scoring: 0  
   Accepted Answers:  
   - D. TALENS

   1 point

8. Editing cannot occur by using CRISPR-Cas technique at any site devoid of:  
   - A. R-loop  
   - B. Protospacer Adjacent Motif (PAM)  
   - C. CRISPR array  
   - D. Specific protein complex  
   Scoring: 0  
   Accepted Answers:  
   - B. Protospacer Adjacent Motif (PAM)

   1 point

9. CRISPR-Cas system which is capable of targeting DNA and RNAs jointly:  
   - A. Type II  
   - B. Type III  
   - C. Type I  
   - D. Type IV  
   Scoring: 0  
   Accepted Answers:  
   - B. Type III

   1 point

10. Select whether the following statement is True (T) or False (F): "Endonuclease activity is absent in dead"  
    - A. True  
    - B. False  
    Scoring: 0  
    Accepted Answers:  
    - A. True

   1 point