

Academic board , Class of 2022

Dzudzor's take home assignments compiled

Recombinant DNA technology

1. Which shape of macromolecule in the cell should look like Recycling factor
2. How does puromycin inhibit elongation?
3. What is common to gamma rays , beta rays and so on ?
4. In PCR why do we need more primers than templates ?
5. What is it about the Tryptophan Operon ?
6. Why can we we express only complementary DNA of eukaryotic gene in bacteria ?
7. What is polymorphism?
8. Differentiate between STR and VNTR?
9. State the full meaning of HLA
10. Why is the dNTP , ddNTP ratio 100:1 in the Sanger dideoxy sequencing ?
11. Why do we read the sequence from the cell electrophoresis from bottom to top?
12. Why is the alpha phosphate the only labelled one in the Sanger sequencing?
13. Difference between PCR and Sanger sequencing ?

Pre mRNA sequencing

1. Why are rRNA genes clustered together in one locus in Eukaryotes though genes are not clustered in Eukaryotes ?
2. What are the esterification reactions in splicing?
3. What determines intron length?
4. How do you identify the branch site and 5' splice site ?
5. Why are some IgM released into plasma (secreted) but others are membrane bound ?
6. Why is that hitherto the exact number of proteins produced by the human genes cannot be determined ?
7. Differentiate between group I and II introns
8. What is the structural basis for the bulging of the A at the branch site ?
9. What is the function of U5?
10. Explain why not all exons serve as coding sequences.

Protein synthesis

1. What is the role of GTP hydrolysis in synthesis?
2. What is meant by the degeneracy of the codons ?
3. Note the various types of mutations and how they come about by nucleotide changes .

4. Why should puromycin terminate translation when inhibited?
5. Where does puromycin bind to?
6. Why is puromycin not used as a drug?
7. Differentiate between eukaryotic translation and prokaryotic translation .
8. How does diphtheria manifest?