

Q1/ define the following? (10 marks)

1. Gene Cloning
  2. Recombinant Plasmid
  3. T4 DNA ligase
  4. Competent Cells
  5. BL21
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Q2/

- A. write about Plasmid isolation? Enumerate steps. (5 M)
  - B. Enumerate type of plasmid regarding their ability to be transferred? (5 M)
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Q3/ what are the following abbreviations stand for? (10M)

1. NCBI
  2. F-plasmid
  3. RE
  4. TaqI
  5. Taq polymerase
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Q4/ (10)

- A. What are positive roles of transformation in bacteria? 1 sentence.
  - B. What are the aims of RE in Biotechnology?
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Q5/ write the purpose for the following materials and techniques? (answer 5)  
(10 marks)

1. Calcium chloride
2. NGS (The most accurate way)
3. Binding column
4. Sonicator
5. Concentrator
6. IPTG

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