**NORTH POINT SENIOR SECONDARY BOARDING SCHOOL; RAJARHAT**

**Class : XII Science (2020-21)**

**Subject : Biology**

**Assignment of chapter 10: "BIOTECHNOLOGY : PRINCIPLES AND PROCESSES"**

**Write the answers of the following questions:**

**1. Write the definition of Biotechnology.**

**2. State Biotechnology as defined by EFB.**

**3. What technical term of "Biological/Molecular Scissor"?**

**4. Name the Site/Location/Sequence of DNA where, Molecular Scissor cuts.**

**5. Define Plasmid.**

**6. Name the bacteria from which first Plasmid was isolated to make rDNA.**

**7. Write the basic steps to form GMOs.**

**8. Expand EFB.**

**9. How many types of Restriction Endonuclease are known till today?**

**10. How many strains of Bacteria were used to isolate all the types of Restriction Endonucleases known till date?**

**11. Define the term Cloning.**

**12. What do you mean by Genetic Engineering?**

**13. Show the action of the enzyme which is used to prepare​ the first recombinant protein diagrammatically.**

**14. In which backbone of DNA is been cut by Molecular Scissor?**

**15. Differentiate between Endonuclease and Exonuclease.**

**16. Why the base of agarose gel-electrophoresis kit is Anode in nature?**

**17. What do you mean by Elution?**

**18. Name the florescent stain which is used to view DNA fragments in UV radiation.**

**19. How can you isolate and purify DNA of pea plant?**

**20. Write any five methods of Competent Host for Transformation with rDNA.**

**21. How many copies of Plasmid may have per cell?**

**22. Describe rDNA technology diagrammatically.**

**23. Name the first recombinant protein.**

**24. Give the nomenclature of:**

 **i) Taq polymerase**

 **ii) pBR322.**

**25. What is the biggest challenge of Scientists to make PCR? How was it solved?**

**26. What are the steps of one cycle of PCR?**

**27. What do you mean by Primer?**

**28. Write two functions of Antibiotic resistance gene in vector.**

**29. Differentiate between:**

**a) Transformant and Non-Transformant.**

**b) Recombinant and Non-Recombinant.**

**c) Simple stirred-tank bioreactor and Sparged stirred-tank bioreactor.**

**30. How Chromogenic Substrate (Insertional inactivation) helps in selecting Recombinant from Non-Recombinant?**

**31. What is the use of Cloning Site?**

**32. Name the bacteria which causes tumour in Dicot plant. Name the Plasmid present in this bacteria.**