



**PART- B**

**5x6=30**

**Answer ALL questions**

**Answer should not exceed 400 words or two pages.**

11. a) Write short notes on Restriction enzymes.  
(Or)  
11. b) Describe the process of ligation.
12. a) Explain the process of PCR Techniques.  
(Or)  
12. b) Write short notes on purification of DNA from plants and animals.
13. a) Explain reporter gene-CAT and luciferase.  
(Or)  
13. b) Describe the GFP-Oligonucleotide directed mutagenesis.
14. a) Discuss about gene therapy in agriculture  
(Or)  
14. b) Describe the role of genetic engineering for pharmaceutical applications.
15. a) Write a short notes on bone tissue engineering.  
(Or)  
15. b) Describe nanometer scale and its importance in biology.

**PART -C**

**5X12=60**

**Answer ALL questions**

**Answer should not exceed 800 words or two pages**

16. a) Explain the pUC vectors, phage vectors and YAC expression vectors  
(Or)  
16. b) Describe the Viral vectors, plasmid DNA and phage DNA.
17. a) Discuss about the construction of genomic library  
(Or)  
17. b) Write a detailed notes on DNA sequencing method.
18. a) Explain the detailed mechanism of DNA microarray techniques.  
(Or)  
18. b) Write a detailed notes on HRT and HART and explain how they are used in DNA foot printing.
- 19 a) Explain the application of genetic engineering in virus, insect and herbicide resistant plants. (Or)  
19. b) Explain the intellectual property rights and patenting issues.
20. a) Describe the biosensors of cellulose nano fibrils for characterization of biosensors (Or)  
20. b) Explain the lignin, cellulose, and chitin nanoscopic biomaterials

\*\*\*\*\*