



Notes : 1. All questions are compulsory and carry equal marks.

1. Explain polymerase chain reaction in detail. Write different types of PCR. **10**

**OR**

Describe in detail the structure of PBR 322 and explain its role as vector. **10**

2. Describe the methods for the screening of recombinants. **10**

**OR**

Describe the production of interferon with the help of flow sheet diagram. **10**

3. a) Discuss the role of alkaline phosphatases as DNA manipulating enzyme. **2½**

b) Describe YAC as vector. **2½**

c) Explain U-tube experiment for transformation. **2½**

d) Add a note on somatic gene therapy. **2½**

**OR**

e) Discuss in short homopolymer tailing for insertion of DNA. **2½**

f) What are phagemid vectors? Explain their role. **2½**

g) Discuss microinjection method for insertion of DNA. **2½**

h) Explain genetic counseling for disease diagnosis. **2½**

4. a) Add a note on genomic DNA Library. **2½**

b) Write the importance of linkers and adapters. **2½**

c) Discuss about lipofection. **2½**

d) Describe DNA fingerprinting. **2½**

**OR**

e) Describe shotgun method for the isolation of DNA. **2½**

f) Write the ideal characteristics of vectors. **2½**

g) Explain DEAE – Dextran mediated transfection. 2½

h) Write the applications of monoclonal antibodies. 2½

5. Attempt **any ten** one mark each.

a) What are positive changes brought about by rDNA technology? 1

b) Write classes of restriction endonucleases. 1

c) Define cDNA? 1

d) Give full form PUC 18/19? 1

e) What are BAC? 1

f) What are cosmid vectors? 1

g) Give the use of particle gun method. 1

h) Who discovered the process of transfections? 1

i) Name the filter used in transformation. 1

j) What is interferon? 1

k) Write the importance of antenatal diagnosis. 1

l) What is gene therapy? 1

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