

Biotechnology Question Bank

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Unit-III

2 Marks

1. Define nucleoside
2. Define nucleotide
3. Distinguish between purine and pyrimidine.
4. What is genetic RNA?
5. What is non-genetic RNA?
6. Differentiate between prokaryotic mRNA and eukaryotic mRNA.

6 Marks

1. Distinguish between DNA and RNA.
2. Describe the different types of RNA
3. Describe the types of DNA

10 Marks

1. Explain the structures, types, and functions of DNA and RNA.

Unit-IV

2 marks

1. Define Biotechnology
2. What is agricultural biotechnology?
3. What is plant tissue culture?
4. Define totipotency.
5. Define morphogenesis.
6. Define embryogenesis.
7. Define explant.
8. Define re-differentiation.
9. Define de-differentiation.
10. Define callus.
11. Define caulogenesis.
12. Define rhizogenesis.
13. Define clonal propagation.
14. What is anther culture or androgenesis?
15. State the applications of anther culture.
16. What is ovary culture or gynogenesis?
17. What is meristem culture?
18. List out the any four applications of meristem culture.
19. Define synthetic seeds.

6 marks

1. Write the important history of biotechnology.
2. Write the important history of plant tissue culture.
3. State the importance of plant tissue culture.
4. What is ovary culture? Discuss the ovary culture's importance and limitations.
5. Write down the applications of meristem culture.
6. Describe the cryopreservation method. Write the application of cryopreservation.
7. Discuss the types of synthetic seeds with their merits and demerits.
8. Explain the protoplast isolation and fusion techniques.
9. Write the application of soma clonal variation.

10 Marks

1. What is anther culture? Describe procedure, factors influencing, applications and limitations of anther culture.
2. What is ovule culture? Describe procedure, importance and limitations of ovule culture.

Unit-V**2 Marks**

1. What is rDNA technology?
2. What is a GM crop?
3. Write the expansion for SSR, RAPD, RFLP, and AFLP.
4. How are transgenic plants formed?
5. What are the benefits of transgenic plants?
6. What are the disadvantages of transgenic plants?

6 marks

1. Describe marker-assisted selection in crop plants.
2. Write about the merits and demerits of marker assisted selection.
3. Evaluate the RFLP and RAPD markers.
4. Write down the application of GM technology in crop plants.
5. Differentiate between conventional breeding and molecular breeding.

10 marks

1. Explain DNA markers and their application for crop improvement.
2. Discuss the methods of transgene insertion in plants. Write down the application of GM crops and their potential risks.