

**ST. JOSEPH'S COLLEGE OF ARTS & SCIENCE (AUTONOMOUS)
CUDDALORE – 607 001**

PG & RESEARCH DEPARTMENT OF BIOCHEMISTRY

Subject Name: Biotechnology

Subject Code: BC612S

Class: III B.Sc Biochemistry

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SECTION- A

1. Define plasmid
2. Define Cell lines
3. Recombinant vaccine
4. Sterilization
5. Transgenic animals
6. Micropropagation
7. Synthetic media
8. What is Ti plasmid?
9. Define Batch culture.
10. What is Trypsinization?
11. What is DNA vaccine?
12. Define Hybridoma.
13. What is Somaclonal variation?
14. Define Fermentation.
15. What is *in situ* sterilization?
16. Define protoplast fusion.
17. Give an example of RE.
18. What are shuttle vectors?
19. What is cell culture?
20. Define vaccine.
21. Define transgenesis
22. What is totipotency?
23. What is protoplast?
24. Define fermentation.
25. List out any two sterilization procedures in cell culture.

26. What are sticky and cohesive ends
27. What are cell adhesion molecules
28. Give a examples of recombinant vaccine
29. What is bioreactor?
30. Define genetic immunization
31. Define somatic embryogenesis
32. Give the components of tissue culture media
33. What is golden rice
34. Define YAC
35. What is a chimeric mouse?
36. What is suspension culture
37. What is a cloning vector?
38. Give examples for media.
39. What are Haploids?
40. What are spargers?
41. Give difference between fermenter and bioreactor
42. Define Bacteriophage.
43. Define embryogenesis.
44. Define continuous flow culture.
45. Give two applications of monoclonal antibodies.
46. What is Totipotency?
47. Define Callus.
48. Define Protoplast fusion.
49. What is stem cell?

SECTION – B

1. Explain Restriction and Modification enzymes.
2. Explain vector recombinant vaccine with examples.
3. Write note on *invitro* fertilization.
4. Describe phage vector.
5. Briefly describe primary explant technology.
6. Write about technique of transgenic animals.
7. List out secondary metabolites.
8. Write about the common features of fermentation.
9. What are plasmids? How do they work as cloning vector?
10. What are cell lines? How is the growth characteristics of cell lines determined?
11. What are transgenic animals? Write in brief about transgenic sheep.

12. What is a fermenter? How does it function?
13. Describe the important characteristics of vector M13.
14. Explain the types and features of cell lines.
15. Write a note on Hepatitis B vaccine.
16. What is somatic embryogenesis? Explain.
17. What are the factors affecting fermentation process?
18. How transgenic animals are produced by ES method
19. Write a note on media for industrial fermentation
20. What are cloning vector? Add a note on PBR322.
21. Write a note on subunit vaccine
22. List out the applications of haploids
23. Classify various types of fermentation process
24. Explain the role of growth regulators in plant tissue culture
25. What are plasmids? How do they work as cloning vector?
26. What are the advantages and disadvantages of adding serum in the animal culture medium?
27. List out the applications of transgenic animals.
28. What is micropropagation? Explain briefly.
29. Give short notes on primary explants technique.
30. Explain briefly about the production of Vaccines.
31. What are the factors that influence microbial growth?
32. Explain briefly about the types of cultures.

SECTION – C

1. Narrate the history and scope of Biotechnology.
2. Give a brief account on YAC.
3. Write notes on microinjection & electroporation.
4. Describe the types of cell culture process.
5. Discuss about production and application of monoclonal antibodies.
6. Give an account on somatic embryogenesis.
7. Classify fermentation process and explain in detail.
8. Describe briefly about organogenesis and embryogenesis in plant tissue culture.
9. Detail the production of secondary metabolites in plant tissue culture.
10. Discuss various types of culture process used in animal tissue culture.
11. Explain Ti plasmid. How it is used for plant transformation?
12. Explain the features and operation of a bioreactor.

13. Describe the techniques for the production of haploid plants.
14. List out the important techniques for primary culture and briefly describe its procedure.
15. Write in detail about the operation of conventional bioreactor with neat sketch.
16. Derive the steps involving subculture with neat diagram
17. Elaborate embryonic stem cell method involved in transgenic mice production.
18. Write the composition of commonly used plant tissue culture media.
19. Biotechnology is a multidisciplinary growing tree.
20. What is bioprocess technology? Classify.
21. How Hepatitis B Vaccines are produced?
22. Describe briefly about the animal cell culture.
23. Describe briefly about embryogenesis.
24. Classify fermentation process.
25. Give a brief account on isolation, identification & uses of stem cells.