

ST. JOSEPH'S COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)
PG & RESEARCH DEPARTMENT OF BIOCHEMISTRY
II M.Sc Biochemistry

SEMESTER: III

SUBJECT: ADVANCED BIOTECHNOLOGY.

SUBJECT CODE: PBC911S

PART- A

1. The enzyme Ecoli is isolated from_____
2. For the growth and development of cultured tissue, the pH of the medium should be maintained at_____
3. After fertilization embryo should be transferred to treated recipient female when it is in _____
4. Which of the following is the central atom in vitB₁₂_____
5. ----- have been characterized for decolouration of chromogenic dyes.
6. PBR 322 contains _____ antibiotic resistant gene.
7. The enzyme Ecoli is isolated from_____
8. For the growth and development of cultured tissue, the pH of the medium should be maintained at_____
9. After fertilization embryo should be transferred to treated recipient female when it is in_____
10. Which of the following is the central atom in vitB₁₂_____
11. ----- have been characterized for decolouration of chromogenic dyes.
12. The enzyme Ecoli is isolated from_____
13. Which of the following is the central atom in vitB₁₂?
14. ----- have been characterized for decolouration of chromogenic dyes
15. What is Ti plasmid?
16. What are cytokinins?
17. What is azoospermia?
18. Write the name of the bacteria which involved in the formation of ethanol through EMP pathway.
19. What are biofertilizers?
20. Give two examples for binary vectors.
- 21.. What are the two forms of suspension culture?
23. What are abzymes?
24. Which method in used for the production of antibiotics?

25. Write the waste /residue obtained from the following:
26. What is a restriction map?
26. What are transgenic animals?
27. What are biofertilizers?
28. What is totipotency?
29. What is Ti plasmid?
30. What are cytokinins?
31. What is azoospermia?

PART B

1. a) Write short notes on
 - i) Cloning vectors
 - ii) Phage λ .
2. Write short notes on a) Cosmid and plasmid vectors b) pBR 322
3. Write an account on organogenesis and its application
4. Write notes on a) Explant b) callus c) organogenesis
5. Give an account of invitro fertilization in humans
6. Give an account of Edible antibodies:
7. Discuss in brief the culture selection method of penicillium?
8. Give a detailed account of vit B12
9. What are industrial wastes? Write in detail their bioremediation Methods
10. What is biogas? In What ways biogas can be produced on sewage
11. Give an account on the marker genes used for gene transfer
12. Give an account on the reporting genes used as markers.
13. What is micro propagation? Describe the technique of micropropagation and discuss its different uses.
14. Explain somaclonal variation.
15. Describe different methods used in transgenic animals production.
16. Write the application of transgenic animals
17. What are the salient features of cloning vectors that make them suitable tools in biotechnology?
18. What are restriction enzymes? Comment on their specificity.
19. Comment on the composition and applications of MS medium.
20. Give a brief account of callus culture and its applications.
21. Why is vaccinia virus an ideal vector for large DNA transfer
22. Why is gene therapy an effective tool in future health care?
23. What is meant by a bioreactor? Identify their advantages over conventional industrial chemical synthesis.
24. Comment on the application of microbial fermenters in antibiotic production.
25. Comment on the applications of microbes in urban solid waste management.
26. What are xenobiotics? Comment on microbial application in their management.

27. Discuss in detail a) YACs b) BACs c) PACs.
28. What do you know about micropropagation? How does it differ from vegetative propagation.
29. Write the application of transgenic animals.
- 30.. Give a detailed account of formulation of growth medium and fermentation process of penicillin.
- 31.. Write a essay on Solid waste management.
32. Write short notes on i) Cloning vectors ii) Phage λ .
- 33 Short notes on a) Cosmid and plasmid vectors b) pBR 322
34. Write an account on organogenesis and its application
35. Write notes on a) Explant b) callus c) organogenesis
36. Give an account of invitro fertilization in humans

PART C

1. Discuss in detail a) YACs b) BACs c) PACs.
2. What do you know about micropropagation? How does it differ from vegetative propagation.
3. Write the application of transgenic animals.
b) What is biogas? In What ways biogas can be produced on sewage
4. Give a detailed account of formulation of growth medium and fermentation process of penicillin.
5. Write a essay on Solid waste management.
6. Write short notes on
a) Phage λ b) Restriction enzymes c) Electroporation
7. Write short notes on
a) Culture media b) Media constituents c) Media selection
d) Media preparation
- 8.. Comment on vaccine development and Hepatitis B vaccine.
9. Explain the production of penicillin from micro organisms.
10. Explain the production of vitamin B₁₂ from micro organisms.
11. Write an essay on Microbial Degradation of xenobiotics
12. Give a detailed account on the applications of reporter genes in recombination technology.
- 13.. Discuss the mechanism of action of Ti plasmid as a suitable vector for gene transfer?
14. What are the different approaches in micropropagation?

- 15.. What are recombinant vaccines? Describe the methodology in their development, taking hepatitis B as an example.
- 16.. What are industrial fermenters? How are microbes applied in large scale fermentation of bioproducts?
17. Give a detailed account of bioremediation and the various organisms involved.