

Bajaj College of Science, Wardha
B.Sc.VI
Subject: Biotechnology
Practice Sheet During Lockdown
(APPLICATIONS OF BIOTECHNOLOGY)
Unit I (Environmental Biotechnology)

A] 7 marks questions:

- Q1 Discuss in detail wastewater treatment process.
- Q2. Discuss in detail drinking water treatment process
- Q3. What is sewage? Discuss in detail composition of Sewage
- Q4. Write detail note on Xenobiotic and recalcitrant compounds.
- Q5. Explain in detail primary, secondary and advanced treatment of sewage.
- Q6. Explain in detail techniques used in assessment of water quality
- Q7. Describe in detail MPN techniques for fecal pollution detection
- Q8. Discuss in detail the Chlorination and Ozonation.
- Q9. Explain in detail process of biomagnifications.
- Q10. Describe in detail Concept of COD.
- Q11. Describe in detail DO and BOD.
- Q12. Explain in detail biodegradation and biodeterioration.
- Q13. Explain in detail biotransformation and Bio accumulation.

B] 2 marks questions:

- Q1. What is pollution and pollutant?
- Q2. What is sewage and solid waste?
- Q3. What is Advance treatment?
- Q4. What is MPN and MFT?
- Q5. What is COD and BOD?

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- Q6. Give the difference between bioaccumulation and biomagnifications.
- Q7. Give the components of sewage.
- Q8. Give two main water pollutant.
- Q9. Give the techniques that test faecal pollution.
- Q10. Define biodegradation.
- Q11. Define bio accumulation.
- Q12. What is biodeterioration?
- Q13. What is biotransformation ?
- Q14. What is Xenobiotic compound?

Unit II (Industrial Biotechnology)

A] 7 marks on questions:

- Q1. Give in detail application Industrial Biotechnology.
- Q2. Describe in detail important commercial products produced by microorganisms
- Q 3. Explain in detail industrial application of GMO.
- Q4. Explain in detail design of typical fermentor.
- Q5. Explain in detail techniques use for screening of commercially important microorganisms
- Q6. Describe in detail primary screening of industrially important microorganisms
- Q7. Describe in detail secondary screening of industrially important microorganisms

B] 2 marks questions:

- Q1. Define industrial Biotechnology.
- Q2. Give any two examples of Industrially important microorganisms .
- Q3. Give any two examples of GMO.
- Q4. Give any two examples of products with help of microorganisms .
- Q5. Give the functions of pH sensor.
- Q6. What is inoculums?
- Q7. What is batch and continuous fermentation process?
- Q8. Define sparger and baffles.
- Q9. What is crowded plate method?
- Q10. What is auxanographic method?

Unit III (Food Biotechnology)

A] 7 marks questions :

- Q1. Explain in detail importance of quality control and quality assurance in food and pharmaceutical industry.
- Q2. Discuss in detail concept of good manufacturing practices in pharmaceutical industry.
- Q3. Describe in detail types of Cheese.
- Q4. Write a detail note on process of cheese production.
- Q5. Explain in detail the concepts of microorganisms as food supplements.
- Q6. Describe in detail assessment of microbiological quality of packaged foods.
- Q7. Explain in detail production of Mushroom and Spirulina.

B] 2 marks questions:

- Q1. What is Quality control?
- Q2. What is the significance of quality assurance?
- Q3. What is CFU?
- Q4. Give the nutritious quality of Mushroom.
- Q5. What is Spirulina?
- Q6. Give any two application of QC and QA.
- Q7. What are measures of microbiological quality?
- Q8. Give the general features of spirulina.
- Q9. Give the different types of cheese.
- Q10. Enlist the steps used in production of cheese.

Unit IV (Plant Tissue Culture)

A] 7 marks questions:

- Q1. Explain in detail Design of typical Plant Tissue Culture Laboratory.
- Q2. Describe in detail Laboratory facilities required for plant tissue culture.
- Q3. Discuss in detail Tissue culture as a novel technique.
- Q4. Describe in detail composition and preparation Tissue culture media.

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Q5. Write a detail note on.

- a) Auxin
- b) Gibberellins
- c) Cytokins,
- d) Ethylene,
- e) Abscisic acid.

Q6. Explain in detail initiation of callus and suspension cultures

Q7. Explain in detail maintenance of callus and suspension cultures.

Q8. Describe in detail protoplast culture and somatic hybridization.

B] 2 marks questions:

Q1. What is totipotency?

Q2. What is micropropagation?

Q3. What is ex-plant?

Q4. Which plant hormone control fruit ripening.

Q5. What is the name of naturally occurring Auxin in plant?

Q6. What is protoplast culture ?

Q7. What is somatic hybridization?

Q8. Define tissue culture.

Unit V (Animal Tissue Culture)

A] 7 marks questions:

Q1. Explain in detail Design of typical animal Tissue Culture Laboratory.

Q2. Explain in detail contact inhibition and anchorage dependence in cell culture

Q3. Describe in detail Maintenance of cell lines in the laboratory.

Q4. Describe in detail various types of animal tissue culture media.

Q5. Explain how primary culture is established

Q6. Write detailed characteristics of cells in culture.

Q7. Write short notes on:

- 1) Cell-cell communication
- 2) Immortal cells

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3) Cell lines.

4) Primary culture

Q8. Write short notes on contribution in development of animal tissue culture

1. Ross Harrison,
2. Alex Carrel,
3. Charles Lindbergh,
4. Lanwilmut

B] 2 marks questions:

Q1. What is cell line?

Q2. Define immortal cells?

Q3. What is primary cell line?

Q4. What is trypsinization?

Q5. What is organ culture?

Q6. What is passaging ?

Q7. What is cell senescence?

Q8. What is animal tissue culture?

Q9. Give the agents used for trypsinization.

Q10. Enlist different types of animal tissue culture media

Unit VI (Biotechnological Products)

A] 7 marks questions:

Q1. Describe in detail production of recombinant DNA insulin.

Q2. Describe in detail production of recombinant DNA somatostatin.

Q3. Describe in detail production of recombinant DNA vaccines

Q4. Describe in detail concept of Gene therapy

Q5. Write a detail notes on transgenic animals.

Q6. Describe in detail In vitro fertilization and embryo transfer.

Q7. Describe in detail production of Bt cotton.

Q8. Describe in detail application of transgenic plants .

B] 2 marks questions:

- Q1. Name any two GMO products .
- Q2. What is Genetic engineering ?
- Q3. Name two rDNA vaccine currently in use.
- Q4. Write two application of transgenic animal.
- Q5. Write two application of transgenic plant.
- Q6. Write two application of transgenic micro-organism
- Q7. What is Ti plasmid ?
- Q8. What is In vitro fertilization and embryo transfer?
- Q9. Give the example of transgenic plant.
- Q10. Give the example of transgenic plant.

For any queries, feel free to contact us on biotech.kunal13@gmail.com