# BIOTECHNOLOGY 6TH SEM IMPORTANT QUESTIONS



### Unit I 10 Hours

- a) Brief introduction to Biotechnology with reference to Pharmaceutical Sciences.
- b) Enzyme Biotechnology- Methods of enzyme immobilization and applications.
- c) Biosensors- Working and applications of biosensors in Pharmaceutical Industries.
- d) Brief introduction to Protein Engineering.
- e) Use of microbes in industry. Production of Enzymes- General consideration Amylase, Catalase, Peroxidase, Lipase, Protease, Penicillinase.
- Basic principles of genetic engineering.

- 1. Explain enzyme immobilization, it's application and method
- 2. Give brief introduction on protein engineering DEPTH OF BIOLOGY

# 05 MARKS QUESTION

- 1. Explain biosensor, give a brief introduction on it's working + application
- 2. Write a short note on genetic engineering [rDNA technology]
- 3. Discuss the production of- amylase, penicillinase DEPTH OF BIOLOGY

- 1. Explain the term biotechnology DEPTH OF BIOLOGY
- 2. What is enzyme immobilization
- 3. Explain biosensor
- 4. Explain the use of microbes in industry
- Explain role of enzymes [ amylase catalase, peroxidase, lipase , protease, penicillinase]

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### DEPTH OF BIOLOGY

### Unit II DEPTH OF BIOLOGY

10 Hours

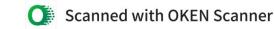
- a) Study of cloning vectors, restriction endonucleases and DNA ligase.
- b) Recombinant DNA technology. Application of genetic engineering in medicine.
- c) Application of r DNA technology and genetic engineering in the production of:
- i) Interferon ii) Vaccines- hepatitis- B iii) Hormones-Insulin.
- d) Brief introduction to PCR

1. Write a detailed note on rDNA technology & also discuss the application of genetic engineering in medicine DEPTH OF BIOLOGY

# 05 MARKS QUESTION

- 1. Write short note on application of genetic engineering in medicine
- 2. Give brief introduction on polymerase chain reaction [PCR]
- 3. Discuss the production of hormone-insulin via genetic engineering process

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- 1. Explain PCR DEPTH OF BIOLOGY
- 2. What is the role of DNA ligase in genetic engineering
- 3. Explain term cloning vector DEPTH OF BIOLOGY
- 4. Explain the role of restriction endonuclease in genetic engineering

Types of immunity- humoral immunity, cellular immunity

- a) Structure of Immunoglobulins DEPTH OF BIOLOGY
- b) Structure and Function of MHC
- c) Hypersensitivity reactions, Immune stimulation and Immune suppressions.
- d) General method of the preparation of bacterial vaccines, toxoids, viral vaccine, antitoxins, serum-immune blood derivatives and other products relative to immunity.
- e) Storage conditions and stability of official vaccines
- f) Hybridoma technology- Production, Purification and Applications
- g) Blood products and Plasma Substituties. DEPTH OF BIOLOGY

# 10 MARKS QUESTION DEPTH OF BIOLOGY

- 1. Explain hybridoma technology, it's production purification and application
- 2. Explain immunity, it's types and also the structure of immunoglobulin

# DEPTH OF BIOLOGY 05 MARKS QUESTION DEPTH OF BIOLOGY

- 1. Discuss about various blood products and plasma substitutes
- 2. Discuss storage condition and stability of any 2 official vaccines
- 3. Give brief introduction of structure and function of MHC
- 4. Explain term immune stimulation and immune suppressions

If you have sufficient time then you can go through general method of preparation of bacterial and viral vaccine

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- 1. Define immunity
- DEPTH OF BIOLOGY
- 2. Function of MHC
- 3. Explain hypersensitivity reaction
- 4. Define vaccine

### DEPTH OF BIOLOGY

### Unit IV DEPTH OF BIOLOGY

08Hours

- a) Immuno blotting techniques- ELISA, Western blotting, Southern blotting.
- b) Genetic organization of Eukaryotes and Prokaryotes
- Microbial genetics including transformation, transduction, conjugation, plasmids and transposons.
- d) Introduction to Microbial biotransformation and applications.
- e) Mutation: Types of mutation/mutants.

# DEPTH OF BIOLOGY 10 MARKS QUESTION

1. Explain microbial biotransformation with suitable examples and it's application

# DEPTH OF BIOLOGY 05 MARKS QUESTION

- 1. Explain immune blotting technique, give a detailed note on ELISA technique
- 2. Discuss genetic organisation of eukaryotes and prokaryotes
- 3. Explain mutation and it's types

- 1. Explain ELISA DEPTH OF BIOLOGY
- 2. Explain terms- transformation, transduction, conjugation, plasmid, transposons
- 3. What is mutation DEPTH OF BIOLOGY

Unit V
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- a) Fermentation methods and general requirements, study of media, equipments, sterilization methods, aeration process, stirring.
- b) Large scale production fermenter design and its various controls.
- c) Study of the production of penicillins, citric acid, Vitamin B12, Glutamic acid, Griseofulvin, DEPTH OF BIOLOGY
- d) Blood Products: Collection, Processing and Storage of whole human blood, dried human plasma, plasma Substituties.

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07 Hours

- Explain fermentation and it`s general requirement. Give a detailed note on large scale fermenter DEPTH OF BIOLOGY
- 2. Give a brief note on blood products [collection, processing, storage]

# 05 MARKS QUESTION

- 1. Discuss the production of penicillin and griseofulvin
- 2. Discuss the general requirements of fermenter DEPTH OF BIOLOGY
- 3. Discuss the various control parameters for large scale fermenter design

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- 1. Explain role of spragger in fermenter
- 2. Write down the use of citric acid, vitamin B12 and glutamic acid
- 3. What is aeration process DEPTH OF BIOLOGY