(BP .605 T)

IV/IV B.PHARMACY- VI SEMESTER REGULAR DEGREE EXAMINATION -------

PHARMACEUTICAL BIOTECHNOLOGY

Time: Three hours | maximum: 75 marks

SECTION-A

Answer Any FIVE Questions 5X10=50M

1. What is Biosensor? Elaborate the working principle of biosensor and explain it's Applications in pharmaceutical industries.

2. a) Significance of monoclonal antibodies in pharmaceutical industries

   b) Advantages of immobilized enzymes over isolated enzymes.

3. Discuss various PCR techniques and add a note on it's applications in the feild of biotechnology.

4. Explain indetails ~~cla~~ about classification of immunity and give a detailed note on principles of immune responses. In human body.

5. Define and classify vaccine. Describe the preparation and standardisation of any one bacterial vaccine.

6. Give an exhaustive notes on genetic organisation of Eukaryotes and prokaryotes.

7. a) Optimization of fermenter

   b) Effluent treatment methods.

SECTION-B

Answer Any FIVE Questions 5X5=25M

8. Write a note on protein engineering.

9. Explain the basic principles of genetic engineering.

10. Explain the cells and organs involved in immune response.

11. Discuss the structure and functions of MHC.

12. Explain the differences in blood products and plasma substituents.

13. Explain microbial biotransformation and applications in pharmaceutical Biotechnology.

14. Write the components included in fermentation. Add a note on procedure of ~~production~~ Citric acid production by fermentation technology.

15. Explain about various types of vectors used in r-DNA technology.

16. How specific immunity does differ from non-specific ~~immunity~~ resistance? Discuss various types of immunoglobulins.

17. Write short notes ~~for~~ the following:
a) factors affecting mutation
b) Hypersensitivity reactions.

18. Explain the techniques of enzyme immobilisation.

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Total No. of Questions : 14] [Total No.of Pages : 01

III/IV B. PHARMACY (SUPPLY) DEGREE EXAMINATIONS, FEBRUARY- 2022

Sixth Semester

(New Regulations w.e.f. 2017-18)

PHARMACEUTICAL BIOTECHNOLOGY - THEORY

Time : **Three Hours** Maximum : 75 Marks

SECTION - A

Answer any FIVE Questions. **5x10 = 50 M**

1. Write in detail about principle, working and applications of biosensors.
2. Write in detail about the production of human insulin by rDNA technology.
3. Write in detail about production of monoclonal antibodies by hybridoma technology.
4. Describe in detail about the processes - transformation & conjugation in bacteria.
5. Explain the design and working of stirred tanked fermenter.
6. Write the collection, processing and storage of dried human plasma.
7. Discuss in detail about cell mediated and humoral immunity.

SECTION - B

Answer any FIVE Questions. **5x5 = 25 M**

8. Write in brief about the enzyme immobilization methods.
9. Write notes on protein engineering and its applications.
10. Write notes on restriction enzymes.
11. Write in brief about the preparation, uses of toxoids and give examples.
12. Write the structure and functions of major histocompatibility complex.
13. Write notes on microbial production of glutamic acid.
14. Mention various types of mutagenic agents and explain any two agents' mechanism of action.

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Total No. of Questions :18] [Total No. of Pages : 02

III/IV B.PHARMACY (Supply) DEGREE EXAMINATIONS, OCTOBER-2020

Sixth Semester

B.PHARMACY

PHARMACEUTICAL BIOTECHNOLOGY-I

Time: Three Hours **Maximum marks:70**

SECTION-A

Answer any FOUR Questions **4X10=40M**

1. Describe the construction, principle and working of Fermenter with a diagram.
2. Write the extraction and purification methods for:
   a) Vitamin B_{12}
   b) Alcohol
3. Discuss the standards, sterilization and sterility test for surgical dressings.
4. Describe the extraction and purification methods for Heparin.
5. Write in brief about manufacture of following immunological products:
   a) Polio vaccine b) Tetanus Antitoxin
6. Discuss briefly about the principle and estimation of Insulin in blood serum.

SECTION-B

Answer any TEN Questions **10X3=30M**

7. Write about methods of enzyme Immobilization.
8. Describe the production of streptokinase by recombinant DNA Technology.
9. Write a short notes on screening methods for secondary Metabolites.
10. Write the Media, conditions and extraction for manufacture of Citric acid.
11. Dextran
12. Penicillin
13. Fungal diastase.

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14. Discuss the controls for sterility testing.
15. Write the Microbiological assay of Vitamin B_{12}
16. Tetracyclins.
17. Discuss the factors affecting enzyme kinetics.
18. Write short notes on microbial conversion of steroids and add a note on enzyme penicillinase.

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Total No. of Questions :18] [Total No. of Pages : 02

III/IV B.PHARMACY (Regular) DEGREE EXAMINATIONS, APRIL-2019

6th Semester

B.PHARMACY

PHARMACEUTICAL BIOTECHNOLOGY

Time: Three Hours **Maximum marks:70**

SECTION-A

Answer any FOUR Questions **4X10=40M**

1. Explain in detail the different parts of a bioreactor with help of neat diagram and write notes on its accessories.
2. Explain the various steps involved in rDNA technology with an example and add notes on plasmids.
3. Write in detail about the microbial production of lactic acid.
4. Write the medium composition, conditions employed, microbial production and purification process of penicillin.
5. Write the various factors affecting enzyme kinetics. Mention the various methods used for immobilization of enzymes and describe any one method in detail.
6. Write the preparation, storage conditions and uses of the following products.
   a) Fresh frozen plasma b) Clinical dextran

SECTION-B

Answer any TEN Questions **10X3=30M**

7. Give a brief account on tetanus toxoid.
8. Write notes on secondary metabolites.
9. Mention any four techniques for the neutralization of antimicrobial activity in test for sterility.
10. Write the merits and demerits of crude medium.
11. Write in brief about the preparation and uses of heparin.

12. Write microorganism used, conditions applied in the microbial production of alcohol.
13. Write notes on interferons.
14. Write the principle involved in the microbiological assay of vitamin B_{12}.
15. Write the principle of Schick test.
16. Write the various applications of monoclonal antibodies with examples.
17. Give a brief note on lactobacillus spores.
18. Write notes on catgut.

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Total No. of Questions :18] [Total No. of Pages : 02

III/IV B.PHARMACY (Supply) DEGREE EXAMINATIONS, OCT-2018

6th Semester

B.PHARMACY

PHARMACEUTICAL-I BIOTECHNOLOGY

Time: Three Hours **Maximum marks:70**

SECTION-A

Answer any FOUR Questions **4X10=40M**

1. Describe in detail the design and working of a laboratory bioreactor with a neat diagram. Write notes on secondary metabolites.
2. Write the microorganism used, medium composition and bioprocess parameters in the large scale fermentation process for the following products:
   a) Dextran b) Vitamin B_{12}.
3. How do you perform the test for sterility for samples possessing inherent or added antimicrobial activity-explain with examples. Add note on controls used in test for sterility.
4. Write the principle involved in radioimmunoassay and how do you estimate the insulin in blood serum by this method. Add note on surgical dressings.
5. Write in brief about the manufacture of the following immunological products.
   a) Rabies vaccine b) Diphtheria antitoxin.
6. Write in detail about the production of humulin by recombinant DNA technology. Add note on streptokinase.

SECTION-B

Answer any TEN Questions **10X3=30M**

7. Give a brief account on *lactobacillus* spores.
8. Explain the term 'precursor' with example.
9. Write notes on biological activity guided screening of antibiotics.
10. Mention the various steps involved in microbiological assay of antibiotic by agar diffusion method as per IP (one level assay).
11. Write in brief about preparation and uses of heparin.
12. Mention the various methods used for the sterilization of catgut.
13. Write notes on tuberculin purified protein derivative.

14. Write notes on whole cell immobilization and its applications.

15. Write in brief about the preparation of gamma globulins.

16. Write the various applications of monoclonal antibodies with examples.

17. Give a brief note on interferons.

18. Write notes on subunit vaccines.

Time: Three Hours **Maximum marks:70**

SECTION-A

Answer any FOUR Questions 4X10=40M

1. Describe the parts of a fermenter and their function with help of a neat diagram.
2. How do you perform the test for sterility for samples possessing inherent or added antimicrobial activity-explain with examples. Add note on controls used in test for sterility.
3. Write the manufacture of the following immunological products:
   a) Oral poliomyelitis b) tetanus toxoid
4. Write the principle and procedure for estimation of insulin in blood serum by employing radioimmunoassay.
5. Explain various factors affecting enzyme kinetics. Add note on whole cell immobilization
6. Describe the production of human insulin by rDNA technology

SECTION-B

Answer any TEN Questions 10X3=30M

7. Give a brief account on microbial production of citric acid.
8. Write the microbial source, medium composition for the production of pencillin.
9. Write notes on microbial production of dextran.
10. Write notes on surgical catgut.
11. Write about Shick test.
12. Write the principle involved in assay of vitamin B_{12}.
13. Mention various methods used for enzyme immobilization.
14. Write in brief about hybridoma technology.
15. Write the importance of microbial transformations/conversions.
16. Write the storage and applications of fresh frozen plasma.
17. Write in brief about the preparation of pepsin.
18. Write notes on diphtheria antitoxin.

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III/IV B.PHARMACY DEGREE EXAMINATIONS, APRIL-2017

6th Semester

B.PHARMACY

PHARMACEUTICAL-I BIOTECHNOLOGY

Time: Three Hours **Maximum marks:70**

SECTION-A

Answer any FOUR questions. (4 x 10=40 M)

1. Describe in detail about various screening methods for bioactive metabolites. Add note on high throughput screening.
2. Write about the following with respect to test for sterility as per IP
   a) media used b) methods empolyed
   c) methods used for products containing antimicrobial substances
3. Write in detail about preparation of the following:
   a) gamma globulins b) Gas gangrene anti toxin
4. How do you estimate insulin in blood serum by radioimmunoassay method.
5. Write about the factors affecting enzyme kinetics. Add note on whole cell immobilization
6. Write in detail about the production of monoclonal antibodies and their applications.

SECTION-B

Answer any TEN questions. (10 x 3=30 M)

7. Explain the function of sparger and baffle.
8. Write in brief about the microbial production of lactic acid.
9. Write note on fungal diastase
10. Write the names of the industrial microorganisms used in the production of streptomycin, ethyl alcohol and vitamin B_{12}.
11. Write the sterilization of catgut.
12. Write note on pancreatin.
13. Write any three major differences between vitamin and amino acid assays.
14. Write notes on streptokinase.
15. Write notes on clinical dextran.
16. Write notes on vectors.
17. Write about interferon
18. Write in brief about freeze dried plasma.

Total No. of Questions :18]

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III/IV B.PHARMACY (Regular) DEGREE EXAMINATIONS, MAY-2016

Sixth Semester

PHARMACEUTICAL BIOTECHNOLOGY

Time: Three Hours **Maximum marks:70**

SECTION-A

Answer any FOUR questions. (4 x 10=40 M)

1. Describe in detail the design and working of a laboratory bioreactor with a neat diagram. Write notes on sparger.
2. Write the microorganism used, medium composition, bioprocess parameters and recovery of the following products:
   a. Citric acid b. Fungal diastase
3. Explain about the controls used in test for sterility. How do you perform test for sterility for sutures and ligatures.
4. Write the extraction, purification and storage of the following products;
   a. Pancreatin b. Heparin
5. Write in detial about microbiological assay of Vitamin B_{12}.
6. Write in detail about factors affecting enzyme kinetics. Mention various methods used for enzyme immobilization.

SECTION-B

Answer any TEN questions. (10 x 3=30 M)

7. Give a brief account on lactic acid production.
8. Differentiate between crude medium and synthetic medium.
9. Write notes on screening methods for bioactive metabolites.
10. Write notes on fresh frozen plasma.
11. Write notes on solid state fermentation.
12. Write in brief about pepsin.
13. Write notes on streptokinase.
14. Give brief account on interferon.
15. Write in brief about the clinical dextran.
16. Write the various applications of monoclonal antibodies with examples.
17. Give a brief note on antitoxins
18. Write notes on synthetic vaccines.