Code: 15R00504

R15

B.Pharm III Year I Semester (R15) Supplementary Examinations July/August 2022

PHARMACEUTICAL BIOTECHNOLOGY

Time: 3 hours

Max. Marks: 70

PART – A

(Compulsory Question)

*****

1 Answer the following: (10 X 02 = 20 Marks)

(a) What is secondary screening of microorganism?
(b) It is a routine practice to undertake strain improvement of industrial microbial culture. Give reasons.
(c) In rDNA technology, what is insertional inactivation?
(d) Insulin gene is isolated via total mRNA isolation, followed by conversion to cDNA. Give reasons.
(e) Give examples for immune-sera preparations.
(f) What is the principle involved in 'Direct ELISA'?
(g) What are the applications of amylase and proteases?
(h) Enlist two advantages of immobilizing microbial enzymes.
(i) What is gene annotation?
(j) Write any two applications of docking studies.

PART – B

(Answer all the questions: 05 X 10 = 50 Marks)

2 Discuss the fermentative production and recovery of streptomycin.

OR

3 (a) Explain the objectives of downstream process of microbial metabolites.
(b) Describe the production of lactic acid by fermentation.

4 Discuss the production of recombinant Hepatitis B vaccine.

OR

5 (a) Explain adult stem cells. How do they differ from embryonic stem cells?
(b) Enlist the applications of monoclonal antibodies.

6 (a) Differentiate active and passive immunization.
(b) Explain the structure of an immunoglobulin.

OR

7 Discuss the production and standardization of 'Cholera vaccine'.

8 (a) Explain the factors affecting the activity of enzymes.
(b) Compare the immobilization methods used for enzyme and live bacterial cells immobilization.

OR

9 Define immobilization. Classify and explain immobilization techniques.

10 (a) Explain protein and nucleic acid databases.
(b) Explain the advantages of using microorganisms for the production of nanoparticles.

OR

11 Write an essay on the advantages, challenges and methods used in gene therapy.

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Code: 15R00504

R15

B.Pharm III Year I Semester (R15) Supplementary Examinations February 2022

PHARMACEUTICAL BIOTECHNOLOGY

Time: 3 hours Max. Marks: 70

PART – A

(Compulsory Question)

*****

1 Answer the following: (10 X 02 = 20 Marks)

(a) Define screening of industrial microorganisms. Classify them.
(b) What is downstream processing of microbial products?
(c) What are embryonic stem cells?
(d) DNA ligases are one of the important enzymes used in rDNA technology. Give reasons.
(e) Give two examples for vaccines containing toxoids.
(f) What are vaccines?
(g) Write the applications of streptokinase and hyaluronidase.
(h) Enlist the methods used in immobilization of plant cells.
(i) What are the applications of nanobiotechnology?
(j) What are biological data bases?

PART – B

(Answer all the questions: 05 X 10 = 50 Marks)

2 Explain the construction and working of an industrial aerobic fermenter.

OR

3 Discuss the fermentative production and recovery of penicillin.

4 Discuss the principle involved in production of monoclonal antibodies by hybridoma technology.

OR

5 Explain the steps involved in production and purification of humulin.

6 (a) Describe the structure of an antibody with a neat labelled diagram.
(b) Differentiate humoral and cell mediated immunity.

OR

7 Discuss the production and standardization of Oral Polio vaccine.

8 Classify different methods of immobilization. Citing suitable examples, explain the principle involved in these methods.

OR

9 (a) What are the advantages of microbial enzymes over other sources of enzymes?
(b) Describe the applications of penicillinase and streptokinase.

10 What is gene therapy? Classify and explain different techniques used in gene therapy.

OR

11 (a) Write short notes on applications of docking studies in drug discovery.
(b) Describe the secondary structure of proteins.

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Code: 15R00504

R15

B.Pharm III Year I Semester (R15) Supplementary Examinations August 2021

PHARMACEUTICAL BIOTECHNOLOGY

Time: 3 hours | Max. Marks: 70

PART – A

(Compulsory Question)

*****

1 Answer the following: (10 X 02 = 20 Marks)

(a) What is primary screening? Give an example.
(b) Give any two reasons for performing strain improvement of industrial microbial culture.
(c) In rDNA technology, the vectors and the gene of interest are restricted using same restriction enzyme. Give reasons.
(d) What is the strategy used for isolation of insulin gene in rDNA production of humulin?
(e) What are immune-sera preparations?
(f) ELISA technique is frequently used for diagnostic test. Briefly explain the principle involved in 'Sandwich ELISA'.
(g) What are the applications of penicillinase and streptodomase?
(h) Enlist two advantages of immobilizing plant cells.
(i) What is biological sequence analysis?
(j) What are the applications of docking studies?

PART – B

(Answer all five units, 5 X 10 = 50 Marks)

UNIT – I

2 Discuss the fermentative production and recovery of penicillin.

OR

3 (a) What are the objectives and methods used in downstream process of microbial metabolites?
(b) Alcohol fermentation is a classic example for aerobic and anaerobic fermentation. Explain.

UNIT – II

4 Discuss the production of recombinant Hepatitis B vaccine by recombinant DNA technology.

OR

5 (a) Explain the applications of stem cells.
(b) Briefly explain the principle involved in production of monoclonal antibodies by hybridoma technology.

UNIT – III

6 (a) Differentiate active and passive immunization.
(b) Explain the types of antigen-antibody reactions.

OR

7 Discuss the production and standardization of 'Oral Polio Vaccine'.

UNIT – IV

8 (a) Explain the factors affecting the stability of enzymes.
(b) Differentiate the methods involved in immobilization of enzyme and live bacterial cells.

OR

9 Citing suitable examples, explain different methods used in immobilization of enzymes.

UNIT – V

10 (a) Write short notes on protein and nucleic acid databases.
(b) Explain the applications of microorganisms in production of nanoparticles.

OR

11 What is gene therapy? Explain the advantages, challenges and methods used in gene therapy.

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Code: 15R00504

R15

B.Pharm III Year I Semester (R15) Regular & Supplementary Examinations November/December 2019

PHARMACEUTICAL BIOTECHNOLOGY

Time: 3 hours

Max. Marks: 70

PART – A

(Compulsory Question)

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1 Answer the following: (10 X 02 = 20 Marks)

(a) What are the differences between co-culture and mixed culture in fermentation technology?
(b) Which types of sensors are there for using in fermenter process?
(c) What is biolistics or gene gun?
(d) What is a palindrome sequence of DNA? Illustrate with a suitable example.
(e) Name some cytokines which released in response to virus infection and why?
(f) What is innate immunity and give some examples?
(g) What is the best way to neutralize collagenase using autologous plasma/serum?
(h) How to determine snailase activity? What is substrate and conditions?
(i) Describe the importance of medical genetics.
(j) Define proteomics and genomics with two examples in each.

PART – B

(Answer all five units, 5 X 10 = 50 Marks)

UNIT – I

2 (a) What are the types of fermentation and how to optimize the fermentation process?
(b) Write in details of isolation and selection procedure in screening of microorganisms.

OR

3 (a) What are the types, design and operation of Bioreactors?
(b) What is the selection procedure for organisms and fermentation and purification of vitamins?

UNIT – II

4 (a) What are the steps involved in isolation of enzymes & vectors?
(b) What are stem cells? How is it used and targeted by various medical technology?

OR

5 (a) Write short notes on Gene cloning.
(b) Write various uses of humatrope & activase.

UNIT – III

6 (a) Enumerate the difference between active & passive immunization of vaccine preparation.
(b) Write the principle of humoral immunity.

OR

7 (a) Write the principles of immunity and use in the medical purpose.
(b) Write the standardization of storage of BCG.

UNIT – IV

8 (a) Write the various factors affecting enzyme kinetics.
(b) Write short notes on advantages and disadvantages over immobility of isolated enzymes.

OR

9 (a) Write short notes on Hyaluronidase.
(b) Write short notes on Streptokinase.

UNIT – V

10 (a) Write a brief notes on application of bioinformatics.
(b) What is nanobiotechnology and its big application in recent days?

OR

11 (a) How do you correlate Proteomics and genomics?
(b) Write the principle and application of gene therapy.

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Code: 15R00504

R15

B.Pharm III Year I Semester (R15) Supplementary Examinations June/July 2019

PHARMACEUTICAL BIOTECHNOLOGY

Time: 3 hours Max. Marks: 70

PART – A

(Compulsory Question)

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1 Answer the following: (10 X 02 = 20 Marks)

(a) What are baffles?
(b) Write auxography method.
(c) List application on stem cells.
(d) What is Hybridoma technology?
(e) Mention any two difference between humoral and cell mediated immunity.
(f) Define polyvalent vaccines.
(g) Define immobilization.
(h) List out the factors affecting the action of enzyme.
(i) What is gene library?
(j) Write database about the design and operation of industrial fermenter.

PART – B

(Answer all five units, 5 X 10 = 50 Marks)

UNIT – I

2 Discuss about the design and operation of industrial fermenter.

OR

3 Describe the production of Penicillin and lactic acid.

UNIT – II

4 Describe in detail about the production, purification and applications of monoclonal antibodies.

OR

5 Write a detailed note on the production of humulin and introns.

UNIT – III

6 Explain in brief about the preparation and storage of tetanus toxoid.

OR

7 Describe the official preparation used for inducing passive immunity.

UNIT – IV

8 Describe immobilization. Write note on the different methods of immobilization techniques.

OR

9 Explain the method of production and purification of penicillinase enzyme.

UNIT – V

10 What is gene therapy? Discuss the detail note on the gene therapy.

OR

11 Describe the application of bioinformatics in pharmaceutical industries.

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Code: 15R00504

R15

B.Pharm III Year I Semester (R15) Supplementary Examinations February 2022

PHARMACEUTICAL BIOTECHNOLOGY

Time: 3 hours

Max. Marks: 70

PART – A

(Compulsory Question)

*****

1 Answer the following: (10 X 02 = 20 Marks)

(a) Define screening of industrial microorganisms. Classify them.
(b) What is downstream processing of microbial products?
(c) What are embryonic stem cells?
(d) DNA ligases are one of the important enzymes used in rDNA technology. Give reasons.
(e) Give two examples for vaccines containing toxoids.
(f) What are vaccines?
(g) Write the applications of streptokinase and hyaluronidase.
(h) Enlist the methods used in immobilization of plant cells.
(i) What are the applications of nanobiotechnology?
(j) What are biological data bases?

PART – B

(Answer all the questions: 05 X 10 = 50 Marks)

2 Explain the construction and working of an industrial aerobic fermenter.

OR

3 Discuss the fermentative production and recovery of penicillin.

4 Discuss the principle involved in production of monoclonal antibodies by hybridoma technology.

OR

5 Explain the steps involved in production and purification of humulin.

6 (a) Describe the structure of an antibody with a neat labelled diagram.
(b) Differentiate humoral and cell mediated immunity.

OR

7 Discuss the production and standardization of Oral Polio vaccine.

8 Classify different methods of immobilization. Citing suitable examples, explain the principle involved in these methods.

OR

9 (a) What are the advantages of microbial enzymes over other sources of enzymes?
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11 (a) Write short notes on applications of docking studies in drug discovery.
(b) Describe the secondary structure of proteins.

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