

MAY 2011

[KY 358]

Sub. Code: 2919

M.PHARM. DEGREE EXAMINATION

(Regulations 2010)

(Candidates admitted from 2010-2011 onwards)

FIRST YEAR

Branch VI – PHARMACEUTICAL BIOTECHNOLOGY

Paper IV – ADVANCES IN PHARMACEUTICAL BIOTECHNOLOGY

Q.P. Code : 262919

Time : Three hours

Maximum : 100 marks

Answer All questions

I. Essay Questions :

(6 x 10 = 60)

1. Describe the general properties, extraction and purification of enzymes.
2. Explain the techniques of immobilization of enzymes.
3. PCR and its Applications.
4. Production and applications of Monoclonal antibodies.
5. Biotransformation for synthesis of chiral drugs and sterols.
6. Production of useful proteins in transgenic animals and gene therapy.

II. Write Short Notes :

(8 x 5 = 40)

1. Production of amyloglucosidase.
2. Reactors for immobilized systems.
3. Cloning vectors.
4. Gene library.
5. Production of Hepatitis-B vaccine.
6. Signal transduction.
7. HIV vaccines.
8. Biology sequence databases and Hypothesis test.

October 2011

[KZ 358]

Sub. Code: 2919

M.PHARM. DEGREE EXAMINATION

FIRST YEAR

BRANCH VI – PHARMACEUTICAL BIOTECHNOLOGY

PAPER IV – ADVANCES IN PHARMACEUTICAL BIOTECHNOLOGY

Q.P. Code : 262919

**Time : 3 hours
(180 Min)**

Maximum : 100 marks

Answer ALL questions in the same order.

I. Elaborate on :

Pages (Max.)	Time (Max.)	Marks (Max.)
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- | | | | |
|--|----|----|----|
| 1. Discuss the concepts involved in new generation vaccines. | 17 | 40 | 20 |
| 2. Discuss the various molecular tools for gene manipulation.
Explain the production of erythropoietin. | 17 | 40 | 20 |

II. Write notes on :

- | | | | |
|---|---|----|---|
| 1. Cloning strategies. | 4 | 10 | 6 |
| 2. Production of erythropoietin by r-DNA. | 4 | 10 | 6 |
| 3. Oncogene and its applications. | 4 | 10 | 6 |
| 4. Immuno - diagnosis of infectious diseases. | 4 | 10 | 6 |
| 5. Reactors for immobilized enzyme systems. | 4 | 10 | 6 |
| 6. Vaccine adjuvants. | 4 | 10 | 6 |
| 7. Cloning procedures. | 4 | 10 | 6 |
| 8. Fermentation of industrial wastes and their treatment. | 4 | 10 | 6 |
| 9. Bioinformatics and Drug design. | 4 | 10 | 6 |
| 10. 'Chi' square test and student 't'test. | 4 | 10 | 6 |

[LA 358]

MAY 2012

Sub. Code: 2919

M.PHARM. DEGREE EXAMINATION

FIRST YEAR

BRANCH VI – PHARMACEUTICAL BIOTECHNOLOGY

PAPER IV – ADVANCES IN PHARMACEUTICAL BIOTECHNOLOGY

Q.P. Code: 262919

Time: 3 hours
(180 Min)

Maximum: 100 marks

Answer ALL questions in the same order.

I. Elaborate on:

Pages (Max.)	Time (Max.)	Marks (Max.)
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- | | | | |
|---|----|----|----|
| 1. Discuss the various methods for immobilization of whole cells with suitable examples and mention their applications. Add a note on the bioreactors for the operation of immobilized cells. | 17 | 40 | 20 |
| 2. Explain the role of plasmids in genetic engineering. Describe the production of interferon and insulin. | 17 | 40 | 20 |

II. Write notes on:

- | | | | |
|---|---|----|---|
| 1. Production of glucose isomerase. | 4 | 10 | 6 |
| 2. Single cell protein. | 4 | 10 | 6 |
| 3. Site directed mutagenesis. | 4 | 10 | 6 |
| 4. Testing of hypothesis. | 4 | 10 | 6 |
| 5. Biodegradation of xenobiotics. | 4 | 10 | 6 |
| 6. Use of databases in biology. | 4 | 10 | 6 |
| 7. Applications of monoclonal antibodies. | 4 | 10 | 6 |
| 8. DNA vaccines. | 4 | 10 | 6 |
| 9. Human genome project. | 4 | 10 | 6 |
| 10. Microbial transformation of steroids. | 4 | 10 | 6 |

[LB 358]

NOVEMBER 2012
M.PHARM. DEGREE EXAMS
FIRST YEAR

Sub. Code: 2919

BRANCH VI – PHARMACEUTICAL BIOTECHNOLOGY
PAPER IV – ADVANCES IN PHARMACEUTICAL BIOTECHNOLOGY
Q.P. Code : 262919

Time : 3 hours
(180 Min)

Maximum : 100 marks

Answer ALL questions in the same order.

I. Elaborate on :

Pages Time Marks
(Max.)(Max.)(Max.)

- | | | | |
|--|----|----|----|
| 1. Genetic engineering and its application in production of regulatory proteins. | 17 | 40 | 20 |
| 2. a) Hybridoma technology in production of monoclonal antibodies. | 17 | 40 | 20 |
| b) Immuno-diagnosis of infectious diseases | | | |

II. Write Notes on :

- | | | | |
|--|----|----|----|
| 1. What are the sources of enzymes and describe the production of glucose isomerase. | 17 | 40 | 20 |
| 2. Various methods for immobilization of enzymes. | 17 | 40 | 20 |
| 3. DNA Vaccines. | 17 | 40 | 20 |
| 4. PCR and cDNA. | 17 | 40 | 20 |
| 5. Gene library. | 17 | 40 | 20 |
| 6. MAP kinase pathway. | 17 | 40 | 20 |
| 7. Gene therapy. | 17 | 40 | 20 |
| 8. Human genome project. | 17 | 40 | 20 |
| 9. Biotransformation for the synthesis of chiral drugs and steroids. | 17 | 40 | 20 |
| 10. Student 't' test. | 17 | 40 | 20 |

[LC 358]

APRIL 2013

Sub. Code: 2919

M.PHARM. DEGREE EXAMS

FIRST YEAR

BRANCH VI – PHARMACEUTICAL BIOTECHNOLOGY

PAPER IV – ADVANCES IN PHARMACEUTICAL BIOTECHNOLOGY

Q.P. Code : 262919

Time : 3 hours

Maximum : 100 marks

I. Elaborate on :

(2x20=40)

1. Recombinant DNA technology and its application in production of vaccines and blood products.
2. Hybridoma technology in production of monoclonal antibodies and their application in clinical diagnosis, immunotherapy and pharmaceutical research.

II. Write notes on :

(10x6=60)

1. What are the sources of enzymes and describe the production of trypsin.
2. Elisa and its application in clinical diagnosis.
3. Reactors for immobilization of enzymes.
4. PCR and its application.
5. Production of amyloglucosidase.
6. Oncogenes.
7. Transgenic animals and its application in production of proteins.
8. Human genome project.
9. Production of single cell proteins.
10. Student 't' test.

[LD 358]

OCTOBER 2013

Sub. Code: 2919

M.PHARM. DEGREE EXAMINATIONS

FIRST YEAR

BRANCH VI – PHARMACEUTICAL BIOTECHNOLOGY

PAPER IV – ADVANCES IN PHARMACEUTICAL BIOTECHNOLOGY

Q.P. Code : 262919

Time: Three Hours

Maximum: 100 marks

Answer ALL questions in the same order.

I. Elaborate on :

(2 x 20 = 40)

1. Explain the various techniques for the manipulation of gene expression and write briefly on the production of Hepatitis-B vaccine by r-DNA technology.
2. Give an account on the different microbial transformations of chiral drugs and steroids.

II. Write notes on :

(10 x 6 = 60)

1. Classification of enzymes and the applications of commercial enzymes
2. Gene library
3. Significance of oncogenes
4. Monoclonal antibodies and its applications
5. Immuno-diagnosis of infectious diseases
6. Techniques of DNA sequencing
7. Recombinant vaccines
8. Bioinformatics and drug discovery
9. Chi-square test and Student 't' test
10. Xenobiotics and its biodegradation

[LE 358]

APRIL 2014

Sub. Code: 2919

**M.PHARM. DEGREE EXAMS
FIRST YEAR
BRANCH VI – PHARMACEUTICAL BIOTECHNOLOGY
PAPER IV – ADVANCES IN PHARMACEUTICAL BIOTECHNOLOGY**

Q.P. Code : 262919

Time : 3 hours

Maximum : 100 marks

I. Elaborate on :

(2x20=40)

1. Elaborate the steps involved in the preparation of recombinant DNA products such as interferon and insulin.
2. How the enzymes are commercially produced? What are the advantages of microbial enzymes over other enzymes. Mention the applications of enzymes and write on the production of glucose isomerase.

II. Write notes on :

(10x6=60)

1. Gene cloning strategies
2. Gene therapy
3. Hepatitis- B vaccine
4. Chromosomal abnormalities and their syndromes
5. Techniques of immobilisation of enzymes
6. Biodegradation of chemical and industrial wastes
7. Hybridoma technology
8. Network access
9. Chi-square test and Null hypothesis
10. Biotransformation of synthesis of chiral drugs

[LF 358]

OCTOBER 2014

Sub. Code: 2919

**M.PHARM. DEGREE EXAMINATION
FIRST YEAR
BRANCH VI – PHARMACEUTICAL BIOTECHNOLOGY
PAPER IV – ADVANCES IN PHARMACEUTICAL BIOTECHNOLOGY**

Q.P. Code : 262919

Time : Three hours

Maximum : 100 marks

I. Elaborate on:

(2 x 20 = 40)

1. Various methods of extraction, purification of enzymes and its pharmaceutical applications.
2. Various techniques involved in gene manipulation and production of insulin by rDNA technology.

II. Write notes on:

(10x6=60)

1. Oncogenes
2. HIV vaccines
3. Monoclonal antibody
4. Bioreactors for immobilized cells
5. cDNA
6. Electrophoresis
7. Immuno diagnosis of infectious diseases
8. Production of single cell protein
9. Western blotting
10. Use of databases in biology
