SEPTEMBER 2007

[KR 327] **Sub. Code : 2863**

M.Pharm. DEGREE EXAMINATION.

DRUG DESIGN AND MOLECULAR PHARMACOLOGY

Time : Three hours Maximum : 100 marks

Theory : Two hours and forty minutes Theory : 80 marks

M.C.Q. : Twenty minutes M.C.Q. : 20 marks

Answer ALL questions

I. Long Essay :

1. (a) What is a receptor? Explain different drug receptor theories. (10)

(b) Describe the methods of lead optimisation.(10)

2. How computer aided drug design is useful in new drug discovery and development? (15)

3. Write a note on :

(a) Gene expression, regulation and gene mapping.

(b) Clinical applications of gene therapy. (15)

II. Short notes : (6 × 5 = 30)

1. Write a note on QSAR?

2. What is the importance of receptor polymorphism and dimerisation in drug design?

3. Write a note on :

(a) Prodrugs

(b) Lead.

4. Write a short note on :

(a) Cell signalling

(b) Biosensors.

5. What are the disease targets for gene therapy?

6. How will you prepare and maintain cell-cultures?

September 2008

[KT 327] **Sub. Code : 2863**

M.Pharm. DEGREE EXAMINATION.

First Year

(Regulation 2006)

Branch IV — Pharmacology

Paper IV — DRUG DESIGN AND MOLECULAR PHARMACOLOGY

Q.P. Code : 262863

Time : Three hours Maximum : 100 marks

Answer ALL questions.

I. Long Essay : (3 × 20 = 60)

1. Discuss the forces involved in drug-receptor interaction. Add a note on receptor polymorphism and dimerisation.

2. Explain the role of physicochemical properties in relation to biological activity and drug design.

3. Briefly discuss about fundamentals of QSAR. Add a note on QSAR parameters related to chemical structure and biological activity.

II. Write short notes on : (8 × 5 = 40)

1. Prodrug concept.

2. Signal transduction pathway.

3. Gene mapping.

4. Clinical applications of gene therapy.

5. Principles of DNA Recombinant technology.

6. Prediction of protein structure.

7. Lead seeking methods.

8. Introduction to cell structure and functions.

March 2009

[KU 327] **Sub. Code: 2863**

M.PHARM. DEGREE EXAMINATION

(Regulations 2006)

Candidates admitted from 2006-2007 onwards

FIRST YEAR

Branch IV – PHARMACOLOGY

Paper IV – DRUG DESIGN AND MOLECULAR PHARMACOLOGY

Q.P. Code : 262863

Time : Three hours **Maximum : 100 marks**

Answer All questions

I. Essay Questions : **(3 x 20 = 60)**

1. a) Describe various lead seeking methods in drug design.
   b) Write a note on isosterism in relation to biological action and drug design.

2. Discuss different approaches to the rational design of enzyme inhibitors.

3. a) Explain signal transduction pathways for G-protein coupled receptors.
   b) What are ion channels? Explain how ion channels act as drug targets.

II. Write Short Notes : **(8 x 5 = 40)**

1. Write short notes on receptor polymorphism.
2. Describe the clinical application of gene therapy.
3. Write about biosensors.
4. Explain about receptor dimerisation.
5 What are the advantages and disadvantages of natural products and lead compounds?
6. Explain about the identification of a pharmacophore in computer aided drug design.
7. How are clinical trials performed for the discovery of new drugs?
8. Describe the structure of G-protein coupled receptors.

*****

September 2009

[KV 327] **Sub. Code: 2863**

M.PHARM. DEGREE EXAMINATION

(Regulations 2006)

Candidates admitted from 2006-2007 onwards

FIRST YEAR

Branch IV – PHARMACOLOGY

Paper IV – DRUG DESIGN AND MOLECULAR PHARMACOLOGY

Q.P. Code : 262863

Time : Three hours **Maximum : 100 marks**

Answer All questions

I. Essay Questions : **(3 x 20 = 60)**

1. Classify receptors. Explain the various theories and forces involved in drug receptor interaction.

2. Briefly enumerate the principles, process and applications of recombinant DNA technology.

3. Brief out the clinical applications of gene therapy and disease targets for gene therapy.

II. Write Short Notes : **(8 x 5 = 40)**

1. Partition co-efficient.
2. Write the physicochemical parameters in QSAR.
3. Write the drug designing of pro-drugs.
4. Give the general applications of procedure pharmacology.
5. Write the importance of chelates in medicine.
6. Write the principles of computer aided drug design.
7. Isosterism.
8. Write a note on viral vectors in gene therapy.

*****

March 2010

[KW 327] **Sub. Code: 2863**

M.PHARM. DEGREE EXAMINATION

(Regulations 2006)

Candidates admitted from 2006-2007 onwards

FIRST YEAR

Branch IV – PHARMACOLOGY

Paper IV – DRUG DESIGN AND MOLECULAR PHARMACOLOGY

Q.P. Code : 262863

Time : Three hours **Maximum : 100 marks**

Answer All questions

I. Essay Questions : **(3 x 20 = 60)**

1. Define gene therapy. Discuss in detail the different types of gene therapy.

2. Discuss briefly the receptor polymorphism and dimerization and its importance in drug design.

3. Briefly discuss the various structural factors in drug design.

II. Write Short Notes : **(8 x 5 = 40)**

1. Applications of molecular pharmacology.
2. QSAR parameters related to chemical structure.
3. Classify receptors.
4. Write a brief note on gene mapping.
5. Isolation of RNA from yeast.
6. Application of pro-drug.
7. Cell signaling.
8. Oxidation reduction potential.

*****

September 2010

[KX 327] **Sub. Code: 2863**

M.PHARM. DEGREE EXAMINATION

(Regulations 2006)

(Candidates admitted from 2006-2007 onwards)

FIRST YEAR

Branch IV – PHARMACOLOGY

Paper IV – DRUG DESIGN AND MOLECULAR PHARMACOLOGY

Q.P. Code : 262863

Time : Three hours **Maximum : 100 marks**

Answer All questions

I. Essay Questions : **(3 x 20 = 60)**

1. What are the different methods adopted in drug design to discover a lead molecule? Explain them with examples.

2. Discuss briefly the receptor polymorphism and dimerization and its importance in drug design.

3. Write a note on protein structure prediction and molecular modeling.

II. Write Short Notes : **(8 x 5 = 40)**

1. Discuss the principles involved in the design of pro-drug.
2. Write a note on partition co-efficient.
3. Explain briefly about electronic parameters used in QSAR.
4. Write a note on viral vectors in gene therapy.
5. Write briefly about the principles of computer aided drug design.
6. Explain the signal transduction pathways.
7. Describe the importance of chelates in medicine.
8. Write a note on optical isomerism and biological activity.

*****

MAY 2011

[KY 327] **Sub. Code: 2863**

M.PHARM. DEGREE EXAMINATION

(Regulations 2006)

(Candidates admitted from 2006-2007 onwards)

FIRST YEAR

BRANCH IV – PHARMACOLOGY

PAPER IV – DRUG DESIGN AND MOLECULAR PHARMACOLOGY

Q.P. Code : 262863

Time : Three hours **Maximum : 100 marks**

Answer All questions

I. Essay Questions : **(3 x 20 = 60)**

1. Write in detail about Overton and Mayer theory. Also explain the exceptions of the theory.
2. Write in detail about geometric isomerism and conformational isomerism on pharmacological activity?
3. Enumerate various cell signalling methods? Describe the various secondary messengers involved in signal transduction pathway?

II. Write Short Notes : **(8 x 5 = 40)**

1. Clinical applications of gene therapy.
2. Tryptophan operon model.
3. Organization of DNA in cells and the role of histones?
4. Application of prodrug in parenteral dosage forms.
5. What are receptor binding assays? Explain in detail.
6. Computational combinatorial ligand design
7. Explain the process of translation of proteins.
8. Southern blotting.

****