THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[LM 987] MAY 2018 **Sub. Code: 2987**

M.PHARM. DEGREE EXAMINATION
(PCI New regulations 2016)
SEMESTER-II
BRANCH-VI – PHARMACOLOGY – MPL
PAPER III – PRINCIPLES OF DRUG DISCOVERY

Q.P. Code : 262987

Time : Three hours **Maximum : 75 Marks**

I. Elaborate on: **(2 x 20 = 40)**

1. Discuss about the Pharmacophore mapping and Pharmacophore based screening.
2. Explain in detail about the concepts of Rational drug design.

II. Write notes on: **(7 x 5 = 35)**

1. Micro array technology.
2. High throughput screening.
3. Role of transgenic animals in target validation.
4. Validation of Genomics.
5. Bioinformatics.
6. Explain briefly about molecular docking.
7. Drug likeness screening.

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[LN 987] NOVEMBER 2018 **Sub. Code: 2987**

M.PHARM. DEGREE EXAMINATION
(PCI New regulations 2016)
SEMESTER-II
BRANCH-VI – PHARMACOLOGY – MPL
PAPER III – PRINCIPLES OF DRUG DISCOVERY

Q.P. Code : 262987

Time : Three hours **Maximum : 75 Marks**

I. Elaborate on: **(2 x 20 = 40)**

1. Explain in detail with suitable examples, how the bio-informatics and genomics information can be used for target identification/validation?

2. a) Write the steps involved in protein prediction.
   b) What are the applications of NMR and crystalgraphy techniques?

II. Write notes on: **(7 x 5 = 35)**

1. What is 2D and 3D Pharmacophore approach of drug designing? Explain.
2. What is meant by: a) Hit b) SiRNAs c) Motifs
   d) High through put screening e) Peptide
3. What is Hansch analysis of QSAR modeling? Explain.
4. Write a note on prodrug concepts.
5. What is De novo drug design? Give its limitations.
6. Compare and contrast virtual screening and conventional methods of drug development.
7. What are transgenic animals? How it is useful in drug development?

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[LO 987] MAY 2019 **Sub. Code: 2987**

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SEMESTER-II
BRANCH-VI – PHARMACOLOGY – MPL
PAPER III – PRINCIPLES OF DRUG DISCOVERY

Q.P. Code : 262987

Time : Three hours **Maximum : 75 Marks**

I. Elaborate on: **(2 x 20 = 40)**

1. a) What are the different statistical methods applied to validate the developed QSAR model? Explain PLS model.
   b) Differentiate SAR & QSAR.

2. Explain the following:
   a) One Target validation techniques.
   b) Anti sense technologies.
   c) Briefly explain the cost involvement and feasibility of new drug discovery in India.

II. Write notes on: **(7 x 5 = 35)**

1. What are micro arrays? Write its importance in target discovery.
2. What are the parameters to be considered in lead optimization procedure?
3. What is meant by:
   a) αHelix b) Zinc finger proteins c) Pharmacophore
   d) Scaffold e) Nucleotide
4. Write a note on rationale drug design.
5. Name the programs used in docking process. What is meant by G score?
6. Why solubility has been considered as one of the important parameters in drug development? Explain.
7. Explain the term COMFA & COMSIA.

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[LP 987] NOVEMBER 2019 **Sub. Code: 2987**

M.PHARM. DEGREE EXAMINATION
(PCI New regulations 2016)
SEMESTER-II
BRANCH-VI – PHARMACOLOGY – MPL
PAPER III – PRINCIPLES OF DRUG DISCOVERY

Q.P. Code : 262987

Time : Three hours **Maximum : 75 Marks**

I. Elaborate on: **(2 x 20 = 40)**

1. Discuss in detail about various computational prediction of Protein structure.
2. Explain in detail about 3D QSAR approaches.

II. Write notes on: **(7 x 5 = 35)**

1. Target validation role of genomics.
2. Economics of drug discovery.
3. List out various QSAR statistical methods and explain any one.
4. Explain any two *in silico* Lead discovery technique.
5. Add a note on assay development for Hit identification.
6. Hansch Analysis.
7. Rationale of prodrug design.

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[LQ 0121] JANUARY 2021 Sub. Code: 2987

(APRIL 2020 EXAM SESSION)

M.PHARMACY DEGREE EXAMINATION

SEMESTER-II (PCI New regulations 2016)

PHARMACOLOGY – MPL

PAPER III – PRINCIPLES OF DRUG DISCOVERY

Q.P. Code : 262987

Time : Three hours **Answer ALL Questions** **Maximum : 75 Marks**

I. Elaborate on: **(2 x 20 = 40)**

1. a) Explain the structure and pharmacophore based drug designing approaches with suitable example.
   b) Add a note on pharmacophore mapping.

2. a) What is 3D QSAR? How it improves the drug development process? Explain 3D QSAR approach with suitable example.
   b) Add a note on Fee Wilson Analysis.

II. Write notes on: **(7 x 5 = 35)**

1. Write the role of bioinformatics in target identification.
2. What is SiRNA? State its role in drug discovery.
3. How transgenic mice model can elucidate a target validation process? Explain with one example.
4. Write a note on X-ray crystallographic technique in protein structure prediction.
5. Define the term in relation to protein.
   a) Helix b) Motif c) Domain d) Codon e) Ribbon
6. Write a note on high through put screening.
7. Why solubility of the drug is an important parameter in drug discovery process?

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[MPHARM 0921] SEPTEMBER 2021 Sub. Code: 2987
(OCTOBER 2020 EXAM SESSION)

M.PHARMACY DEGREE EXAMINATION
SEMESTER-II (PCI New regulations 2016)
PHARMACOLOGY - MPL
PAPER III – PRINCIPLES OF DRUG DISCOVERY
Q.P. Code : 262987

Time : Three hours **Answer ALL Questions** **Maximum : 75 Marks**

I. Elaborate on: **(2 x 20 = 40)**

1. Explain in detail the rationale and practical considerations involved in prodrug design.

2. Discuss in detail the application of NMR and X ray crystallography in protein structure prediction.

II. Write notes on: **(7 x 5 = 35)**

1. Explain the relation between Hansch and Free Wilson analysis.
2. Discuss the role of Bioinformatics in target discovery and validation.
3. Write a note on small interfering RNA (siRNA).
4. Denovo drug design.
5. Enumerate the differences between SAR and QSAR.
6. Write a note on Comparative Molecular Field Analysis (COMFA).
7. Structure based drug design.

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[MPHARM 0122] JANUARY 2022 Sub. Code: 2987
(APRIL 2021 EXAM SESSION)

M.PHARMACY DEGREE EXAMINATION
SEMESTER-II (PCI New regulations 2016)
PHARMACOLOGY - MPL
PAPER III – PRINCIPLES OF DRUG DISCOVERY
Q.P. Code : 262987

Time : Three hours **Answer ALL Questions** **Maximum : 75 Marks**

I. Elaborate on: **(2 x 20 = 40)**

1. Explain in detail the role of genomics and proteomics in target discovery and validation.

2. Discuss in detail the various methods employed in molecular docking-based screening of new chemical entities.

II. Write notes on: **(7 x 5 = 35)**

1. Zinc finger proteins.
2. Threading methods in protein structure prediction.
3. Explain the application of Combinatorial chemistry in lead identification.
4. Discuss the concept of pharmacophore mapping.
5. Hansch analysis.
6. Ligand based drug design.
7. Regression analysis.

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