

Roll No.

Total No. of Questions : 06

Total No. of Pages : 01

M. Pharmacy (Pharmacology) (Sem.-1)

ADVANCED PHARMACOLOGY-I

Subject Code : MPL-102T

M.Code : 74676

Date of Examination : 16-05-2023

Time : 3 Hrs.

Max. Marks : 75

INSTRUCTIONS TO CANDIDATES :

1. Attempt any FIVE questions out of SIX questions.
2. Each question carries FIFTEEN marks.

1. Discuss the pathophysiology and recent pharmacotherapeutics management of hypertension.
2. a) Explain the pathophysiology of psychosis. What are the actions and adverse effects of typical antipsychotic drugs?
b) What is the role of beta- amyloid in development of Alzheimer diseases?
3. a) What are the general aspects of neurotransmission?
b) What are the different actions of anti-muscarinic agents?
c) Classify sympathomimetic drugs. Explain the pharmacology of epinephrine.
4. What are the physiological roles of histamine, serotonin and prostaglandins? What are the therapeutic uses and adverse effects of anti-histaminic drugs?
5. a) Define and classify anti coagulants.
b) Discuss the differences in the pharmacological actions heparin and oral anticoagulants.
6. a) Explain various factors modifying drug action.
b) What are G-protein coupled receptors? What are its different types depending on signal transduction mechanisms?

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(S31)-28

July-2023

Roll No.
Total No. of Questions : 06

Total No. of Pages : 01

M.Pharmacy(Pharmacology) (Sem.-1)
MODERN PHARMACEUTICAL ANALYTICAL TECHNIQUES

Subject Code : MPL-101T

M.Code : 74675

Date of Examination : 20-05-2023

Time : 3 Hrs.

Max. Marks : 75

INSTRUCTIONS TO CANDIDATES :

1. Attempt any FIVE questions out of SIX questions.
 2. Each question carries FIFTEEN marks.
-
1. a) Describe Beer Lambert's law of UV-VIS spectroscopy. Elaborate on various factors affecting the absorption maxima.
b) How will you differentiate between *o*-nitrophenol and *p*-nitrophenol on the basis of IR spectral data?
 2. a) Define the terms Chemical Shift, Paramagnetism and Diamagnetism with examples. Enumerate various factors affecting chemical shift. Describe any two factors with examples.
b) How will you differentiate between *o*-nitrophenol and *p*-nitrophenol on the basis of ¹H-NMR spectral data?
 3. a) What is the principle of mass spectrometry? Write a note on various hard and soft ionization techniques.
b) Predict the mass fragmentation pattern of ethyl pentanoate in EI mode.
 4. a) Give classification of chromatographic techniques on the basis of mechanism of separation. Recall specific applications of each class.
b) Write a note on instrumentation, applications and limitations of Gas chromatography.
 5. a) What is the principle of Gel electrophoresis? Write a note on its instrumentation and applications.
b) Write a note on rotating crystal technique.
 6. **Write short notes on:**
 - a) Ion-selective electrodes
 - b) Principle and applications of DSC
 - c) Advantages of DDTA over DTA

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July - 2023

Roll No.

Total No. of Pages : 01

Total No. of Questions : 06

M. Pharmacy (Pharmacology) (Sem.-1)

CELLULAR & MOLECULAR PHARMACOLOGY

Subject Code : MPL-104T

M.Code : 74678

Date of Examination : 22-05-2023

Time : 3 Hrs.

Max. Marks : 75

INSTRUCTIONS TO CANDIDATES :

1. Attempt any FIVE questions out of SIX questions.
 2. Each question carries FIFTEEN marks.
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1. a) What are miRNA? Write about its genesis and silencing mechanism.
b) Define autophagy. Write different types of autophagy.
 2. a) What are the mechanisms involved in JAK STAT signaling?
b) Write functional significance and clinical uses of JAK STAT signaling.
c) What are biosimilars? Give examples of approved biosimilars.
 3. a) What is discontinuous buffer system method in gel electrophoresis?
b) Define proteome and proteomics.
c) Differentiate genomics and genetics.
d) Write applications of Metabolomics.
 4. a) What are the types of immunotherapeutic agents in clinical practice?
b) What do you understand by Evans Blue test for assessing cell viability?
 5. a) What are solute carrier transporters? Write their significance.
b) Discuss potential applications and challenges of pharmacogenetics in health care.
 6. a) What is indirect ELISA? Explain sandwich and competitive methods of ELISA.
b) How may gene therapy be useful in different diseases?

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July-2023

Roll No.

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Total No. of Questions : 06

Total No. of Pages : 01

M.Pharmacy (Pharmacology) (Sem.-1)
CELLULAR & MOLECULAR PHARMACOLOGY

Subject Code : MPL-104T

M.Code : 74678

Date of Examination : 19-01-2023

Time : 3 Hrs.

Max. Marks: 75

INSTRUCTIONS TO CANDIDATES :

1. Attempt any FIVE questions out of SIX questions.
2. Each question carries FIFTEEN marks.

1. (a) Give a note on gene mapping and sequencing.
(b) Write a note on pathways of the apoptosis.
2. (a) Discuss the general about ligand gated ion channels with examples.
(b) Write a note on role of secondary messenger with special emphasis on inositol 1,4,5 triphosphate.
3. (a) Give the principle and application of the PCR.
(b) Discuss the JAK/STAT pathway in detail with a suitable flowchart.
4. Write a note on gene therapy, its clinical applications and recent advancements.
5. (a) Discuss in brief about pharmacogenomics and its role in selection of the personalized medication.
(b) Give a short note on monoclonal antibody as immunotherapeutics and their application in clinical practice.
(a) Give principle and applications of flow cytometry.
(b) Give general procedure for the cell culture. What do you understand by cryopreservation?

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M-74678

(S31)-2583



DSL-2022

Roll No.

Total No. of Questions : 06

Total No. of Pages : 01

M.Pharmacy (Pharmacology) (Sem.-1)
**PHARMACOLOGICAL AND TOXICOLOGICAL SCREENING
METHODS-I**

Subject Code : MPL-103T

M.Code : 74677

Date of Examination : 17-01-23

Time : 3 Hrs.

Max. Marks: 75

INSTRUCTIONS TO CANDIDATES :

1. Attempt any FIVE questions out of SIX questions.
2. Each question carries FIFTEEN marks.
1. Write notes on following :
 - a) CPCSEA and its role in regulations of experiments on animals
 - b) Transgenic animal models
 - c) Alternative to animal experiments.
2. a) Enlist various animal models of diabetes and discuss in detail about chemically induced diabetes.
b) Add a note on genetically induced diabetes.
3. Give a detailed account on preclinical pharmacological screening models for antiulcer agents.
4. Enlist various in-vivo screening models of analgesics and add a critical note on screening of centrally acting analgesics.
5. Write notes on the following :
 - a) MPTP induced Parkinsonism
 - b) Spontaneous hypertensive rats
 - c) Despair swim test.
6. a) Write a critical note on animal models of aggression induced anxiety.
b) Describe Gold-blatt technique of Reno-vascular hypertension in animals.

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(S31)-2474

Dec-2022

Roll No.

Total No. of Questions : 06

Total No. of Pages : 01

M. Pharmacy (Pharmacology) (Sem.-1)

ADVANCED PHARMACOLOGY-I

Subject Code : MPL-102T

M.Code : 74676

Date of Examination : 14-01-23

Time : 3 Hrs.

Max. Marks : 75

INSTRUCTIONS TO CANDIDATES :

1. Attempt any FIVE questions out of SIX questions.
 2. Each question carries FIFTEEN marks.
1. a) Classify anti-arrhythmic drugs. What are therapeutic uses, mechanism of action and adverse effects? (10)
 - b) What are the different therapeutic uses of aspirin? (5)
 2. a) What are the side effects of beta blockers? (5)
 - b) Write a note on first line drugs used in hypertension. (10)
 3. a) Define epilepsy and seizures. Classify anti-epileptic drugs. (5)
 - b) Explain mechanism of action of ACE inhibitors in CHF. (5)
 - c) What are the therapeutic uses and adverse effects of SSRI? (5)
 4. a) Write about the neurohumoral transmission of GABA, histamine and dopamine in CNS. (7)
 - b) Write therapeutic uses of anti cholinergic agents along with their side effects. (8)
 5. a) What are the factors influencing biotransformation of drugs? (5)
 - b) Write a note on drugs decreasing action of RAAS. (5)
 - c) What is the role of diuretics in CHF and hypertension? Give mechanism of action. (5)
 6. a) How sedatives are different from hypnotics? What are the indication of barbiturates and benzodiazepines? (8)
 - b) What are the therapeutics uses of calcium channel blockers? (7)

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(S31)-2352

DSC-2022

Roll No.

Total No. of Questions : 06

Total No. of Pages : 01

M. Pharmacy (Pharmacology) (Sem.-1)
MODERN PHARMACEUTICAL ANALYTICAL TECHNIQUES

Subject Code : MPL-101T

M.Code : 74675

Date of Examination: 12-01-2023

Time : 3 Hrs.

Max. Marks : 75

INSTRUCTIONS TO CANDIDATES :

1. Attempt any FIVE questions out of SIX questions.
 2. Each question carries EQUAL marks.
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1. (a) What is the principle of DSC? Describe the different types of DSC designs with the help of neat well-labeled diagrams.
(b) Explain the applications of TGA with the help of a suitable TGA curve.
 2. (a) Give the principle, working conditions, factors affecting separation and application of Capillary electrophoresis.
(b) Write a note on different XRD methods.
 3. (a) What are the principles of separation in GSC and GLC? Discuss various factors affecting separation by GC.
(b) Give a detailed comparative account on TLC and HPTLC.
 4. (a) Discuss various types of hard ionization techniques used in mass spectrometry. Enumerate their advantages and limitations.
(b) How will you differentiate between n-pentanol and 3-pentanol on the basis of their mass 5 fragmentation patterns?
 5. (a) Define the term chemical shift. Discuss various factors affecting it with the help of suitable examples.
(b) Write note on ¹³C-NMR.
 6. (a) How does the polarity of solvent affect the UV absorption spectrum of a molecule? Give an example.
(b) How will you differentiate between acetone and acetaldehyde on the basis of IR spectral data?
(c) Give a descriptive note on various interferences possible in flame emission spectroscopy.

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(S31)-2266

DSC-2022

Roll No.

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Total No. of Questions : 06

Total No. of Pages : 01

M.Pharmacy (Pharmacology) (Sem.-1)
CELLULAR & MOLECULAR PHARMACOLOGY

Subject Code : MPL-104T

M.Code : 74678

Date of Examination : 19-01-2023

Time : 3 Hrs.

Max. Marks: 75

INSTRUCTIONS TO CANDIDATES :

1. Attempt any FIVE questions out of SIX questions.
2. Each question carries FIFTEEN marks.

1. (a) Give a note on gene mapping and sequencing.
(b) Write a note on pathways of the apoptosis.
2. (a) Discuss the general about ligand gated ion channels with examples.
(b) Write a note on role of secondary messenger with special emphasis on inositol 1,4,5 triphosphate.
3. (a) Give the principle and application of the PCR.
(b) Discuss the JAK/STAT pathway in detail with a suitable flowchart.
4. Write a note on gene therapy, its clinical applications and recent advancements.
5. (a) Discuss in brief about pharmacogenomics and its role in selection of the personalized medication.
(b) Give a short note on monoclonal antibody as immunotherapeutics and their application in clinical practice.
6. (a) Give principle and applications of flow cytometry.
(b) Give general procedure for the cell culture. What do you understand by cryopreservation?

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DSC-2022

Roll No.

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Total No. of Pages : 01

Total No. of Questions : 06

M.Pharmacy (Pharmacology) (Sem.-1)

**PHARMACOLOGICAL AND TOXICOLOGICAL SCREENING
METHODS-I**

Subject Code : MPL-103T

M.Code : 74677

Date of Examination : 17-01-23

Time : 3 Hrs.

Max. Marks: 75

INSTRUCTIONS TO CANDIDATES :

1. Attempt any FIVE questions out of SIX questions.
2. Each question carries FIFTEEN marks.

1. Write notes on following :

- a) CPCSEA and its role in regulations of experiments on animals
- b) Transgenic animal models
- c) Alternative to animal experiments.

2. a) Enlist various animal models of diabetes and discuss in detail about chemically induced diabetes.
- b) Add a note on genetically induced diabetes.

3. Give a detailed account on preclinical pharmacological screening models for antiulcer agents.

4. Enlist various in-vivo screening models of analgesics and add a critical note on screening of centrally acting analgesics.

5. Write notes on the following :

- a) MPTP induced Parkinsonism
- b) Spontaneous hypertensive rats
- c) Despair swim test.

6. a) Write a critical note on animal models of aggression induced anxiety.
- b) Describe Gold-blatt technique of Reno-vascular hypertension in animals.

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(S31)-2474

Dec-2022

Roll No.

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Total No. of Questions : 06

Total No. of Pages : 01

M. Pharmacy (Pharmacology) (Sem.-1)

ADVANCED PHARMACOLOGY-I

Subject Code : MPL-102T

M.Code : 74676

Date of Examination : 14-01-23

Time : 3 Hrs.

Max. Marks : 75

INSTRUCTIONS TO CANDIDATES :

Attempt any FIVE questions out of SIX questions.
Each question carries FIFTEEN marks.

- a) Classify anti-arrhythmic drugs. What are therapeutic uses, mechanism of action and adverse effects? (10)
- b) What are the different therapeutic uses of aspirin? (5)
- a) What are the side effects of beta-blockers? (5)
- b) Write a note on first line drugs used in hypertension. (10)
- a) Define epilepsy and seizures. Classify anti-epileptic drugs. (5)
- b) Explain mechanism of action of ACE inhibitors in CHF. (5)
- c) What are the therapeutic uses and adverse effects of SSRI? (5)
- a) Write about the neurohumoral transmission of GABA, histamine and dopamine in CNS. (7)
- b) Write therapeutic uses of anti cholinergic agents along with their side effects. (8)
- a) What are the factors influencing biotransformation of drugs? (5)
- b) Write a note on drugs decreasing action of RAAS. (5)
- c) What is the role of diuretics in CHF and hypertension? Give mechanism of action. (5)
- a) How sedatives are different from hypnotics? What are the indication of barbiturates and benzodiazepines? (8)
- b) What are the therapeutics uses of calcium channel blockers? (7)

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(S31)-2352

DEC-2022

Roll No.

Total No. of Questions : 06

Total No. of Pages : 01

M.Pharmacy(Pharmacology) (Sem.-1)

MODERN PHARMACEUTICAL ANALYTICAL TECHNIQUES

Subject Code : MPL-101T

M.Code : 74675

Date of Examination: 12-01-2023

Time : 3 Hrs.

Max. Marks : 75

INSTRUCTIONS TO CANDIDATES :

1. Attempt any FIVE questions out of SIX questions.
2. Each question carries EQUAL marks.

1. (a) What is the principle of DSC? Describe the different types of DSC designs with the help of neat well-labeled diagrams.
(b) Explain the applications of TGA with the help of a suitable TGA curve.
2. (a) Give the principle, working conditions, factors affecting separation and application of Capillary electrophoresis.
(b) Write a note on different XRD methods.
3. (a) What are the principles of separation in GSC and GLC? Discuss various factors affecting separation by GC.
(b) Give a detailed comparative account on TLC and HPTLC.
4. (a) Discuss various types of hard ionization techniques used in mass spectrometry. Enumerate their advantages and limitations.
(b) How will you differentiate between n-pentanol and 3-pentanol on the basis of their mass 5 fragmentation patterns?
5. (a) Define the term chemical shift. Discuss various factors affecting it with the help of suitable examples.
(b) Write note on $^{13}\text{C-NMR}$.
6. (a) How does the polarity of solvent affect the UV absorption spectrum of a molecule? Give an example.
(b) How will you differentiate between acetone and acetaldehyde on the basis of IR spectral data?
(c) Give a descriptive note on various interferences possible in flame emission spectroscopy.

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D2L-2022

Roll No. _____

Total No. of Questions : 06

Total No. of Pages : 02

**M. Pharmacy (Pharmacology) (2017 & Onwards) (Sem.-1)
ADVANCED PHARMACOLOGY-I**

Subject Code : MPL-102T
M.Code : 74676

Time : 3 Hrs.

Max. Marks : 75

INSTRUCTIONS TO CANDIDATES :

1. Attempt any FIVE questions out of SIX questions.
2. Each question carries FIFTEEN marks.

1. Write notes on following :

- a. Explain neurochemical basis of Schizophrenia. Discuss the clinical status of atypical antipsychotics. (10)
 - b. Write a short note on antiplatelet drugs. (5)
2. Discuss the mechanism of action, adverse effects and clinical status of the following drugs :
- a. Nitroglycerine (5)
 - b. Atorvastatin (5)
 - c. Lignocaine (5)
3. a. Discuss various agents affecting neuromuscular junction. (8)
b. Elaborate the significance of protein binding. (7)

4. Discuss briefly :

- a. Steps involved in adrenergic neurotransmission (5)
- b. Therapeutic status of Cholinesterase inhibitors (5)
- c. Class II antiarrhythmic agents (5)

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5. Justify the use of the following drugs

- a. Diuretics in hypertension (5)
 - b. Vasodilators in congestive heart failure (5)
 - c. GABAergic drugs in anxiety (5)
6. Discuss Briefly :
- a. Status of newer antiepileptic drugs (8)
 - b. Management of Congestive heart failure (7)

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U.M.C.



Roll No. _____
Total No. of Questions : 06

Total No. of Pages : 01

M.Pharmacy(Pharmacology) (2017 & Onwards) (Sem.-1)
**PHARMACOLOGICAL AND TOXICOLOGICAL SCREENING
METHODS-I**

Subject Code : MPL-103T
M.Code : 74677

Time : 3 Hrs.

Max. Marks: 75

INSTRUCTIONS TO CANDIDATES :

1. Attempt any FIVE questions out of SIX questions.
2. Each question carries FIFTEEN marks.

1. Discuss the following :
 - a) Potential of transgenic animals as tools in drug discovery 8
 - b) Principle of immunoassay for insulin 7
2. Write short notes on :
 - a) Porsolt's swim method 5
 - b) Pyloric ligation induced ulcers 5
 - c) Chemical-induced Arrhythmia 5
3. Discuss briefly :
 - a) Streptozotocin and Alloxan as diabetogens 8
 - b) Morris water maze test for assessment of memory related tasks 7
4. Enumerate methods to evaluate analgesic activity of a drug. 10
 - b) Compare plus maze and mirror chamber tests for evaluation of antianxiety activity. 5
5. Write short notes on :
 - a) Goldblatt hypertension 8
 - b) Perphenazine induced catalepsy 7
6. Describe the following :
 - a) Carrageenan-induced paw oedema 7
 - b) Animal models of hyperlipidemia 8

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DEC-19

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Roll No.

Total No. of Questions : 06

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M.Pharmacy(Pharmacology) (2017 & Onwards) (Sem.-1)
**PHARMACOLOGICAL AND TOXICOLOGICAL SCREENING
METHODS-I**

Subject Code : MPL-103T

M.Code : 74677

Time : 3 Hrs.

Max. Marks: 75

INSTRUCTIONS TO CANDIDATES :

1. Attempt any FIVE questions out of SIX questions.
2. Each question carries FIFTEEN marks.

1. Write notes on following :
 - a) Immunoassay 5
 - b) GLP 5
 - c) Euthanasia 5
2. Explain in detail preclinical screening of :
 - a) Anti parkinson's drugs 7.5
 - b) Antiulcer agents 7.5
3. Discuss briefly :
 - a) Cytotoxin induced diabetes 5
 - b) Carragenan induced inflammation 5
 - c) Morris water maze 5
4.
 - a) What are hepatoprotective agents? 5
 - b) Discuss the screening methods for :
 - i) Hepatoprotective agents. 5
 - ii) Aphrodisiacs agents 5
5. Write notes on following :
 - a) Transgenic animals 7.5
 - b) Two animal model of antihypertensive agents 7.5
6. Define Bioassay. Discuss the principles of bioassay. Explain different methods of bioassay. 15

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May - 2019



Roll No. _____

Total No. of Questions : 06

Total No. of Pages : 01

M.Pharmacy(Pharmacology) (2017 & Onwards) (Sem.-1)
MODERN PHARMACEUTICAL ANALYTICAL TECHNIQUES

Subject Code : MPL-101T

M.Code : 74675

Time : 3 Hrs.

Max. Marks : 75

INSTRUCTIONS TO CANDIDATES :

1. Attempt any FIVE questions out of SIX questions.
2. Each question carries FIFTEEN marks.

- Q1. a) Explain the principle and applications of atomic absorption spectroscopy in drug discovery. (7)
b) Discuss various factors that affect UV spectra of a compound. (8)
- Q2. a) What do you understand by the terms Spin-spin coupling, coupling constant and double resonance? Discuss various factors affecting them. (10)
b) Elaborate on applications of NMR in the field of drug discovery. (5)
- Q3. a) Explain mass fragmentation with suitable examples. Discuss various rules that govern mass fragmentation. (9)
b) Discuss the principle of MALDI, APCI, and TOF. (6)
- Q4. a) You have to develop an analytical method on HPLC. What are the various factors you have to keep in mind that can effect the resolution? (8)
b) Discuss principle and applications of potentiometric analysis. (7)
- Q5. a) Compare Gel and capillary electrophoresis on the basis of their principle, instrumentation and applications. (8)
b) Give the principle of HPTLC and its applications in the field of pharmacology. (4)
c) Explain the principle of Moving boundary electrophoresis and XRD. (3)
- Q6. a) Give the principle, instrumentation and application of DSC in pharmaceutical industry. (8)
b) Compare GC and UPLC on the basis of principle, sensitivity and instrumentation. (7)

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(S31)-277



Dec-19

Roll No.

Total No. of Questions : 06

Total No. of Pages : 01

M.Pharmacy(Pharmacology) (2017 & Onwards) (Sem.-1)
MODERN PHARMACEUTICAL ANALYTICAL TECHNIQUES

Subject Code : MPL-101T

M.Code : 74675

Time : 3 Hrs.

Max. Marks : 75

INSTRUCTIONS TO CANDIDATES :

1. Attempt any FIVE questions out of SIX questions.
2. Each question carries EQUAL marks.

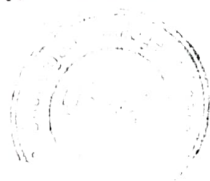
1. Discuss the theory of UV-visible spectroscopy including the concepts of energy level, transition types, chromophores and the laws of absorption spectroscopy with their limitations. 15
2. a. Explain the phenomenon of DEPT with appropriate examples. What is its importance? 7
b. Write down the applications of IR spectroscopy. 8
3. a. Write down the salient features of GC detectors. Give principle and working of any two detectors in details. 8
b. Give the principle and applications of flame spectroscopy. 7
4. a. Describe the principle and any two types of ionization methods of mass spectroscopy. 10
b. Discuss the theory of fluorescence with Jablonski diagram. 5
5. Write short notes on the following : 3×5 = 15
 - a. Applications of potentiometry.
 - b. Principle and instrumentation of TGA.
 - c. Modulated DSC and hyper DSC. 3×5=15
6. Write briefly on the following:
 - a. Moving boundary electrophoresis.
 - b. Types of crystals and applications of X-ray diffraction.
 - c. Advantages and Disadvantages of Differential Thermal Analysis (DTA).

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May-2019



Roll No.

Total No. of Pages : 01

Total No. of Questions : 06

M.Pharmacy (Pharmacology) (2017 & Onwards) (Sem.-1)

CELLULAR & MOLECULAR PHARMACOLOGY

Subject Code : MPL-104T

M.Code : 74678

Time : 3 Hrs.

Max. Marks: 75

INSTRUCTIONS TO CANDIDATES :

1. Attempt any FIVE questions out of SIX questions.
2. Each question carries FIFTEEN marks.

1. Differentiate between Apoptosis and Necrosis. Describe various pathways involved in apoptosis. 15
2. Discuss the following :
 - a) MAPK Signalling 9
 - b) ELISA 6
3. a) Describe the impact of CYP polymorphism on drug therapy 10,5
b) Write a short note on Nutrigenomics
4. Discuss the following :
 - a) Immunotherapeutics 8
 - b) Recombinant DNA Technology 7
5. a) Discuss in brief various cellular viability assays. Describe different techniques used in cell culture. 10
b) Enumerate various GPCRs. 5
6. a) Describe the principle and applications of flow cytometry 8
b) Describe the potential of gene therapy in medical practice. 7



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Roll No.

Total No. of Questions : 06

Total No. of Pages : 01

M. Pharmacy (Pharmacology) (2017 & Onwards) (Sem. -1)
**PHARMACOLOGICAL AND TOXICOLOGICAL SCREENING
METHODS-I**

Subject Code : MPL-103T

Paper ID : [74677]

Time : 3 Hrs.

Max. Marks: 75

INSTRUCTIONS TO CANDIDATES :

1. Attempt any FIVE questions out of SIX questions.
 2. Each question carries FIFTEEN marks.
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1. a) What is CPCSEA discuss its functions and guidelines for use of laboratory animals (7.5)
b) Add a note on anesthetics used in laboratory and euthanasia of experimental animals. (7.5)
 2. Discuss in detail about animal models to screen central analgesic activity of an entity, critically indicating merits and demerits of each model. (15)
 3. a) Describe any two animal models to screen hepato-protective activity of a molecule.
b) Write a note on immunoassay Insulin. (8+7)
 4. Write an exhaustive note on preclinical screening of drugs for Alzheimer. (15)
 5. a) Write a note on Stress ulcer in animals.
b) Chemically induced diabetes. (7+8)
 6. Write notes on following :
a) Goldblatt technique. (8+7)
b) Pacing induced arrhythmia.



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(53) 139

Roll No.

Total No. of Pages : 1

Total No. of Questions : 06

M.Pharmacy(Pharmacology) (2017 & Onwards) (Sem -1)

ADVANCED PHARMACOLOGY-I

Subject Code : MPL-102T

Paper ID : [74676]

Time : 3 Hrs.

Max. Marks : 75

INSTRUCTIONS TO CANDIDATES :

1. Attempt any FIVE questions out of SIX questions.
2. Each question carries FIFTEEN marks.

1. a) Write a note on non-adrenergic non-cholinergic co-transmission.
b) Add a critical note on drug absorption. (8+7)
2. Describe pharmacology of beta-blockers and critically discuss therapeutic uses of beta blockers with special emphasis on extra-cardiac implications. (15)
3. Discuss pathophysiology and drug therapy of anxiety. (15)
4. Discuss Pathophysiology and drug therapy of congestive heart failure (15)
5. a) Write a note on newer anti-epileptic drugs,
b) Write a note on fibrinolytics. (8+7)
6. Write notes on following :
a) Prostaglandins. (8+7)
b) 5HT-3 antagonists.



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Roll No. _____
Total No. of Questions : 06

Total No. of Pages : 01

M. Pharmacy (Pharmacology) (2017 & Onwards) (Sem.-1)
MODERN PHARMACEUTICAL ANALYTICAL TECHNIQUES
Subject Code : MPL-101T
Paper ID : [74675]

Time : 3 Hrs.

Max. Marks : 75

INSTRUCTIONS TO CANDIDATES :

1. Attempt any FIVE questions out of SIX questions.
2. Each question carries EQUAL marks.

1. a. What is derivative spectroscopy? (5)
b. Discuss the influence of mesomeric and inductive effect on vibrational frequency in IR spectrum. (5)
c. Describe the advantages of fluorimetry over the absorption spectroscopy. (5)
2. a. Comment on quantum number of NMR active nuclei. (5)
b. Compare ^1H NMR with ^{13}C NMR (5)
c. Use the N+1 rule to predict splitting pattern in following compounds: (5)
a) $\text{CH}_3\text{CH}_2\text{OH}$ b) $\text{CH}_3\text{CH}_2\text{Cl}$
3. a. Describe the construction and working of MALDI/TOF mass spectrometer. (7.5)
b. Describe the fragmentation rule to interpret mass spectrums. (7.5)
4. a. Give schematic diagram of an injector for packed column GC (5)
b. What is the principle of ultra-high performance liquid chromatography? (5)
c. Name various detecting reagents used in TLC. Give advantages of iodine vapours as a development reagent. (5)
5. a. What is zone electrophoresis? (5)
b. Compare zone electrophoresis with paper electrophoresis. (5)
c. Give applications of X-ray diffraction methods. (7.5)
6. a. What is hyper-DSC? Describe its advantages and disadvantages. (7.5)
b. Describe the factors affecting TG curves. (7.5)

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