CS/M.Pharm (Pharmacology)/SEM-2/MPT-208(II)/09
MOLECULAR PHARMACOLOGY (SEMESTER - 2)

1. ..... *Signature of Invigilator*

2. ..... *Signature of the Officer-in-Charge*

Reg. No. | | | | | | | | | | | | | | |

Roll No. of the Candidate | | | | | | | | | | | | | | |

CS/M.Pharm (Pharmacology)/SEM-2/MPT-208(II)/09
ENGINEERING & MANAGEMENT EXAMINATIONS, JULY – 2009
MOLECULAR PHARMACOLOGY (SEMESTER - 2)

Time : 3 Hours] [Full Marks : 70

INSTRUCTIONS TO THE CANDIDATES :

1. This Booklet is a Question-cum-Answer Booklet. The Booklet consists of **32 pages**. The questions of this concerned subject commence from Page No. 3.
2. a) In **Group – A**, Questions are of Multiple Choice type. You have to write the correct choice in the box provided **against each question**.
   b) For **Groups – B** & **C** you have to answer the questions in the space provided marked 'Answer Sheet'. Questions of **Group – B** are Short answer type. Questions of **Group – C** are Long answer type. Write on both sides of the paper.
3. **Fill in your Roll No. in the box** provided as in your Admit Card before answering the questions.
4. Read the instructions given inside carefully before answering.
5. You should not forget to write the corresponding question numbers while answering.
6. Do not write your name or put any special mark in the booklet that may disclose your identity, which will render you liable to disqualification. Any candidate found copying will be subject to Disciplinary Action under the relevant rules.
7. **Use of Mobile Phone and Programmable Calculator is totally prohibited in the examination hall.**
8. You should return the booklet to the invigilator at the end of the examination and should not take any page of this booklet with you outside the examination hall, **which will lead to disqualification**.
9. Rough work, if necessary is to be done in this booklet only and cross it through.

No additional sheets are to be used and no loose paper will be provided

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Marks Obtained

	Group – A										Group – B			Group – C				
Question Number																	***Total Marks***	***Examiner's Signature***
Marks Obtained																		

.....
Head-Examiner/Co-Ordinator/Scrutineer

49006 (08/07)

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CS/M.Pharm (Pharmacology)/SEM-2/MPT-208(II)/09

MOLECULAR PHARMACOLOGY

SEMESTER - 2

Time : 3 Hours] [Full Marks : 70

GROUP – A

(Multiple Choice Type Questions)

1. Choose the correct alternatives for any *ten* of the following : 10 × 1 = 10

i) Which reagent is used to visualize PCR products ?

a) Ethyl bromide b) Ethidium bromide

c) Bromine d) All of these. ☐

ii) Which gel is responsible for separating protein from mixture in Western Blotting analysis ?

a) Upper gel b) Lower gel

c) Both (a) and (b) d) Stacking gel. ☐

iii) For observing better morphology which section is mostly used in immunostaining ?

a) Frozen section b) Paraffin section

c) Resin section d) Resin and Frozen sections. ☐

iv) MPTP, is a neurotoxin that affects

a) Acetylcholine neuron b) Dopaminergic neuron

c) Glial cells d) None of these. ☐

v) Which of the following is not a characteristic of a Nuclear Receptor ?

a) Intracellular b) Effect DNA

c) Dimeric structure d) Monomeric structure. ☐

vi) In Parkinson's disease dopamine content of the substantia nigra and corpus striatum is

a) very high b) very low

c) intermediate d) zero. ☐

vii) The enzyme RNA-dependent DNA polymerase is used in

a) Western Blotting b) RT-PCR

c) RIA d) Gel electrophoresis. ☐

viii) The protein structure of *G*-protein-linked receptors includes a common ..... transmembrane domain.

a) 3 membered b) 5 membered

c) 7 membered d) 4 membered. ☐

ix) Immunosuppressant action of Cyclosporine is due to

a) activation of natural killer (NK) cells

b) increased catabolism of IgG antibodies

c) inhibition of the gene transcription of interleukins

d) interference with antigen recognition. ☐

x) The Limfahon of RIA is

a) simplicity b) sensitivity

c) highly specific d) expensive. ☐

xi) Tumor suppressor gene is

a) P^{52} b) P^{53}

c) P^{51} d) P^{61} .

xii) Lewy body formation is associated with

a) Alzheimer Disease b) Downs Syndrome

c) Myasthenia Gravis d) none of these.

GROUP – B

(Short Answer Type Questions)

Answer any *three* of the following. 3 × 5 = 15

2. Draw a flow chart for western blot analysis with a short description of the different steps. 5

3. What is Recombinant DNA technology ? Explain it's importance in molecular pharmacology. 2 + 3

4. a) What are the pathophysiological changes that lead to myasthenia gravis ? 3

   b) Write the modern approach to combat the disease. 2

5. Write down the advantages of Limfohons and application of RIA. 5

GROUP – C

(Long Answer Type Questions)

Answer any *three* of the following. 3 × 15 = 45

6. Describe how genetic mutation of various genes may lead to Parkinson's Disease in man. Mention the role of individual genes that are recently implicated for the pathology of the disease. Briefly outline the management of Parkinson's Disease. 15

7. a) What is an oncogene ? 2

   b) How are oncogenes produced from pro-oncogene ? 4

   c) What are the differences between oncogene, pro-oncogene and Tumor suppressor gene ? 4

   d) Write in brief about the different categories of oncogenes and their roles in carcinogenesis. 5

8. a) Write down the theory and assumptions of drug-receptor interaction. 5

b) How the activated receptors are desensitized ? 4

c) Discuss the cAMP and IP_3 -DAG pathways as second messenger system in intracellular signal transduction. 6

9. What do you mean by cell culture ? Write down the different steps of cell culture technique. How can you preserve a cell culture for a period of time for reusing ? 15

10. Describe the main Pathological features of Alzheimer Disease with special emphasis on formation of Amyloid plaque formation, neurofibrilatory tangles and loss of neurons. 15

END