Name : .....

Roll No. : .....

Invigilator's Signature : .....

CS/M.PHARM/SEM-1/MPT-108(2)/2012-13

2012

ADVANCED PHARMACOLOGY

Time Allotted : 3 Hours | Full Marks : 70

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

GROUP – A

(Multiple Choice Type Questions)

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

i) Which technique is best suited for ex-vivo gene therapy ?

a) Gene gun

b) Cationic lipid

c) Retrovirus mediated

d) Both (a) and (b).

ii) Which particle is used to coat DNA in gene gun ?

a) Gold b) Silver

c) Zinc d) None of these.

iii) The deficiency of which enzyme leads to SCID ?

a) Acyl transferase

b) Glucose isomerase

c) Enolase

d) Adenosine deaminase.

iv) What is the characteristic feature of retroviral construct with therapeutic gene ?

a) Therapeutic gene + replication enzyme

b) Preservation in soil + Integrase

c) Therapeutic gene + Packaging enzyme

d) Therapeutic gene only.

v) *n*NOS I is present in

a) Endothelium b) Epithelium

c) Neural cell d) None of these.

vi) Methotrexate inhibits

a) Folic acid synthesis

b) Tetrahydrofolic acid synthesis

c) DNA synthesis

d) RNA synthesis.

vii) Angiogenesis is

a) formation of vasculature

b) degeneration of vasculature

c) formation of abnormal cells

d) formation of lymphocytes.

viii) All are catecholamine receptors *except*

a) α_1 b) β_1

c) β_2 d) μ.

ix) All are immunosuppressive agents *except*

a) Glucocorticoid b) Tacrolimus

c) Mycophenolate d) Meprobamate.

x) Muromonab-CD3 is indicated for treatment of

a) acute organ transplant rejection

b) SLE

c) rheumatoid arthritis

d) none of these.

xi) Sumatriptan is the selective agonist of

a) 5-HT_{1D} b) 5-HT_{1A}

c) 5-HT2B d) 5-HT4.

xii) Sufentanil is agonist of

a) α_1 b) β_1

c) β_2 d) μ.

GROUP – B

(Short Answer Type Questions)

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

2. What is Gene therapy ? Write down the advantages and disadvantages of gene therapy. 2 + 3

3. How will you construct retroviral vector for gene therapy ? Write a note on Anti CD3 monoclonal antibody. 3 + 2

4. Explain the signal transduction mechanism of TNF-α receptor.

5. Write down the role of Prostaglandins in inflammatory diseases.

6. Discuss 'Anti-sense therapy in the management of cancer'.

GROUP – C

(Long Answer Type Questions)

Answer any *three* of the following. $3 \times 15 = 45$

7. Write notes on Glutamate receptor and Opioid receptor.

$7\frac{1}{2} + 7\frac{1}{2}$

8. Mention the producing cells, target cells and functions of the following cytokines : 5×3

   a) IL-2 b) IL-4 c) IL-5

   d) IL-10 e) IL-12.

9. Write in detail about the different types of adhesion molecules in the human body.

10. Write about the genetic basis of obesity. Write down the mechanism of action of Orlistat and Sibutramine. Write about some novel approach in the treatment of obesity.

5 + 5 + 5

11. Describe the process of tumor angiogenesis. Write short notes on VEGF and Endostatin. 5 + 5 + 5