Name : .....

Roll No. : .....

Invigilator's Signature : .....

CS/B.Pharm (OLD)/SEM-5/PT-503/2010-11

2010-11

PHARMACEUTICAL CHEMISTRY
(MEDICINAL CHEMISTRY)

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 : $10 \times 1 = 10$

   i) Oxytocin hormone contains

      a) 5 Amino acids b) 7 Amino acids

      c) 9 Amino acids d) 8 Amino acids.

   ii) Prostaglandin is bio-synthesized from a precursor named as

      a) prostanoic acid

      b) thrombaxanic acid

      c) arachidonic acid

      d) none of the essential acids.

   iii) Vasopressin is

      a) Autocoid b) Local hormone

      c) Peptide hormone d) Eicosanoid.

iv) Which of the following is a selective COX-2 inhibitor ?
   a) Valdecoxib b) Ibuprofen
   c) Sulindac d) None of these.

v) Parachor is related to
   a) CADD
   b) QSAR
   c) Combinatorial chemistry
   d) None of these.

vi) Benorylate is prepared from
   a) Aspirin + salicylate b) Aspirin + ibuprofen
   c) Aspirin + paracetamol d) None of these.

vii) Diphenhydramine contains
   a) One phenyl ring b) Two phenyl rings
   c) Three phenyl rings d) Four phenyl rings.

viii) Thioperamide is a
   a) H_3 antagonist b) H_2 antagonist
   c) H_1 antagonist d) None of these.

ix) Which of the following is a depolarizing neuromuscular blocking agent ?
   a) Triethyl choline b) Succinyl choline
   c) Pancuronium d) *d*-tubocurarine.

x) Which of the following compounds contains a pyridine ring ?
   a) Albuterol b) Pirbutarol
   c) Colterol d) Salmetrol.

xi) Phentolamine possesses which of the following structural moieties ?
   a) Phenyl ethanol amine b) Imidazoline
   c) β-alkyl amine d) None of these.

xii) Imidazole ring containing anti-ulcer drug is
   a) Ranitidine b) Famotidine
   c) Cimetidine d) None of these.

GROUP – B

(Short Answer Type Questions)

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

2. Give the SAR of beta-blocking agent.

3. Write a short note on neuromuscular blocking agent.

4. Write down the biosynthetic pathway of Norepinephrine and epinephrine from *L*-tyrosine.

5. What are the structural requirements of H_2-receptor antagonist ?

6. a) Define and classify cholinergic agents with suitable example. 3

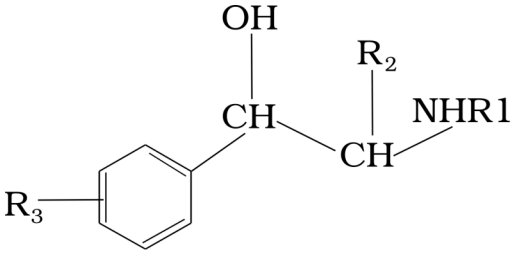
   b) Why is Acetyl choline a poor therapeutic agent. 2

GROUP – C

(Long Answer Type Questions)

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

7. a) Identify the following structure : 1



   b) What is the effect of R1 substitution on the amino nitrogen ? 4

   c) Give one method of synthesis of isoproterenol. 5

   d) Give one name each of the following : 5

   α_1, α_2, β_1 and β_2 adrenergic antagonists and non-selective β antagonist.

8. a) Define and classify non-steroidal anti-inflammatory agents. 1 + 4

   b) Write short notes on selective COX-2 inhibitor. 3

   c) What are the DMARD ? 3

   d) Give one method of synthesis of

      i) Mechlofenamate

      ii) Phenacetin. 2 × 2

9. a) What do you mean by receptor ? 1

   b) Write the theories behind D-R interactions. 4

   c) Differentiate between Geometrical & Optical isomerisms and describe with example, how the biological activities of different isosters differ. 8

   d) Define bioisosters. 2

10. a) Classify anti-histamine with suitable example. 4

    b) Write the MOA of anti-histamine. 2

    c) Write the synthesis on the following : 3 × 3

       i) Pyrilamine Maleate

       ii) Chlopheniramine

       iii) Cimetidine.

11. a) Write down the chemistry of prostaglandin. 5

    b) Define "Analgesic and Antipyretic" with examples. 4

    c) Write down the synthesis of the following : 2 × 3

       i) Ibuprofen

       ii) Indomethacin.