**MANIKGAD-I: APRIL/ MAY: 2014**

**SUBJECT: MEDICINAL BIOCHEMISTRY**

**Day:** Friday **Time:** 10.00 A.M TO 1.00 P.M

**Date:** 11-04-2014 **Max. Marks: 70**

N.B:

1) Q. No. 1 and 5 are **COMPULSORY.** Out of the remaining attempt any **TWO** questions from each Section.
2) Figures to the right indicate **FULL** marks.
3) Answers to both the section should be written in the **SEPARATE** answer book.

## SECTION-I

**Q.1 A)** Answer the following (**ANY FOUR**): **(08)**

**a)** What is gluconeogenesis?
**b)** What is fatty liver disease?
**c)** What is renal atherosclerosis?
**d)** Why DNA Polymerase-I is called proof reader?
**e)** What is conjugated bilirubin?

**B)** What is ELISA? Explain in detail. **(03)**

**Q.2** Which purine bases are present in DNA? Describe purine metabolism. **(12)**

**OR**

**Q.2** What are body fluids? Explain fluid balance and regulation of blood $P^H$. **(12)**

**Q.3 a)** What are the functions of kidney? Describe kidney function tests. **(07)**
**b)** What are lipoproteins? Explain their types. **(05)**

**Q.4** Write short note on (**ANY FOUR**): **(12)**

**a)** Allosteric Enzyme
**b)** Glycogen storage disease
**c)** Clinical Hyperglycemia
**d)** R I A
**e)** Renal acidosis

## SECTION-II

**Q.5 A)** Answer the following (**ANY FOUR**): **(08)**

**a)** What is gout?
**b)** What is oxidative phosphorylation?
**c)** What is point mutation?
**d)** What is chemical jaundice?
**e)** What is detoxication?

**B)** What are coenzymes? Give any two examples. **(03)**

**Q.6** How glucose is completely oxidized to $CO_2$ and $H_2O$? How blood glucose level is regulated? **(12)**

**OR**

**Q.6** State different conditions under which amino acids are subjected to catabolism. Give catabolism of glutamine, tryptophan and prolin. **(12)**

**Q.7 a)** What is enzyme inhibition? Describe different types of inhibitions. **(07)**
**b)** What are bile pigments? Give their metabolic origin. **(05)**

**Q.8** Write short note on (**ANY FOUR**): **(12)**

**a)** Regulation of blood calcium
**b)** DNA replication
**c)** Urea cycle
**d)** Pentose phosphate pathway
**e)** Propionate pathway

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**MANIKGAD - I : APRIL / MAY - 2014**
**SUBJECT : PHARMACEUTICS**

Day : Sunday
Date : 20-04-2014

Time : 10.00 A.M TO 1.00 P.M
Max. Marks : 70

**N. B. :**

1) **Q. No. 1** and **Q. No. 5** are **COMPULSORY**. Out of remaining solve **ANY TWO** from each section.
2) Both the sections should be written in the **SEPARATE** answer books.
3) Figures to the **RIGHT** indicate full marks
4) Draw neat and labelled diagram **WHEREVER** necessary.

## SECTION - I

**Q. 1** **A)** Answer **ANY FOUR** of the following: **(08)**

i) Give the labelling conditions for
   **a)** Mouth wash **b)** Nasal drops
ii) Give the importance of Refill instruction with example.
iii) Enlist the various additives used in the preparation of solutions.
iv) What is the proof strength of 80 % v/v and 45 % v/v ethanol?
v) If the Adult dose of ibuprofen 200 mg. bid. What should be the dose for child of 30 kg as per clark's formula?
vi) Differentiate between liniment and lotion.

**B)** Explain in brief formulation aspect of lotion. **(03)**

**Q. 2** Define posology. Explain the various factors considered while selection of dose. **(12)**

**Q. 3** **a)** Explain Handling of prescription for prefabricated and compounded dosage forms. **(07)**

**b)** Define and explain various types of powders with examples. **(05)**

**Q. 4** Write notes on **ANY THREE** of the following: **(12)**

**a)** Compounding and dispensing of syrup
**b)** Developmental charges in British pharmacopoeia
**c)** Parts of prescription
**d)** Effervescent Granules

**P. T. O.**

## SECTION - II

**Q. 5 A)** Answer **ANY FOUR** of the following: **(08)**

**i)** Define and classify the sutures and Ligatures.

**ii)** Define the following terms:

**a)** Improvisation of dosage forms **b)** Displacement value

**iii)** Enlist the ideal properties of Coca butter bases used in suppository.

**iv)** Give the advantages of suspensions.

**v)** Give the types of emulsify agents used.

**vi)** Give the labelling directions for

**a)** Calamine Lotion **b)** Menthol and Eucalyptus Inhation

**B)** Explain the types of suppository bases. **(03)**

**Q. 6** Define and classify the extraction. Explain the method of 'percolation extraction' in detail.

**Q. 7 a)** Explain in detail Instability of emulsion.

**b)** Explain in brief formulation aspects of suspensions with examples.

**Q. 8** Write notes on **ANY THREE** of the following: **(12)**

**a)** Therapeutic incomparability

**b)** Compounding method for coca buttes suppository

**c)** Identification test for emulsion

**d)** Sterilization and packaging of sutures and ligatures

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**MANIKGAD - I: APRIL/MAY- 2014**

**SUBJECT: PHARMACEUTICAL ORGANIC CHEMISTRY**

Day: Tuesday Time: 10.00 A.M. TO 1.00 P.M

Date: 15-04-2014 Max. Marks: 70

**N.B.:**

1) Q. No. **1** and Q. No. **5** are **COMPULSORY**.
2) From the remaining questions solve any **TWO** questions from Section-**I** and **TWO** questions from Section-**II**.
3) Answer Section -**I** and Section -**II** on **SEPARATE** answer books.
4) Figures to the right indicate **FULL** marks.

## SECTION - I

**Q.1** **a)** Answer **ANY FOUR** of the following: **(08)**

- **i)** Give difference between oxidation and reduction.
- **ii)** Write medicinal uses of urea.
- **iii)** Write any one reaction of cycloalkane.
- **iv)** Give any one reaction using Sn/Hcl as a reducing agent.
- **v)** Write reaction of Nitration.

**b)** Explain Angle strain theory of cycloalkane. **(03)**

**Q.2** Write preparation, test for purity, assay and medicinal uses of Dimercaprol and lactic acid. **(12)**

**Q.3** **a)** Write any three methods of preparation of cycloalkanes. **(07)**

**b)** Write on Nucleophillic acyl substitution. **(05)**

**Q.4** Write notes on **ANY THREE** of the following: **(12)**

- **a)** Sandmeyers reaction
- **b)** Reimer tieman's reaction
- **c)** Williamson synthesis
- **d)** Fries rearrangement

## SECTION - II

**Q.5** **a)** Solve **ANY FOUR** of the following: **(08)**

- **i)** Define and classify isomerism.
- **ii)** Write structure and IUPAC name of any one aldehyde.
- **iii)** Define saytzeff and Hoffmann rule.
- **iv)** Write structure and IUPAC name of any one ester.
- **v)** Write structure for following compounds.
  1) 2, 3 dimethyl - 3- hexene
  2) Propanoic acid

**b)** Explain Lewis theory of acids and bases. **(03)**

**Q.6** Explain reaction mechanism and stereochemistry of $SN^2$ reaction with suitable eample. **(12)**

**Q.7** **a)** Explain mechanism, stereochemistry of $E_2$ reaction with suitable eample. **(07)**

**b)** Write on Nucleophillic aromatic substitution. **(05)**

**Q.8** Write notes on **ANY THREE** of the following: **(12)**

- **a)** Cannizzaro reaction
- **b)** Wittig reaction

**MANIKGAD - I:** April - May - 2014

**SUBJECT: HUMAN ANATOMY AND PHYSIOLOGY**

Day: Monday
Date: 07-04-2014

Time: 10.00 A.M. To 1.00 P.M.
Max. Marks: 70

**N.B.:**

1) **Q. No. 1** and **Q. No. 5** are **COMPULSORY**. Out of remaining, solve **ANY TWO** questions from each section.
2) Figures to the right indicate **FULL** marks.
3) Answers to both the sections should be written in the **SEPARATE** answer book.
4) Draw neat and labeled diagrams **WHEREVER** necessary.

## SECTION – I

**Q.1** **a)** Answer **ANY FOUR** of the following: **(08)**

- **i)** Classify the different types of tissues.
- **ii)** Explain the role of enzymes in digestion.
- **iii)** Give the significance of Rh factors in blood groups.
- **iv)** Draw a neat labelled diagram of digestive system.
- **v)** Give the composition of lymph.
- **vi)** Enumerate the functions of liver.

**b)** Explain the transport of materials across the plasma membrane. **(03)**

**Q.2** Draw a neat labeled diagram and explain the internal structure of heart and give the differences between arteries and veins. **(12)**

**Q.3** **a)** Explain in detail structure and functions of connective tissues. **(07)**
**b)** Explain the mechanism of respiration. **(05)**

**Q.4** Write short notes on **ANY THREE** of the following: **(12)**

- **a)** Cardiac arrythmias
- **b)** Structure and functions of spleen
- **c)** Heamopoesis
- **d)** Structure and functions of pancreas

## SECTION – II

**Q.5** **a)** Answer **ANY FOUR** of the following: **(08)**

- **i)** Give the physiological roles of oxytocin and prolactin hormones.
- **ii)** Give the anatomy of neuron.
- **iii)** Define the neurotransmitters and give the examples of various neurotrans mitters.
- **iv)** Explain the physiology of skin.
- **v)** Differentiate between sympathetic and parasympathetic nervous system.
- **vi)** Enlist hormones involved in menstruation cycle.

**b)** Explain the methods of contraception and various contraceptive devices used. **(03)**

**Q.6** Explain in details about male and female reproductive system. Write the process of spermatogenesis and oogenesis. **(12)**

**Q.7** **a)** Explain in details about respiration body heat, body fluids and salts in exercise. **(07)**
**b)** Write a note on structure, secretions and functions of stomach. **(05)**

**Q.8** Write short notes on **ANY THREE** of the following; **(12)**

- **a)** Drugs and Athletics
- **b)** Renal failure

MANIKGAD – I: JUNE- 2014 (Supplementary)
SUBJECT : HUMAN ANATOMY & PHYSIOLOGY

Day : Monday
Date : 30-06-2014

Time : 10:00AM TO 1:00 P.M.
Max. Marks : 70

**N.B.:**

1) **Q.No.1** and **Q.No.5** are **COMPULSORY**. Out of remaining questions attempt **ANY TWO** from each section.
2) Answers to both the sections should be written in the **SEPARATE** answer books.
3) Draw neat and labeled diagrams **WHEREVER** necessary.
4) Figures to the right indicate **FULL** marks.

## SECTION – I

**Q.1** **a)** Answer **ANY FOUR** of the following: **[08]**

i) Write the composition of blood.
ii) What are the general features of connective tissue?
iii) Enlist the clotting factors with their names.
iv) Draw a neat labeled diagram of liver.
v) Define the term Arteriosclerosis.
vi) What are the functions of Mitochondria?

**b)** Explain the flow of blood through the heart. **[03]**

**Q.2** Explain the mechanism of respiration. **[12]**

**Q.3** **a)** Explain the role of pancreas in digestion along with its anatomical features. **[07]**
**b)** Describe various blood groups and explain the role of Rh factor. **[05]**

**Q.4** Write short notes on **ANY THREE** of the following: **[12]**

a) Electrocardiogram
b) Composition of gastric juice
c) Anatomy of large intestine
d) Cardiac arrhythmias

## SECTION – II

**Q.5** **a)** Answer **ANY FOUR** of the following: **[08]**

i) Define Glomerular filtration rate.
ii) Write the functions of $T_3$ and $T_4$.
iii) Enlist the different parts of brain.
iv) Draw a neat labeled diagram of nephron.
v) Write the difference between neurotransmitter and hormone.
vi) Define the term Hypothyroidism.

**b)** Write a note on functions of Kidney. **[03]**

**Q.6** Describe the physiological role of growth hormone and discuss the hypothalamic control of pituitary gland. **[12]**

**Q.7** **a)** Discuss the role of mineralocorticoid in the maintenance of water balance. **[07]**
**b)** Explain the anatomy and physiology of skeletal muscle. **[05]**

**Q.8** Write short notes on **ANY THREE** of the following: **[12]**

a) Female sex hormones

MANIKGAD I: JUNE-2014 (Supplementary)
SUBJECT: PHARMACEUTICS-I

Day: Tuesday
Date: 01.07.2014

Time: 10:00AM TO 1:00 P.M.
Max.Marks:70

**N.B.**

1) Question 1 and 5 are **COMPULSORY**
2) Out of remaining answer any **TWO** questions from each section
3) Answers to the sections should be written in **SEPARATE** answer book.
4) Draw well labeled diagrams **WHEREVER** required.

## SECTION-I

**Q.1** **a)** Answer any **FOUR** of the following **(08)**

**i)** Explain the importance of refill instruction with example.
**ii)** Write a note on Elixirs.
**iii)** Define the term 'Idiosyncracy' and hypersensitivity.
**iv)** What do you know about proof spirit?
**v)** Write the role of pictograms in case of proper medication.
**vi)** Enlist the various additives used in powders.

**b)** Define and write formulation aspects of throat paint. What sould be the patient counseling regarding this dosage form? **(03)**

**Q.2** Define the term posology. Explain in detail various factors affecting dose selection. **(12)**

**Q.3** **a)** What is PMR. Describe in detail. **(07)**
**b)** Explain the various methods of mixing in case of powders. **(05)**

**Q.4** Write note on any **THREE** of the following **(12)**

**a)** Developmental changes in Indian pharmacopoeia.
**b)** Formulation aspects of solutions.
**c)** Eutetic powders.
**d)** Handling of the prescription.

## SECTION-II

**Q.5** **a)** Answer any **FOUR** of the following **(08)**

**i)** Explain significance of displacement value in suppository preparation.
**ii)** How many grams of dextrose will be needed to make 250 ml 5% w/v of dextrose solution?
**iii)** What are emulsions? What are the types of emulsions?
**iv)** What are surgical dressings?
**v)** What are the advantages and disadvantages of suspension?
**vi)** Define galenicals.

**b)** In what proportion should 40% v/v and 90% v/v alcohol be mixed to make 500ml of 75% v/v alcohol? **(03)**

**Q.6** Define incompatibility. Classify incompatibilities. Explain in detail physical incompatibility and the methods to overcome the incompatibility. **(12)**

**Q.7** **a)** Define emulsion. Explain the instabilities in emulsions. **(07)**
**b)** Explain in detail absorbable gelatin sponge. **(05)**

**Q.8** Write note on any **THREE** of the following **(12)**

**a)** Catgut
**b)** Suppository bases
**c)** Identification tests of emulsions
**d)** Percolation processes

MANIKGAD – I: JUNE-2014 (Supplementary)

**SUBJECT: MEDICINAL BIOCHEMISTRY**

Day: Wednesday | Time: 10:00AM TO 1:00 P.M.

Date: 02-07-2014 | Max. Marks: 70

**N.B.;**

1) Q. No.**1** and Q. No.**5** are **COMPULSORY**. Solve **ANY TWO** questions from each section.
2) Answer to both the section should be written in **SEPARATE** answer book.
3) Draw well labelled diagrams **WHEREVER** required.

## SECTION – I

**Q.1** **a)** Answer **ANY FOUR** of the following: **(08)**

i) What is point mutation?
ii) What is renal acidosis?
iii) What is phenylketonuria?
iv) What is hyperglycemia?
v) What is oxidative deamination?

**b)** What is renal osteodystrophy? **(03)**

**Q.2** Answer **ANY THREE** of the following: **(12)**

**a)** What is transamination? Give catabolism of histidine.
**b)** Describe DNA polymerase action.
**c)** What is gout? Explain in detail.
**d)** State importance of primer selection in PCR.

**Q.3** **a)** State and explain pentose phosphate pathway. **(08)**

**b)** What are Liver function tests? **(04)**

**Q.4** Write short notes on **ANY THREE** of the following: **(12)**

**a)** Allosteric enzymes
**b)** Gluconeogenesis
**c)** Kidney function test
**d)** Biosynthesis of glycogen

## SECTION - II

**Q.5** **a)** Answer **ANY FOUR** of the following: **(08)**

i) What is transamination?
ii) What is antisera?
iii) What is facilitated diffusion?
iv) What is renal acidosis?
v) What is osteomalacia?

**b)** What is Jaundice? Give different types. **(03)**

**Q.6** **a)** What is transcription? Explain in detail. **(08)**

**b)** How blood calcium level is regulated? Explain in detail. **(04)**

**Q.7** Answer **ANY THREE** of the following: **(12)**

**a)** What is translation? Give properties of genetic code.
**b)** How will you estimateAcid & alkaline phosphotase?
**c)** Give biochemical role of vitamin $B_1$ and $B_6$.
**d)** What are glycoproteins?

**Q.8** Write short notes on **ANY THREE** of the following: **(12)**

**a)** PCR
**b)** Urea cycle

MANIKGAD - I: JUNE - 2014 (Supplementary)

**SUBJECT: PHARMACEUTICAL ORGANIC CHEMISTRY**

Day: Thursday
Date: 03-07-2014

Time: 10:00 AM TO 1:00 P.M.
Max. Marks: 70

**N.B.:**

1) Q. No. **1** and Q. No. **5** are **COMPULSORY**.
2) From the remaining questions solve any **TWO** questions from Section-**I** and **TWO** questions from Section-**II**.
3) Answer Section -**I** and Section -**II** on **SEPARATE** answer books.
4) Figures to the right indicate **FULL** marks.

## SECTION - I

**Q.1** **a)** Answer **ANY FOUR** of the following: **(08)**

i) Give difference between oxidation and reduction.
ii) Write example with Nomenclature of cycloalkanes.
iii) Write medicinal uses of Aspirin.
iv) Give any one reaction using $Seo_2$ as a oxidising agent.
v) Write reaction of sulphonation.

**b)** Explain Bayer Strain theory of cycloalkane. **(03)**

**Q.2** Write preparation, test for purity, assay and medicinal uses of urea and Glyceryl trinitrate. **(12)**

**Q.3** **a)** Write any three methods of preparation of cycloalkanes. **(07)**
**b)** Write mechanism of free radical chain reaction of alkane. **(05)**

**Q.4** Write notes on **ANY THREE** of the following: **(12)**

a) Sandmeyer's reaction
b) Fries rearrangement
c) Kolbe reaction
d) Reimer tieman's reaction

## SECTION - II

**Q.5** **a)** Solve **ANY FOUR** of the following: **(08)**

i) What are intermollecular forces of molecule?
ii) Write structure and IUPAC name of alcohol with any one example.
iii) What is mean by acids and bases according to lewis theory?
iv) Define saytzeff and Hoffmann's rule.
v) Write structure for following compound.
   1) 2, 3- dimethyl - 3- hexene
   2) Propanoic acid

**b)** Explain Structural Isomerism. **(03)**

**Q.6** Explain reaction, mechanism and stereochenistry of $SN^2$ reaction with suitable example. **(12)**

**Q.7** **a)** Write on electrophillic aromatic substitution. **(07)**
**b)** Explain mechanism of $E_1$ reaction with suitable eample. **(05)**

**Q.8** Write notes on **ANY THREE** of the following: **(12)**

**MANIKGAD - II: APRIL / MAY 2014**
**SUBJECT : PHARMACOLOGY - I**

Day : Sunday
Date : 27-04-2014

Time : 2.00 P.M. To 5.00 P.M
Max. Marks : 70

**N.B.:**

1) **Q.No.1** and **Q.No.5** are **COMPULSORY**. Out of remaining questions attempt **ANY TWO** questions from each section.
2) Answers to both the sections should be written in the **SEPARATE** answer books.
3) Figures to the right indicate **FULL** marks.

## SECTION - I

**Q.1** **A)** Attempt **ANY FOUR** of the following: **[08]**
- **a)** Enlist various routes of administration.
- **b)** Define Pharmacokinetics.
- **c)** Define mydriatics with example.
- **d)** Define bioavailability.
- **e)** Define sedatives with example.

**B)** Define and classify local anesthetics with example. **[03]**

**Q.2** Define and classify antianginal drugs. Explain the mechanism of action, pharmacology, adverse effects and uses of nitrates. **[12]**

**Q.3** **a)** Enlist the factors affecting drug action. Explain in detail the plasma protein binding. **[07]**

**b)** Explain pharmacokinetic drug interaction. **[05]**

**Q.4** Write short notes on **ANY THREE** of the following: **[12]**
- **a)** Acute Toxicity
- **b)** Digitalis toxicity
- **c)** Anticholinesterases
- **d)** Theophylline

## SECTION - II

**Q.5** **A)** Attempt **ANY FOUR** of the following: **[08]**
- **a)** Enlist the ADR of Cox-2 inhibitors.
- **b)** Define bronchodilators with example.
- **c)** Give the uses of H1 antihistaminics.
- **d)** Why halothane is combined with nitrous oxide?
- **e)** Give ADR of thiopentone sodium.

**B)** Classify antiepileptic drugs. **[03]**

**Q.6** Classify Sedatives and hypnotics. Explain the mechanism of action, pharmacology, adverse effects and uses of phenobarbitone. **[12]**

**Q.7** **a)** Classify antiasthmatics. Explain the role of mast cell stabilizers in asthma. **[07]**

**b)** Write in brief on insulin analogues. **[05]**

**Q.8** Write short notes on **ANY THREE** of the following: **[12]**
- **a)** Antithyroid drugs
- **b)** Aspirin