MANIKGAD - I : SUMMER - 2016
SUBJECT : BIOLOGY

Day : Wednesday
Date : 20-04-2016

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 the remaining, answer any **TWO** questions from each Section.
2) Answers to each section should be written in **SEPARATE** answer book.

SECTION - I

Q.1 **A)** Answer any **FOUR:** **(08)**
1) Write a note on fibrous or false root system.
2) Write a note on Cymose inflorescence
3) Sketch and label typical flower (diagramatic)
4) Write a note on Napiform root.
5) Write a note on Bulbil
6) Sketch and label typical leaf.

B) Describe Hypogynous flower. **(03)**

OR

Describe Perigynous flower.

Q.2 With the help of diagrams describe the family Solanaceae. **(12)**

OR

With the help of diagrams describe the family Liliaceae.

Q. 3 **A)** With the help of diagram explain characteristics of stem. **(07)**

OR

With the help of diagram explain characteristics of leaf.

B) Write a note on opuntia. **(05)**

Q. 4 Write short notes on any three **(12)**
a) Characters of class-monocotyledonae or Dicotyledonae.
b) Write a note on characters of Bryophyta.
c) Distinguish between Algae and Fungi.
d) Write a note on plasma membrane.

SECTION - II

Q.5 **A)** Answer any **FOUR** : **(08)**
1) Write a note on ciliated epithelium.
2) Write the functions of mitochondria.
3) Write any four characters of class Reptilia.
4) Write any two functions of pancreas of frog.
5) Write a note on nonstriated muscle.
6) Sketch and label Osteocyte.

B) Write the functions of Bone. **(03)**

Q.6 With the help of well labelled diagram describe male reproductive system of frog. **(12)**

Q.7 **A)** Write a note on Heart of frog. **(07)**

OR

Write a note on T.S. of stomach of frog.

B) Write any five functions of liver of frog. **(05)**

Q.8 Write short notes on any **THREE:** **(12)**

MANIKGAD – I: SUMMER - 2016

SUBJECT: PHARMACEUTICAL INORGANIC CHEMISTRY

Day: Saturday
Date: 16-04-2016

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 the remaining solve any **TWO** questions from section I and II each.
2) Both the sections should be written in the **SEPARATE** answer books.
3) Draw neat and well labeled diagrams **WHEREVER** necessary.

SECTION – I

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

i) What do you mean by expectorant? Classify them with examples.
ii) Write principle of ferrous sulphate assay.
iii) How will you standardize 0.1 N potassium dichromate solution
iv) Define the terms molarity and normality
v) What do you mean by radio – opaque contrast media?

b) What are antidotes? Write a note on cyanide poisoning. **(03)**

Q.2 Explain in detail limit test for arsenic and iron. **(12)**

Q.3 a) Describe various acid-base neutralization curves. **(07)**

b) What do you mean by error? Explain in detail types of errors. **(05)**

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

i) Iron as an essential trace element
ii) Iodometric and iodimetric titration.
iii) Electrolyte replacement therapy
iv) Respiratory stimulants.

SECTION – II

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

i) Give the ideal properties of antacids.
ii) What do you mean by salt effect?
iii) Explain the mechanism of action of anticaries agents.
iv) Give the properties, uses & storage condition of NO_2 gas.
v) Discuss any two aluminum containing antacids.

b) How will you prepare & standardize 0.05M disodium edetate solution **(03)**

Q.6 Discuss the principle & various methods of end point determination in precipitation titrations. Give the preparation & standardization NH_4SCN. **(12)**

Q.7 a) Give the pharmaceutical applications of gravimetric analysis. Explain Kjeldahl's method in detail. **(07)**

b) Discuss the solvents used in non aqueous titration. **(05)**

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

i) Acidifying agents

MANIKGAD – I : SUMMER - 2016
SUBJECT : REMEDIAL MATHEMATICS

Day : Wednesday
Date : 20-04-2016

Time : 10.00 A.M. To 1.00 P.M.
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) Answer to each section must be written in **SEPARATE** answer book.
3) Figures to the right indicates **FULL** marks.

SECTION – I

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

i) Find the perpendicular distance of the point (2,-3) from the line $3x-4y+7=0$.

ii) Find x, if

$$\begin{vmatrix} 6 & 1 & 2 \\ 0 & 1 & 0 \\ x & 1 & 1 \end{vmatrix} = 0$$

iii) If

$$A=\begin{bmatrix} 2 & 5 \\ 0 & 1 \end{bmatrix}, B=\begin{bmatrix} -1 & 4 \\ 2 & 3 \end{bmatrix}, C=\begin{bmatrix} 7 & 6 \\ 4 & 5 \end{bmatrix}$$ Find $4A-3B-C$.

iv) Find the centre and radius of the circle
$4x^2+4y^2-8x+36y+81=0$

v) Write down the equation of tangent to the parabola $y^2=12x$ at $P\left(\sqrt{2}\right)$.

vi) Show that the equations $x+3y-7=0$ $5x-4y+3=0$ $x+y-3=0$ are consistent.

b) Obtain the equation of circle in the centre radius form $(x-h)^2+(y-k)^2=r^2$. **(03)**

Q.2 Attempt any **THREE** of the following: **(12)**

i) Find the value of k if the following equations are consistent.
$2x+3y=4, kx-2y=7, 8x-5y=3$

ii) Find the values of x and y from the following matrix equation

$$\begin{bmatrix} 1 & 2 & 3 \\ -1 & 1 & 0 \end{bmatrix}\left\{\begin{bmatrix} 1 \\ 2 \\ 1 \end{bmatrix}+\begin{bmatrix} 4 \\ 0 \\ -1 \end{bmatrix}\right\}=\begin{bmatrix} x \\ y \end{bmatrix}$$

iii) Without expanding the determinant show that

$$\begin{vmatrix} a & a+b & a-b \\ b & b+c & b-c \\ c & c+a & c-a \end{vmatrix}=0$$

iv) If

$$A=\begin{bmatrix}1 & 1\\ 2 & 2\\ 3 & 3\end{bmatrix}$$, find the matrix A.A'.

Q.3 **a)** **i)** Find the acute angle between the following lines $3x-y+4=0,\ 2x+y-3=0$ **(03)**

ii) Find the perpendicular distance between the parallel lines $3x+4y-5=0$ and $3x+4y-10=0$ **(04)**

b) If the line $x+ky+2=0$ touches the parabola $y^2=8x$, find k. **(05)**

Q.4 Attempt any **THREE** of the following: **(12)**

i) Find the lengths of intercepts made on the co-ordinate axes by the circle $x^2+y^2+2x-2y-3=0$.

ii) Find the focus, length of latus rectum and equation of directix for the parabola $3y^2=16x$.

iii) Find the equation of the line passing through the point *(3, -2)* and perpendicular to $3x+7y+11=0$.

iv) Find the equation of circle with centre at *(3,1)* and touching the line *8x-15y + 25 = 0*

SECTION - II

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

i) Evaluate

$$\lim_{x\to 5}\frac{x^2-9x+20}{x^2-6x+15}.$$

ii) Find $f'(x)$, if $f(x)=x^2$ from first principle.

iii) Find the Laplace transforms of the function e^{at}.

iv) Solve the differential equation $\frac{dy}{dx}=\frac{y}{x}$

v) Determine the order and degree of the differential equation

$$\left(\frac{d^2y}{dx^2}\right)^2+\left(\frac{dy}{dx}\right)^3=e^x.$$

vi) Prove that

$$\int_z^b f(x)dx=\int_a^b f(t)dt$$

b) If $y=x^{\sin x}$, then find $\frac{dy}{dx}$. **(03)**

P.T.O.

Q.6 Attempt the following:

i) Evaluate **(04)**

$$\int_0^{\frac{\pi}{2}} \frac{\sqrt{\sin x}}{\sqrt{\sin x} + \sqrt{\cos x}} dx$$

ii) Show that **(04)**

$$\int_0^a f(x)dx = \int_0^a f(a-x)dx$$

iii) Solve the differential equation **(04)**

$\frac{dy}{dx} = \cos(x+y)$, using substitution $x+y=u$.

Q.7 Attempt the following:

a)

i) If $u = Sin^{-1}\left(\frac{x}{y}\right)$, then verify that $\frac{\partial^2 u}{\partial x \partial y} = \frac{\partial^2 u}{\partial y \partial x}$ **(03)**

ii) If $z = tan^{-1}(y/x)$, then verify that **(04)**

$$\frac{\partial^2 z}{\partial x^2} + \frac{\partial^2 z}{\partial y^2} = 0$$

b) If $u = 3\ (lx+my+nz)^2-(x^2+y^2+z^2)$ and $l^2+m^2+n^2=1$. Then show that **(05)**

$$\frac{\partial u}{\partial x^2} + \frac{\partial^2 u}{\partial y^2} + \frac{\partial^2 u}{\partial z^2} = 0.$$

Q.8 Attempt any **THREE** of the following: **(12)**

i) If $u = \frac{1}{\sqrt{x^2+y^2+z^2}}$ where $x^2+y^2+z^2 \neq 0$, then show that

$$\frac{\partial^2 u}{\partial x^2} + \frac{\partial^2 u}{\partial y^2} + \frac{\partial^2 u}{\partial z^2} = 0$$

ii) If $u = \cot^{-1}\left(\frac{x+y}{\sqrt{x}+\sqrt{y}}\right)$, then show that

$$x\frac{\partial u}{\partial x} + y\frac{\partial u}{\partial y} + \frac{1}{4} Sin2u = 0$$

iii) If $u = \log\left\{\frac{x^4+y^4}{x+y}\right\}$ show by Euler's theorem that

$$x\frac{\partial u}{\partial x} + y\frac{\partial u}{\partial y} = 3.$$

iv) If $u = \tan^{-1}\left(\frac{x+y}{\sqrt{x}+\sqrt{y}}\right)$ show that $x\frac{\partial u}{\partial x} + y\frac{\partial u}{\partial y} = \frac{1}{4}\sin 2u$.

* * *

MANIKGAD – I : SUMMER - 2016

SUBJECT : PHARMACEUTICAL ORGANIC CHEMISTRY

Day : Tuesday — Time : 10·00 A·M· To 1·00 P.M.

Date : 12-04-2016 — Max. Marks : 70

N. B. :

1) **Q. No. 1** and **Q. No. 5** are **COMPULSORY.** Out of the remaining question solve any **TWO** from each Section.
2) Both the sections should be written in **SEPARATE** answer books.
3) Figures to the right indicate **FULL** marks.

SECTION - I

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

- **i)** Define and explain Saytzeff rule.
- **ii)** Write structure and IUPAC name of any one carboxylic acid.
- **iii)** Explain optical activity of lactic acid.
- **iv)** Define and explain Markovnikov rule.
- **v)** Write the structure and IUPAC name of any one amide.

b) Explain the mechanism of peroxide in electrophillic addition reaction. **(03)**

Q. 2 Explain reaction mechanism and stereochemistry of E_1 reaction with suitable example. **(12)**

Q. 3 a) Explain the racemization of product in SN_1 reaction. **(07)**

b) Explain the bond angle in NH_3, 107^0 and H_2O, 104^0 insted of 109^0. **(05)**

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

- **a)** Hydrogen bonding
- **b)** Inductive effect
- **c)** Preparation of Cycloalkanes
- **d)** Geometric isomerism

SECTION - II

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

- **i)** Explain the term hyperconjugation with example.
- **ii)** Why Amines are basic in nature?
- **iii)** What is Friedel Craft's Alkylation?
- **iv)** Write difference between oxidation and reduction.
- **v)** Draw the structure of Tartaric acid and Vanillin.

b) Why Chloroacetic acid is stronger than acetic acid? **(03)**

Q. 6 Explain in detail nucleophilic substitution reactions with suitable examples. **(12)**

Q. 7 a) Explain reactivity and orientation for eletrophic substitution reactions in substituted benzene. **(07)**

b) Explain addition of free radicals to conjugated dienes. **(05)**

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

- **a)** Perkin condensation
- **b)** Hoffmann rearrangement

MANIKGAD – I: SUMMER - 2016

SUBJECT: PHARMACEUTICAL INORGANIC CHEMISTRY

Day: Saturday
Time: 10·00 A·M·To 1·00 P·M.

Date: 16-04·2016
Max Marks. 70

N.B.

1) Q. No. 1 and Q. no. 5 are **COMPULSORY**. Out of the remaining solve any **TWO** questions from section I and II each.
2) Both the sections should be written in the **SEPARATE** answer books.
3) Draw neat and well labeled diagrams **WHEREVER** necessary.

SECTION – I

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

- **i)** What do you mean by expectorant? Classify them with examples.
- **ii)** Write principle of ferrous sulphate assay.
- **iii)** How will you standardize 0.1 N potassium dichromate solution
- **iv)** Define the terms molarity and normality
- **v)** What do you mean by radio – opaque contrast media?

b) What are antidotes? Write a note on cyanide poisoning. **(03)**

Q.2 Explain in detail limit test for arsenic and iron. **(12)**

Q.3 a) Describe various acid-base neutralization curves. **(07)**

b) What do you mean by error? Explain in detail types of errors. **(05)**

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

- **i)** Iron as an essential trace element
- **ii)** Iodometric and iodimetric titration.
- **iii)** Electrolyte replacement therapy
- **iv)** Respiratory stimulants.

SECTION – II

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

- **i)** Give the ideal properties of antacids.
- **ii)** What do you mean by salt effect?
- **iii)** Explain the mechanism of action of anticaries agents.
- **iv)** Give the properties, uses & storage condition of NO_2 gas.
- **v)** Discuss any two aluminum containing antacids.

b) How will you prepare & standardize 0.05M disodium edetate solution **(03)**

Q.6 Discuss the principle & various methods of end point determination in precipitation titrations. Give the preparation & standardization NH_4SCN. **(12)**

Q.7 a) Give the pharmaceutical applications of gravimetric analysis. Explain Kjeldahl's method in detail. **(07)**

b) Discuss the solvents used in non aqueous titration. **(05)**

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

- **i)** Acidifying agents
- **ii)** Dental products
- **iii)** Magnesium containing antacids
- **iv)** Saline cathartics

MANIKGAD – I : SUMMER - 2016
SUBJECT : PHARMACEUTICS

Day : Wednesday
Date : 06·04·2016

Time : 10·00 A·M·To 1·00 P.M.
Max. Marks : 70

N.B.

1) Q.1 and Q.5 are **COMPULSORY.** Out of the remaining questions 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 **SEPARATE** answer book.

SECTION – I

Q.1 **a)** Answer any **FOUR** questions: **(08)**

- **i)** Define the terms compounding and dispensing.
- **ii)** Differentiate between mouthwash and gargles.
- **iii)** Write the labeling direction and patient counseling for **1)** Throat paint **2)** Liniment.
- **iv)** Enlist the advantages of granules over powder.
- **v)** Write the role and examples of antioxidants and preservatives in the solutions.
- **vi)** Give the importance of prescription refilling with examples.

b) What is the proof strength of 80% v/v and 60% v/v of ethanol? **(03)**

Q.2 Write in detail the formulation aspects of solution with example. **(12)**

Q.3 **a)** Define and explain in detail parts of prescription. **(07)**
b) Write briefly about fundamental operations in the compounding of powders. **(05)**

Q.4 Write short note on any **THREE:** **(12)**

- **a)** Factors affecting dose calculation
- **b)** Prescription errors
- **c)** Developmental changes in Indian Pharmacopoeia
- **d)** Enemas

SECTION – II

Q.5 **a)** Answer any **FOUR** questions: **(08)**

- **i)** Define the following terms: **1)** Infusions **2)** Tinctures
- **ii)** Explain the need of calibration of suppository mould.
- **iii)** Write the oil : water : gum ratios used in the prescription of emulsion.
- **iv)** Differentiate between flocculated and deflocculated types of suspension.
- **v)** Enlist the ideal properties of suppository bases.

b) Explain briefly reserved percolation. **(03)**

Q.6 Define incompatibility. Explain in detail about the therapeutic incompatibility. **(12)**

Q.7 **a)** Explain in detail about the factors responsible for effective extraction. **(07)**
b) Explain in detail about method for preparation of emulsion. **(05)**

Q.8 Write short note on any **THREE:** **(12)**

- **a)** Type of suppository bases
- **b)** Physical incompatibility
- **c)** Catgut
- **d)** Stability of emulsion

* * *

MANIKGAD-I: SUMMER - 2016

SUBJECT: MEDICINAL BIOCHEMISTRY

Day: Saturday | Time: 10.00 A.M. To 1.00 P.M.

Date: 09.04.2016 | Max Marks: 70

N.B:

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

SECTION-I

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

i) State role of enzyme phosphofructokinase in glycolysis.
ii) How ethanol in catabolised in human?
iii) How gatactose in made available for glycolysis?
iv) What are A- class proteins? Give examples.
v) State catabolism of glutamate in one step.

B) Describe the deficiency of glucose-6- phosphate dehydeogenase. **(03)**

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

a) State biochemical singnificance of pentose phosphate pathway.
b) Describe biosynthesis of fatty acids.
c) Describe urea biosynthesis? State its importance.
d) How poly unsaturated fatty acids are catabolized?

Q.3 **a)** Describe the structure of DNA and explain DNA repair. **(08)**

b) How blood calcium is regulated? **(04)**

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

a) Enzyme immobilization
b) Isoenzymes
c) Electron transport chain
d) Transamination

SECTION-II

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

i) What is mutation?
ii) What is facilitated diffusion?
iii) What is respiratory acidosis?
iv) What is oxidative phosphorylation?
v) What is antiserum?

B) What is competitive enzyme inhibition? **(03)**

Q.6 **A)** Describe different kinney function tests. **(08)**

B) State biochemical role of vitamin- C and vitamin-A **(04)**

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

a) What is translation? Explain in detail.
b) What is obstructive jaundice? Explain in detail.
c) What is DNA proof reading?
d) State energetics of palmitate oxidation to carbon dioxide and water.

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

a) ELISA
b) Blood pH regulation

SUPPLEMENTARY

MANIKGAD – I: SUMMER – 2016

SUBJECT : PHARMACEUTICAL ORGANIC CHEMISTRY

Day : Tuesday　　　　　　　　　　　　Time : 10:00 AM TO 1:00 P.M.

Date : 05-07-2016　　　　　　　　　　Max. Marks : 70

N.B.:

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

SECTION – I

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

- **i)** What is Lawry–Bronsted acid – base?
- **ii)** What are enantiomers?
- **iii)** What is protic and aprotic solvents?
- **iv)** What is polarity of bond?
- **v)** Draw structure, 1UPAC name for any two alcohols.

b) Give nomenclature of cycloalkane with example. **[03]**

Q.2 Explain the reaction, mechanism and stereochemistry for E_2 reaction. **[12]**

Q.3 a) Differentiate between SN_1 and SN_2 reaction. **[07]**

b) Write a note on: Stability of carbocation. **[05]**

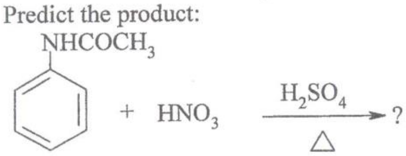
Q.4 Write short notes on **ANY THREE** of the following: **[12]**

- **a)** Factors affecting rate of E_1 reaction
- **b)** Conformation of cyclohexane and stability
- **c)** Polybromination
- **d)** Free radical stability

SECTION – II

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

- **i)** Explain resonance stabilization in allylic radicals.
- **ii)** How will you convert carboxylic acid to its corresponding ester? Give reaction.
- **iii)** Compare the acidity of given substituted carboxylic acids:
  a) Chloroacetic acid **b)** Dichloroacetic acid **c)** Trichloroacetic acid.
- **iv)** Give medicinal uses of: **a)** Saccharin sodium **b)** Vanillin.
- **v)** Predict the product:



b) Write short note on Diazotization reaction. **[03]**

Q.6 Explain mechanism and applications of any three chemical reactions of carbonyl compounds. **[12]**

Q.7 a) Explain mechanism of nitration and halogenation in benzene with respect to electrophilic substitution reaction. **[07]**

b) Halogens are o/p directors but deactivators in electrophilic substitution reaction. Explain. **[05]**

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

- **a)** Resonance stabilization of benzyl radical
- **b)** Claisen condensation

SUPPLEMENTARY

MANIKGAD –I : SUMMER-2016
SUBJECT : PHARMACEUTICAL INORGANIC CHEMISTRY

Day : Wednesday
Date : 06-07-2016

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

N. B. :

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

SECTION - I

Q.1 A) Solve **Any FOUR** of the following : **(08)**

i) How will you prepare and standardize 0.1 N potassium permanganate solution.
ii) Define the terms: Equivalent weight, Normality, Assay and Molarity.
iii) Explain in brief dissociation constant of weak base.
iv) Write the principle and chemical reaction involved in the limit test for sulphate.
v) Discuss the important functions of chloride and bicarbonate ions in the body.

B) State the use of Ammonia, citric acid, thioglycollic acid in the limit test for Iron. **(03)**

Q.2 a) What are expectorants? Explain in detail classification and mode of action of expectorants. **(12)**

b) Give the ideal properties of antimicrobial agent. Explain in detail mechanism of action of antimicrobial agents.

Q.3 Explain in detail electron balance method and oxidation number method for the calculation of equivalent weight. **(12)**

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

a) Antioxidant
b) Determinate and indeterminate errors
c) Theories of acid base indicators
d) Hyponatremia and Hyperrnatremia

P.T.O.

SECTION - II

Q.5 **A)** Solve **Any FOUR** of the following : **(08)**

i) Give classification of antacids with suitable examples.

ii) What is acidifying agent? Classify them with suitable example.

iii) Define the terms : buffers, protectives, binders and lubricants

iv) Give the preparation and standardization procedure of 0.05 M disodium EDTA.

v) Give the properties, uses and storage conditions of nitrous oxide gas.

B) Discuss in brief the leveling effect and differentiating effect. **(03)**

Q.6 **a)** What do you mean by antacids? Give mechanisms of action, properties and uses of aluminium containing antacids. **(07)**

b) What do you mean by dental products? Add a note on Dentifrices.

Q.7 Define precipitation titration. Explain the principle and various methods of end point determination in precipitation titrations. **(12)**

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

a) Masking and demasking agents

b) Saline cathartics

c) Filtration and filtering medias in gravimetric analysis

d) Types of EDTA titrations

* * * * *

SUPPLEMENTARY

MANIKGAD – I: SUMMER – 2016
SUBJECT : HUMAN ANATOMY & PHYSIOLOGY

Day : Friday
Date : 01-07-2016

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 the remaining attempt **ANY TWO** questions from each section.
2) Answers to both the sections should be written in **SEPARATE** answer books.
3) Figures to the right indicate **FULL** marks.

SECTION – I

Q.1 A) Answer **ANY FOUR** of the following: **[08]**
- **i)** Draw a neat labeled diagram of cell.
- **ii)** What are different types of anemia?
- **iii)** Write types of tissue. Give characteristics of each type.
- **iv)** Differentiate between arteries and veins.
- **v)** Define cardiac output.

B) Define blood pressure. Explain different functions of blood. **[03]**

Q.2 a) Describe various process involved in transport of material across the cell membrane. **[07]**
b) Explain the properties of muscular tissue. **[05]**

Q.3 a) Explain how intercostal muscles and diaphragm helps in the mechanism of respiration. **[07]**
b) Explain structure and functions of spleen. **[05]**

Q.4 Write short notes on **ANY THREE** of the following: **[12]**
- **a)** Blood group
- **b)** Endoplasmic reticulum
- **c)** Disorders of lymphatic system
- **d)** Cardiac cycle

SECTION – II

Q.5 A) Answer **ANY FOUR** of the following: **[08]**
- **i)** Write a short note on meninges of brain.
- **ii)** Draw a neat labeled diagram of structure of skin.
- **iii)** Explain the functions of hormones in menstrual cycle.
- **iv)** Give the functions of adrenal gland.
- **v)** Enumerate functions of liver.

B) Write the structure and functions of stomach. **[03]**

Q.6 a) Draw a neat labeled diagram of nephron and explain in details steps involved in urine formation. **[07]**
b) Explain the structure of eye with neat labeled diagram. **[05]**

Q.7 a) With a neat labeled diagram explain the anatomy and physiology and functional areas of cerebrum. **[07]**
b) Write a short note on hormones of posterior pituitary gland. **[05]**

Q.8 Write short notes on **ANY THREE** of the following: **[12]**
- **a)** Drugs and athletics

SUPPLEMENTARY

MANIKGAD – I: SUMMER – 2016
SUBJECT : PHARMACEUTICS

Day : Saturday
Date : 02-07-2016

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

N. B. :

1) **Q. No. 1** and **Q. No. 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 sections should be written in the **SEPARATE** answer books.
4) Draw neat and labeled diagram **WHEREVER** necessary.

SECTION - I

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

- **i)** Define the terms : Synergism and Tolerance.
- **ii)** Enlist the importance of PMR.
- **iii)** Write the labeling direction and patient counseling for mouthwash.
- **iv)** Differentiate between the liniment and lotion with example.
- **v)** What are the advantages of granules over the powder.

B) If the adult dose of paracetamol is 500mg, then what will be dose for child of 4 years age. **(03)**

Q. 2 Define and classify the term solutions. Explain the formulation aspects of solution in detail. **(12)**

Q. 3 a) Define and explain the parts of prescription with example. **(07)**

b) Write the unit operations followed in the preparation of powders. **(05)**

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

- **a)** Developmental changes in Indian Pharmacopoeia
- **b)** Factors affecting the dose selection
- **c)** Enemas
- **d)** Throat paint

P. T. O.

SUPPLEMENTARY

MANIKGAD–I: SUMMER - 2016
SUBJECT: MEDICINAL BIOCHEMISTRY

Day: Monday | Time 10:00AM-TO 1:00 P.M.
Date: 04-07-2016 | Max Marks: 70

N.B:

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

SECTION-I

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

- **a)** What is proteinuria?
- **b)** What is methyl malonate acidosis?
- **c)** What are essential amino acids? Give examples.
- **d)** Give structure of ATP.
- **e)** What is DNA proof reading?

B) What is gluconeogenesis? **(03)**

Q.2 What are PUFA? Give example and Explain biosynthesis of fatty acids in detail. **(12)**

Q.3 a) What is transamination? State catabolism of arginine and prolin. **(08)**
b) Explain biochemical role of vitamin-D. **(04)**

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

- **a)** Glycolysis
- **b)** Translation
- **c)** Mutation
- **d)** Kidney Function Test

SECTION-II

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

- **a)** What is passive diffusion?
- **b)** Define active site of an enzyme.
- **c)** What is gout?
- **d)** What is wobble hypothesis?
- **e)** What are co - enzymes?

B) What is translation? **(03)**

Q.6 What are enzymes? Give their classification according to IUB in detail. **(12)**

Q.7 a) What is β - oxidation? Explain in detail. **(07)**
b) What is electron transport chain? Explain its working. **(05)**

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

- **a)** Regulation of blood pH