Total No. of Questions : 3] **SEAT No. :**

P3666 **[Total No. of Pages : 4**

[6019]-111
F.Y.B. Pharmacy
BP101T : HUMAN ANATOMY AND PHYSIOLOGY - I
(2018 Pattern) (Semester - I)

Time : 3 Hours] ***[Max. Marks : 75***

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Neat labelled diagrams must be drawn wherever necessary.***
3) ***Figures to the right indicate full marks.***

Q1) Answer the following. **[20]**

a) The spherical structured organelle the contains the genetic material is

i) Cell wall ii) Ribosome

iii) Nucleus iv) Mitochondria

b) Protoplasm found inside the nucleus is known as

i) Amyloplast ii) Nucleoplasm

iii) Cytoplasm iv) Elaioplast

c) Cells in G_0 phase of cell cycle.

i) Exit cell cycle ii) Enter cell cycle

iii) Suspend cell cycle iv) Terminate cell cycle

d) Phagocytosis and pinocytosis are collectively termed as

i) Endocytosis ii) Suspension feeding

iii) Omnivores iv) Mucous trap

e) Oxygen (O_2) and food substances are provided to heart through

i) Pulmonary arch ii) aortic arch

iii) coronary arteries iv) subclavian artery

f) Blood from various parts of body is returned to the

i) right ventricle ii) right atrium

iii) left ventricle iv) left atrium

g) *In the ABO blood system, you normally can be type.*

i) A ii) B

iii) A,B, AB,or O iv) all of the above

P.T.O.

h) The universal blood donors for the ABO system are type.

i) A ii) B

iii) O iv) AB

i) Which of the following in the body is largest blood vessel

i) Aorta ii) Capillaries

iii) Pulmonary Vein iv) Heart

j) Lymph nodes are found in

i) Neck region ii) axilla

iii) groin iv) All of Above

k) Grater sciatic notch is located on the

i) Ilium ii) Ischium

iii) Femur iv) Pubis

l) Phagocytosis and pinocytosis are collectively termed as

i) Endocytosis ii) Suspension feeding

iii) Omnivores iv) Mucous trap

m) Which layer of hyaline cartilage reduces friction between bones involved in a joint?

i) Periosteum ii) distal epiphysis

iii) nutrient foramen iv) articular cartilage

n) The wrist is _____ to the fingers with respect to the elbow.

i) distal ii) inferior

iii) superior iv) proximal

o) Which of the following is NOT a connective tissue?

i) Bone ii) Blood

iii) Epidermis iv) Cartilage

p) Spongy bone tissue lacks

i) osteons ii) lacunae

iii) osteocytes iv) lamellae

q) The pubic symphysis and intervertebral discs are composed of which type of connective tissue?

i) Adipose tissue

ii) Elasitc cartilage

iii) Fibrocartilage

iv) Dense irregular connective tissue

r) Aging of the skin can result in.

i) increase in collagen and elastic fibers

ii) a decrease in the activity of sebaceous glands.

iii) a thickening of the skin.

iv) an increased blood flow to the skin

s) Which of the following tissues is avascular?

i) cardiac muscle ii) stratified squamous epithelial

iii) compact bone iv) skeletal muscle

t) The most common degenerative joint disease in the elderly, often caused by wear-and-tear, is

i) rheumatoid arthritis ii) osteoarthritis

iii) rheumatism iv) gouty arthritis

Q2) Attempt any two of the following. **[20]**

a) Draw the neat labelled diagram of interior of heart. Explain cardiac cycle.

b) Define and classify joints. Add note on any one type of joints

c) Classify nervous system. Describe in detail parasympathetic nervous system.

Q3) Attempt any seven of the following. **[35]**

a) Explain the structure and function of lymph node.

b) Describe the structure and function of mitochondria

c) Write the composition of blood

d) Discuss in short about heart valves.

e) Draw and explain the structure of cell membrane

f) Explain conduction system of heart

g) Discuss physiology of muscle contraction

h) Add note on nose.

i) Explain the method of blood pressure measurement.

Total No. of Questions : 3]

SEAT No. :

P3667

[Total No. of Pages : 2

[6019]-112
F.Y. B. Pharmacy
BP-102 T : PHARMACEUTICAL ANALYSIS - I
(2018 Pattern) (Semester - I) (Theory)

Time : 3 Hours] *[Max. Marks : 75*

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Figures to the right indicate full marks.***
3) ***Draw neat labelled diagrams wherever necessary.***

Q1) Answer following objective type questions. **[10×2=20]**

a) Write the applications of Precipitation titrations.

b) Define oxidation and reduction.

c) Give the significance of Nernst equation.

d) How to prepare sodium hydroxide solution?

e) Discuss the principle of Polarography.

f) Explain methods of minimizing errors.

g) Define Iodimetry and Iodometry.

h) Explain significant figures.

i) Discuss Normality and Mole fractions along with their formula.

j) Write the difference between accuracy and precision.

Q2) Answer ANY TWO questions out of the following. **[2×10=20]**

a) Discuss the principle and applications of Bromatometry and Dichrometry.

b) Discuss in detail the electrochemical cell. Explain the construction and working of Standard Hydrogen Electrode and Calomel Electrode.

c) Explain the neutralization curves of Strong Acid with Strong Base and Weak acid with Strong base.

P.T.O.

Q3) Answer ANY SEVEN questions out of the following. **[7×5=35]**

a) Write a note on Fajan's method.

b) Explain estimation of Ephedrine HCl.

c) Discuss Primary and Secondary standards.

d) Explain Co-precipitation and post precipitation.

e) Discuss theories of acid base indicators.

f) Explain estimation of sodium benzoate using Non aqueous titration.

g) Write Titrations with Potassium Iodate I.P.

h) Discuss different types of potentiometric titrations.

i) Explain masking and demasking reagents.

Total No. of Questions : 3]

SEAT No. : ____

P3669

[Total No. of Pages : 2

[6019]-114

First Year B. Pharmacy

BP - 104T : PHARMACEUTICAL INORGANIC CHEMISTRY

(2018 Pattern) (Semester - I)

Time : 3 Hours] ***[Max. Marks : 75***

Instructions to the candidates:

1) ***All Questions are compulsory.***
2) ***Figures to the right indicate full marks.***
3) ***Draw the figures whenever necessary.***

Q1) Answer all the questions: **[10×2=20]**

a) Define limit test. Enlist sources of impurities in pharmaceutical substances.

b) Give Buffer equations for acidic and basic buffers.

c) Give method of preparation and use of Ammonium chloride.

d) What are desensitizing agents? Give name of desensitizing agents.

e) Give ideal properties of antacids.

f) Enlist various cathartics and adsorbents.

g) Define astringents with examples.

h) Write in short about Antidote.

i) Define Radioactivity. Enlist methods of measuring Radioactivity.

j) Give major function of Sodium and chloride ion in the body.

Q2) Attempt any two out of three: **[2×10=20]**

a) Give various limit tests. Write Principle and reaction of Arsenic limit test. Give diagram, construction and working of Gutzeit apparatus.

b) Give the preparation, identification tests, assay and medicinal uses.

i) Hydrogen peroxide ii) Potassium Permanganate

c) Explain storage conditions, precautions and pharmaceutical applications of radioactive substances. Add a note on sodium iodide.

P.T.O.

Q3) Attempt any seven out of nine: **[7×5=35]**

a) Give modified limit test for Chloride and Sulphate.

b) Write a note on Indian Pharmacopoeia. Give significance of I.P. 2018.

c) What is Isotonicity? Give various methods of adjusting isotonicity.

d) Write in detail about Physiological acid-base balance.

e) Write a note on Expectorants and emetics.

f) Write in detail about Haematinics.

g) Give role of fluoride in the treatment of dental caries. Explain various dental products.

h) Explain electrolyte replacement therapy.

i) Give preparation and assay of sodium thiosulphate. Give mechanism of sodium thiosulphate in poison treatment.

Total No. of Questions : 3]

SEAT No. :

P-3670

[Total No. of Pages : 2

[6019]-211

First Year B. Pharmacy (Semester - II)

BP-201T : HUMAN ANATOMY AND PHYSIOLOGY - II

(2018 Pattern) (Credit System)

Time : 3 Hours] *[Max. Marks : 75*

Instructions to the candidates :

1) ***All questions are compulsory.***
2) ***Neat labelled diagram must be drawn wherever necessary.***
3) ***Figures to the right indicate full marks.***

Q1) Answer the following : **[20]**

a) Describe the process of neurotransmission.

b) Enlist and explain functions of hypothalamus.

c) Describe structure and functions of stomach.

d) Give composition and functions of intestinal juice.

e) What is emotional brain? Describe its constituents?

f) Draw neat labelled diagram of nephron.

g) Define acromegaly and diabetes mellitus.

h) Mention different methods of artificial respiration.

i) Enlist the cells of anterior pituitary gland with their role.

j) Discuss the functions of seminal vesicles.

Q2) Answer the following (Any 2) : **[20]**

a) Discuss chemical and mechanical digestion of food in small intestine. Add a note on disorders of GIT.

b) Explain structure and hormones of thyroid glands.

c) Discuss the structure and functions of kidney. Write detailed account on role of kidney in acid-base balance.

P.T.O.

Q3) Answer the following (Any 7) : **[35]**

a) Explain origin and functions of cranial nerves.

b) Write a short note on pancreatic is lets.

c) Explain anatomy and functions of brain stem.

d) Draw a neat labelled diagram of cross section of spinal cord. Add a note on reflex arc.

e) Describe structure and functions of major salivary glands.

f) Explain structure and hormones of adrenal cortex.

g) Explain the events of menstrual cycle.

h) Discuss in detail structure and functions of ovary.

i) Describe in detail the steps involved in protein synthesis.

Total No. of Questions : 3]

SEAT No. :

P-3671

[Total No. of Pages : 2

[6019]-212

First Year B. Pharmacy

BP-202T : PHARMACEUTICAL ORGANIC CHEMISTRY - I

(2018 Pattern) (Semester - II)

Time : 3 Hours] *[Max. Marks : 75*

Instructions to the candidates :

1) ***All questions are compulsory.***
2) ***Figures to the right indicate full marks.***

Q1) **Answer all the questions :** **[10 × 2 = 20]**

a) Write any 2 qualitative tests for carboxylic acid.

b) Define following terms :

i) Electrophile ii) Nucleophile

c) Classify structural isomerism with examples.

d) Write any two methods of preparation of alkanes.

e) Explain Electromeric effect.

f) Write Structure and uses of Ethanolamine, Ethylenediamine.

g) Draw structures from JUPAC names of following :

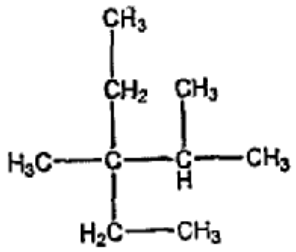
i) 2-Bromo-4-methylpentanal ii) 3-Methyl-2-butenoic acid

h) Write any 2 qualitative tests for aliphatic amines.

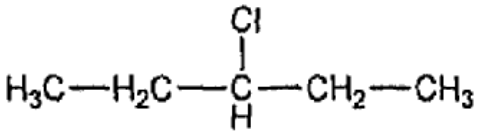
i) Aniline is less basic than methylamine. Give reason.

j) Give the IUPAC name of the following compounds

i)



ii)



P.T.O.

Q2) **Solve any two of the following :** **[2 × 10 = 20]**

a) What is SN1 and SN2 reaction? Write mechanism and discuss factors affecting on SN1 and SN2 reaction.

b) What are Elimination Reactions? Discuss the mechanism, Stereochemistry, kinetics and orientation involved in Elimination reaction.

c) Define and classify Hybridization. Explain the formation of Methane on the basis of hybridization.

Q3) **Solve any seven of the following :** **[7 × 5 = 35]**

a) Classify organic compounds on the basis of elemental composition

b) Write a note on Aldol condensation.

c) Explain electrophilic addition reactions of alkenes

d) Write any two methods of preparation and two reactions of alcohols.

e) Write note on inductive effect.

f) Explain Diel-Alder reaction.

g) Define Carboxylic acid. Explain the effect of substituents on acidity.

h) Write a note on Perkin condensation.

i) Explain electrophilic addition reactions of alkenes.

Total No. of Questions : 3]

SEAT No. :

P-3672

[Total No. of Pages : 4

[6019]-213

First Year B.Pharmacy

BP203T: BIOCHEMISTRY

(2018 Pattern) (Semester - II)

Time : 3 Hours] ***[Max. Marks : 75***

Instructions to the candidates :

1) ***All questions are compulsory.***
2) ***Figures to the right side indicate full marks.***
3) ***Draw well labeled diagram wherever necessary.***

Q1) **Answer all the MCQ's (1 mark each) :** **[20]**

1) ETC is
   a) Elctron transport chemical
   b) Enzyme transport chemical
   c) Electron transport chain
   d) Enzyme transport chemical

2) Glycolysis is also called as
   a) Universal pathway
   b) EMP
   c) Embden- meyerhoffpanas pathway
   d) All of the above

3) Condensation of acetyl co-A with oxaloacetate occurs in
   a) Cytosol
   b) Mitochondria
   c) Both a & b
   d) none of these

4) Enzymes pyruvate carboxylase is involved in
   a) EMP Pathway
   b) Kreb cycle
   c) Glycogenesis
   d) Gluconeogenesis

P.T.O.

5) Which of the following is not involved in carbohydrate metabolism
   a) Glycolysis
   b) Glycogen Metabolism
   c) Uronic acid pathway
   d) Urea cycle

6) Lipids are
   a) Insoluble in water and organic solvents
   b) Soluble in water and organic solvents
   c) Insoluble in water and soluble in organic solvents
   d) Soluble in water and insoluble in organic solvents

7) Which of the following is responsible for ketogenesis
   a) Glycogen
   b) Insulin
   c) Both a & b
   d) None.

8) Fatty acids synthase complex enzyme is involved in
   a) Fatty acid biosynthesis
   b) Cholesterol biosynthesis
   c) Beta oxidation
   d) Ketogenesis

9) Increase is plasma cholesterol more than 200 ug/dl results in
   a) Hyperlipdemia
   b) Hypolipemia
   c) Hypercholesterolemia
   d) Hypocholesterolemia

10) Which of the following statement is true?
   a) Transaminase reaction doesnot required pyridoxal phosphate
   b) Transaminase reaction is reversible
   c) Transfer of amino group to protein
   d) Only one enzyme is responsible for all transaminase reactions

11) Carbamoyl phosphate synthase–I [CPS-I]enzyme is
   a) Cytosomal enzyme
   b) Mitochondrial enzyme
   c) Present in both
   d) Absent in humans

12) Blood urea level is monitored in evaluation of
   a) Kidney
   b) Lungs
   c) Throat
   d) Liver

13) Precursor for biosynthesis of catecholamine
   a) Tryptophan
   b) Proline
   c) Tyrosine
   d) Hydroxyproline

14) Alkaptunuria is also called as
   a) Tyrosinemia type II
   b) Black urine disease
   c) Tyrosinemia type I
   d) Allof the above

15) Gout is
   a) Over production of urea
   b) Over production of uric acid
   c) Low production of urea
   d) Low production of uric acid

16) Proof reading activity in DNA replication is done by
   a) DNA polymerase I
   b) DNA polymerase II
   c) DNA polymerase III
   d) All of the above

17) Transcription is
   a) DNA to DNA
   b) DNA to RNA
   c) RNA to protein
   d) RNA to DNA

18) Disulfiram drug used in treatment of alcoholism is
   a) Reversible inhibition
   b) Irreversible inhibition
   c) Allosteric inhibition
   d) Allosteric feedback

19) Mechanism of enzyme action is given by
   a) Fischer's lock and key model
   b) Koshland' s induced tit theory
   c) Substrate strain theory
   d) All of the above

20) Zwitter ion is
   a) Hybrid molecule containing positive ion
   b) Hybrid molecule containing positive ion
   c) Hybrid molecule containing both
   d) Hybrid Neutral molecule

Q2) **Long answer (Any 2 out of 3) :** **[20]**

a) Explain Krebs cycle in detail. Add a note on its energetic and amphibolic nature of cycle.

b) Discuss different factors affecting enzyme activity? Explain Michaelis Menton's equation in detail.

c) Explain transcription in detail. Add a note on its inhibitors.

Q3) **Short answers (Any 7 out of 9) :** **[35]**

a) Explain in detail enzyme inhibition

b) Define and classify lipids. Explain beta oxidation of palmitic acid

c) Write a note on Ketogenesis and Ketoacidosis

d) Explain in detail ETC.

e) Write a note on DNA replication.

f) Explain HMP shunt and give its significance.

g) Explain urea cycle in detail.

h) Give biological significance of ATP and cyclic AMP.

i) Explain catabolism of Tyrosine.

Total No. of Questions : 3]

SEAT No. : ____

P-3673

[Total No. of Pages : 2

[6019]-214

F.Y. B. Pharmacy

BP204T : PATHOPHYSIOLOGY

(2018 Pattern) (Semester -II)

Time : 3 Hours] ***[Max. Marks : 75***

Instructions to the candidates :

1) ***All questions are compulsory.***
2) ***Draw neat and well labeled diagram wherever necessary.***
3) ***Figures to the right indicate full marks.***

Q1) Answer all the questions.(Objectives) (Two marks each) **[10×2=20]**

a) Define hypertrophy and atrophy.

b) Compare hypothyroidism and hyperthyroidism

c) Define and enlist the types of epilepsy.

d) Explain the clinical complication of hypertension.

e) Enlist the common causes of schizophrenia.

f) Define benign and malignant tumor.

g) Explain the causes of stroke.

h) Enlist the sign and symptoms of leprosy.

i) Describe the mediators of inflammation.

j) Define anaemia. Enlist the types of anaemia.

Q2) Long Answers (Any 2 out of 3): **[2 × 10 = 20]**

a) Define cancer. Explain in detail pathophysiology of cancer.

b) Define diabetes mellitus. Explain causes, sign and symptoms of diabetes mellitus. Enlist the complication associated with it.

c) Define homeostasis. Explain its components and type of feedback system with example.

P.T.O.

Q3) Short answers (Any 7 out of 9) : **[7×5=35]**

a) Explain pathophysiology of hypertension

b) Explain causes of cellular injury

c) Explain sign, symptoms etiology and pathogenesis of jaundice.

d) Define meningitis. Explain pathophysiology meningitis

e) Explain in detail pathophysiology of Rheumatoid arthritis.

f) Enlist the type of sexually transmitted disease. Describe pathogenesis of Syphilis.

g) Define Parkinsonism. Explain causes, sign and symptoms of parkinsonism

h) Define goiter. Explain causes, sign and symptoms of goiter.

i) Define asthma. Explain causes, sign and symptoms of asthma.

Total No. of Questions : 3]

SEAT No. :

P-834

[Total No. of Pages : 2

[6019]-311

S.Y. B. Pharmacy

PHARMACEUTICAL ORGANIC CHEMISTRY - II

(2018 Pattern) (Semester - III) (Theory) (BP301T)

Time : 3 Hours] *[Max. Marks : 75*

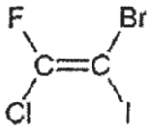
Instructions to the candidates:

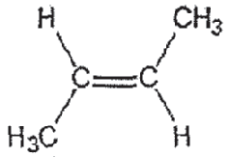
1) ***All questions are compulsory.***
2) ***Figures to the right indicate full marks.***

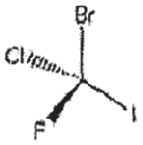
Q1) **Attempt the following (Any Five) :** **[5 × 3 = 15]**

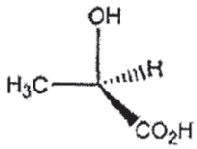
a) Explain Syn & Anti system with suitable examples.

b) Assign Configuration for the following (Any three)

I) 

II) 

III) 

IV) 

c) Discuss meso compounds with suitable examples.

d) Draw resonance structures for Nitrobenzene.

e) Explain any two qualitative tests for phenols.

f) Explain 4n+2 rule of aromaticity with example

g) Compare basicity of Methyl amine and aniline.

P.T.O.

Q2) **Attempt the following (Any Two) :** **[2 × 10 = 20]**

a) What are electrophilic aromatic substitution reactions. Explain Nitration and halogenation of benzene with stepwise mechanism.

b) Discuss structure, reactions, synthesis and medicinal uses of following polycyclic conipounds:

i) Phenanthrene

ii) Anthracene

c) What are amines. Classify with example. Write any three reactions and three methods of preparations of amines.

d) What is optical activity? Explain Enantiomerism and Diastereomerism with suitable examples.

Q3) **Attempt the following (Any Eight)** **[8 × 5 = 40]**

a) Write uses of resorcinol and naphthols and draw structure of any two derivatives.

b) Explain in brief Sachse Mohr's theory.

c) Write mechanism of Friedel-Craft's acylation reaction.

d) $-NH_2$ group is ortho para directing towards electrophilic substitution reaction Explain.

e) Explain any two methods for the synthesis of triphenylmethane.

f) How will you distinguish primary, secondary and tertiary amines by chemical test.

g) What are cycloalkanes? Give any three reactions of cyclobutane.

h) Discuss in detail Bayer's strain theory.

i) Discuss Geometrical isomerism with suitable examples.

j) Explain Nitrosation reaction.

Total No. of Questions : 3]

SEAT No. : ____

P-835

[Total No. of Pages : 2

[6019]-312

S.Y. B.Pharmacy

BP302T: PHYSICAL PHARMACEUTICS - I

(2018 Pattern) (Semester - III)

Time : 3 Hours] ***[Max. Marks : 75***

Instructions to the candidates :

1) ***All questions are compulsory.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Figures to the right indicate full marks.***

Q1) Answer the question (Objective) (Any 5) : **[5 × 3 = 15]**

a) Write in short eutic mixture.

b) Application of amphiphiles in pharmacy.

c) Why pH measurement of solution is important in pharmacy?

d) Give the application of polymorphism in pharmacy.

e) Define Interfacial tension. Give the methods for determination of it.

f) Define Solubility. Explain term saturated and unsaturated solution.

g) What you know about buffer capacity.

Q2) Long answer questions (Any 2) : **[2 × 10 = 20]**

a) Define complexation. What are different methods for study of complex formation.

b) Factors affecting on solubility of solid in liquids.

c) Distribution law along with limitation and factor affecting on it.

d) Define Facial tension. Give different methods to determine the infacial tension.

P.T.O.

Q3) Short answer questions (Any 8) : **[8 × 5 = 40]**

a) Effect of protein-drug binding.

b) X ray diffraction for crystal analysis.

c) One component system.

d) HLB scale determination.

e) Solute solvent interaction.

f) Methods for toxicity adjustment.

g) Capillarity size method for surface tension.

h) Liquification of gases.

i) Aerosols preparation.

j) Surface active agents.

Total No. of Questions : 3]

SEAT No. : ____

P-836

[Total No. of Pages : 2

[6019]-313

S.Y. B.Pharmacy

BP303T: PHARMACEUTICAL MICROBIOLOGY

(2018 Pattern) (Semester - III)

Time : 3 Hours] ***[Max. Marks : 75***

Instructions to the candidates :

1) ***All questions are compulsory.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Figures to the right indicate full marks.***

Q1) Answer the following (any five) : **[5 × 3 = 15]**

a) Write the classification of bacteria depending on arrangement of flagella.

b) Write the principle of simple staining.

c) Differentiate between Bacteria and fungi.

d) Write ideal properties of disinfectants.

e) Enlist different sources of contamination in an aseptic area.

f) List different preservatives used in pharmaceutical formulations.

g) How viruses are different from typical living cell?

Q2) Answer the following (any two) : **[2 × 10 = 20]**

a) Define sterilization. Explain different methods of sterilization with suitable example.

b) Write in detail growth curve of bacteria and explain methods used for quantitative measurement of bacterial growth.

P.T.O.

c) What is microbiological assay? Discuss in details general methods used for microbial assay of antibiotics as per I.P.

d) What are different methods used for evaluation of disinfectants? Explain in detail phenol coefficient test.

Q3) Answer the following (any eight) : **[8 × 5 = 40]**

a) Explain in detail scanning electron microscopy.

b) Write in detail scope and importance of pharmaceutical microbiology.

c) Explain the different methods used for cultivation of human viruses.

d) Explain in detail the applications of cell culture in pharmaceutical industry and research.

e) Write identification of bacteria using Gram staining techniques.

f) Explain various nutritional requirement for culture media.

g) Write a note on microbiological assay of vitamin B_{12}.

h) Explain the different sterility indicators with examples.

i) Write in detail the different sources & types of microbial contamination of pharmaceutical products.

j) Explain general procedure for cell culture.

Total No. of Questions : 3]

SEAT No. :

P837

[Total No. of Pages : 2

[6019]-314
S.Y. B.Pharmacy
PHARMACEUTICAL ENGINEERING
(2018 Pattern) (Semester - III) (BP304T)

Time : 3 Hours] *[Max. Marks : 75*

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Figures to the right indicate full marks.***

Q1) Answer the following questions any five. **[15]**

a) With suitable examples explain filter media.

b) Name the principle on which following size reduction equipment work.

i) Hammer mill

ii) Ball mill

iii) Fluid - energy mill

iv) Edge runner mill

v) End runner mill

vi) Rotary cutter mill

c) Give factors influencing selection of materials for the construction of plant.

d) What are the advantage and disadvantages in using climbing film evaporator?

e) Differentiate between solid mixing and liquid mixing.

f) How will you prepare water for injection by distillation?

g) Draw neat and lebelled diagrams for ball mill along with modes of rolling balls in the ball mill operations.

P.T.O.

Q2) Attempt any two from the following questions. **[20]**

a) Define corrosion, What are its different types? With proper explanation discuss method to combat (prevent) it.

b) Define drying, Discuss the theory of drying with respect to rate relationship.

c) What is size reduction? Explain with suitable examples, factors, affecting size reduction. Add a note on Hammer mill.

d) Define filtration. List the factors influencing the rate of filtration, Explain the theories behind filltration process.

Q3) Attempt any eight of the following questions. **[40]**

a) Explain the principle and advantages of orifice meter.

b) Describe the principle, construction and working of fluid energy mill.

c) Explain the official standards of powder. Write a note on sieving.

d) Explain principle, construction, working & uses of multiple effect evaporators.

e) Write a note on steam distillation.

f) Explain construction and operational details of freeze dryer.

g) With the help of diagram explain principle, construction, working of double cone blender.

h) Explain principle, construction, working of rotary drum filter.

i) Explain Principle, construction, working of non - perforated basket centrifuge.

j) Write about Inorganic and organic non - metals as material of plant construction.

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Total No. of Questions : 3]

SEAT No. :

P838

[Total No. of Pages : 2

[6019]-411
S.Y. B. Pharmacy
BP-401T : PHARMACEUTICAL ORGANIC CHEMISTRY - III
(2018 Pattern) (Semester - IV)

Time : 3 Hours] *[Max. Marks : 75*

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Figures to the right indicate full marks.***
3) ***Draw well labeled diagrams wherever necessary.***

Q1) Answer the following questions (Solve 5 out of 7) **[15]**

a) Explain Buttersing effect in atropisomerism in biphenyls.

b) Draw Newmann and Sawhorse structures of different conformers of cyclohexane.

c) Explain difference between stereoselective and sterospecific reaction reactions.

d) Explain in brief chiral pool and chiral auxillary.

e) Discuss the reactivity and stability of pyridine.

f) Give any three reactions of furan.

g) Draw the structure and give the numbering of following heterocycles.

i) Benzimidazole

ii) Oxazole

iii) Benzthiazole

Q2) Answer the following questions (Solve 2 out of 4) **[20]**

a) Explain in detail mechanism and applications of Beckmann rearrangement.

b) Explain in detail mechanism and applications of Claisen Schmidt condensation.

c) Discuss chemistry, synthesis and reactions of Pyrrole.

d) Write chemistry, synthesis and reactions of Thiophene.

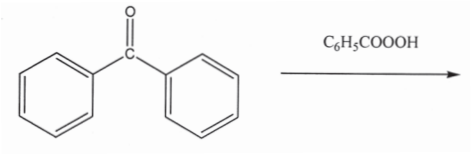
P.T.O.

Q3) Write short notes on: (Solve 8 out of 10) **[40]**

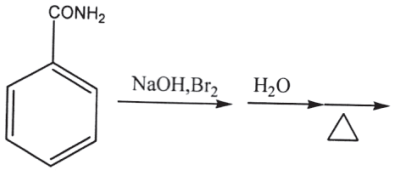
a) Explain any one important method of resolution of racemic mixture.

b) Explain mechanism of Benzilic acid rearrangement.

c) Complete the reaction with mechanism:



d) Complete the reaction with mechanism:



e) Give any one synthesis and reactions of Indole.

f) Describe one method of synthesis of Quinoline.

g) Write one synthetic method and two characteristic reactions of Isoquinoline.

h) Explain two chemical reactions and medicinal uses of pyrazole and Thiazole.

i) Discuss one method of synthesis and medicinal uses of purines.

j) Write the following reactions of pyridine

i) Nitration

ii) Sulphonation

iii) Reduction

Total No. of Questions : 3]

SEAT No. : ____

P839

[Total No. of Pages : 2

[6019]- 412
S. Y. B. Pharmacy
MEDICINAL CHEMISTRY - I
(2018 Pattern) (Semester - IV) (BP402T) (Theory)

Time : 3 Hours] ***[Max. Marks : 75***

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Figures to the right indicate full marks.***

Q1) Attempt the following. (Any five) **[5×3=15]**

a) Give SAR of Beta adrenergic blockers.

b) Write synthesis of Dicyclomine hydrochloride.

c) Explain the concept of Bioisosterism with suitable examples.

d) Classify General anesthetics with examples.

e) Write synthesis of Phenylephrine.

f) Explain drug metabolism by Conjugation reaction.

g) Describe effect of ionization on drug action.

Q2) Attempt the following. (Any two) **[2×10=20]**

a) What are sympathomimetics? Discuss the structural features important for such agents giving examples.

b) Elaborate on Biosynthesis, release and metabolism of Noradrenaline.

c) What are antipsychotic agents? Write classification of antipsychotic agents with examples. Write SAR of phenothiazines as antipsychotic agents.

d) What are narcotic analgesics? Write note on modifications of Morphine nucleus.

P.T.O.

Q3) Attempt the following. (Any eight) **[8×5=40]**

a) Give SAR of Cholinergic agonists.

b) Write a note on neuromuscular blocking agents.

c) Enumerate the structural features essential for directly acting sympathomimetic agents.

d) Write structure, IUPAC name and mechanism of action of Phentolamine.

e) Write a detailed note on AChE inhibitors.

f) Write SAR of Barbiturates as anticonvulscents.

g) Write a note on Narcotic antagonists.

h) Explain salicyclic acid derivatives and Anthranilic acid derivatives as nonsteroidal anti-inflammatory agents.

i) Write SAR of Benzodiazepins as sedative and hypnotic agents.

j) Explain stereochemical aspects of drug action with suitable examples.

Total No. of Questions : 3]

SEAT No. : ____

P-840

[Total No. of Pages : 2

[6019]-413

S.Y. B.Pharmacy

BP - 403T : PHYSICAL PHARMACEUTICS - II

(2018 Pattern) (Semester - IV)

Time : 3 Hours] ***[Max. Marks : 75***

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Figures to the right indicate full marks.***
3) ***Draw well labeled diagrams wherever necessary.***

Q1) Answer any five following (any 5 out of 7) : **[5 × 3 = 15]**

a) Give the significance of chemical kinetics in pharmaceutical product development.

b) Elaborate application of micromeritics.

c) What is the principle of Ostwald's viscometer?

d) Define Thixotropy. Describe thixotropy in formulations.

e) Explain the Anderson pipette method.

f) Differentiate between Hocculated and deflocculated suspmsions.

g) Write in short about the kinetic properties of colloids.

Q2) Answer the following (Any 2 out of 4) **[2 × 10 = 20]**

a) Enlist and explain methods for particle size analysis.

b) Enlist and explain different methods to determine viscosity.

c) What is the HLB scude? Explain the use of the HLB scale in the formulation.

d) Explain the effect of temperature on the rate of reaction.

P.T.O.

Q3) Write short note on the following (Any 8 out of 10) : **[8 × 5 = 40]**

a) Deformation of solids.

b) Plastic flow.

c) Optical properties A colloids.

d) Emulsion theory.

e) Stability of Pharmaceuticals.

f) Derived properties of powders.

g) Shear thinning and shear thickening system.

h) HLB.

i) Weight and Number distribution in powder.

j) Bingham bodies.

Total No. of Questions : 3]

SEAT No. :

P-841

[Total No. Of Pages : 2

[6019]-414
S.Y.B.Pharmacy
BP404T: PHARMACOLOGY - I
(Semester-IV) (2018 Pattern) (Credit System)

Time : 3 Hours] ***[Max. Marks : 75***

Instructions to the candidates :

1) ***All questions are compulsory***
2) ***Neat labelled diagram must be drawn wherever necessary***
3) ***Black figures to the right indicate full marks.***

Q1) **Objectives Type Questions (Answer 5 out of 7)** **[5 × 3 = 15]**

a) Explain enzyme inhibition with example.

b) Explain first pass metabolism.

c) Write about the pharmacovigilance.

d) What is Glaucoma? Write the Drugs used in Glaucoma.

e) Define & classify CNS stimulants.

f) Expalin oral route of drug administration.

g) Define local anesthetics & give uses of local anesthetics.

Q2) **Long Answers (Any 2 out of 4)** **[2 × 10 = 20]**

a) Classify NSAID & write pharmacological details of Aspirin.

b) Define parasympathomimetic drugs. Classify parasympathomimetic agents with suitable example. Explain the biosynthesis, storage, release and metabolism of acetylcholine.

c) Classify sedative Hypnotics. Write a note on Benzodiazepines.

d) Discuss structure and functions of plasma membrane. Add a note on transportation of drug across plasma membrane.

P. T. O

Q3) **Short Answer (Any 8 out of 10)** **[8 × 5 = 40]**

a) Write the pharmacological actions, adverse effects and therapeutic uses of Atropine.

b) Define drug interaction & explain Pharmacodynamic Drug interations.

c) Classify skeletal muscle relaxant. Describe the actions of non-depolarizing agents.

d) Classify benzodiazepines, Write the mechanism of action and uses of benzodiazepines.

e) Write on the transducer mechanism in G-Protein coupled receptors.

f) Narrate the pharmacological action of sympatholytics.

g) Define and classify antidepressants. Expalin the pharmacological action of Tricyclic antidepressant.

h) Pharmacology of anticholinesterases.

i) Discuss phases of clinical trial.

j) Organophosphate poisoning.

Total No. of Questions : 3]

SEAT No. :

P-842

[Total No. of Pages : 3

[6019]-415

Second Year B. Pharmacy

BP-405 T : Pharmacognosy and Phytochemistry - I

(2018 Pattern) (Semester - IV) (Theory)

Time : 3 Hours] *[Max. Marks : 75*

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Figures to the right indicate full marks.***

Q1) Answer the following (Attempt any 5 out of 7) : **[5 × 3 = 15]**

i) Attempt the following

a) Who first coined the name "Alkaloids"?

i) S.W. Pelletier

ii) Fredrich Sertürner

iii) Karl Fredrich Wilhelm Meissner

iv) Joseph Caventou

b) Flavonoids are naturally occurring compounds which are found in

i) only Flowers ii) most of the plants

iii) mature fruits iv) marine algae

c) The hydnocarpus oil is used to treat

i) Leprosy ii) Psoriasis

iii) Rheumatism iv) All of the above

ii) What are unorganized drugs? Write a note on dried latex.

iii) What is the difference between hybridization and polyploidy with reference to medicinal plants.

iv) What are stomata's? Classify in detail.

v) Give collection and preparation of Gum tragacanth along with its commercial utility.

P.T.O.

vi) What are leaf constants? Give its significance.

vii) Attempt the following.

a) Honey consist chiefly of about 70 to 80 percent of

i) mixture of galactose and sucrose

ii) mixture of galactose and glucose

iii) mixture of levulose and dextrose

iv) mixture of levulose and sucrose

b) Identify the false statement

i) Resins are complex mixture of substances

ii) Resins when boiled with alkalis yield soaps

iii) produced by cells which secrete viscous fluid

iv) Resins and gums are freely soluble in water

c) The Japanese agar is obtained from the decoction made from various algae namely,

i) Gelidium elegans Kutz.

ii) Gelidium cartilagineum

iii) Gracilaria confervoides

iv) Gelidium agarose

Q2) **Answer the following (Attempt any 2 out of 4) : [2 × 10 = 20]**

a) Define Pharmacognosy. Explain history of Pharmacognosy with scope and development.

b) Define and classify lipids according to therapeutic action. Explain in detail Oleum morrhuae.

c) Classify various types of tissue cultures. Explain historical genesis of plant tissue culture along with its applications of PTC in Pharmacognosy.

d) Explain in detail plant hormones and their applications. Explain factors affecting cultivation of medicinal plants.

Q3) **Answer the following (Attempt any 8 out of 10) :** **[8 × 5 = 40]**

a) Write a note on anticancer marine drugs.

b) Give chemical tests along with significance for the following.

i) Dragendorff's test

ii) Match stick test

iii) Shinoda test

iv) Borntrager's test

v) Fehling Test for Honey

c) Classify crude drugs according to various types of classification.

d) Explain quantitative microscopy of crude drugs with reference to lycopodium spore method.

e) Define resins. Classify with properties and identification tests.

f) Discuss in detail papain and bromelin as enzyme variants.

g) Explain in detail chemistry and therapeutic use of

i) Teratogens

ii) Pepsin

h) What are on edible vaccines and second generation edible vaccines. Give its advantages.

i) Discuss and classify in detail primary and secondary metabolites.

j) Define and classify natural allergens. 'Explain in detail.

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Total No. of Questions : 3]

SEAT No. : ____

P-843

[Total No. of Pages : 2

[6019]-511

T.Y. B. Pharmacy

BP-501 T : Medicinal Chemistry - II

(2018 Pattern) (Semester - V)

Time : 3 Hours] ***[Max. Marks : 75***

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Figures to the right indicate full marks.***

Q1) Attempt the following (any Five) : **[5 × 3 = 15]**

a) Write mechanism of action & medicinal applications of Diltiazem hydrochloride.

b) Write mechanism of action & medicinal applications of cetirizine.

c) Write mechanism of action & medicinal applications of cimetidine.

d) Write a note on progesterones.

e) Discuss thyroid & anti thyroid drugs.

f) Explain in brief cardiac glycosides.

g) Give the scheme of synthesis for cetirizine.

Q2) **Attempt the following (any two) :** **[2 × 10 = 20]**

a) What is hypertension? Classify antihypertensive agents with examples, write mechanism of action & medicinal applications of drug belonging to class Angiotensin converting enzyme inhibitors.

b) Classify oral hypoglycemic agents with structure from each class. Comment on sulphonylureas. Draw synthetic route for Tolbutamide.

c) Classify anti-arrhythmic agents with suitable examples. Explain chemistry & MoA of any one class.

d) Write biosynthesis of histamine. Classify antihistaminic agents with examples. Write SAR for H_1 Antagonists.

P.T.O.

Q3) **Attempt the following (Any eight) :** **[8 × 5 = 40]**

a) Write method of synthesis for promethazine & atenolol.

b) Write mechanism of action & medicinal applications of cyclothiazide & spironolactone.

c) Write mechanism of action & medicinal applications of drugs belonging to class osmotic diuretics.

d) Write a note on prostaglandins.

e) Write a note on proton pump inhibitors.

f) Classify estrogens with suitable examples.

g) Explain in brief oral contraceptives.

h) Classify local anaesthetics with suitable examples.

i) Classify antianginal agents with suitable examples.

j) Discuss in brief ACE inhibitors.

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Total No. of Questions : 3]

SEAT No. :

P-844

[Total No. of Pages : 2

[6019]-512

T.Y. B. Pharmacy

BP-502T : Industrial Pharmacy - I

(2018 Pattern) (Semester - V)

Time : 3 Hours] ***[Max. Marks : 75***

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Neat labeled diagrams must be drawn wherever necessary.***
3) ***Figures to the right indicate full marks.***

Q1) Answer the following (any 2) : **[20]**

a) Explain the mechanism of wet granulation and explain in detail high sheat granulator and fluidized bed granulator.

b) Discuss in detail formulation development of haid gelatin capsule, standards and defects thereof. Explain the volumetric and dosator principle in capsule filling.

c) Give advantages of parenterals. Discuss in detail official pharmacopoeial evaluation parameter of parenterals.

d) Give complete account of environmental control zones in sterile parenteral manufacturing facilities. Add note on HVAC system.

Q2) Answer the following (any 8) : **[40]**

a) Define biphasic dosage form. Explain stability consideration of biphasic dosage form.

b) What are type A and type B gelatin?

c) Explain different types of Aerosol system.

d) Write a note on quality control of aerosol system.

e) Explain formulation aspect of lipsticks.

P.T.O.

f) Write note on sunscreen and SPF.

g) Explain method of preparation of eye drops.

h) Add note on equipments for manufacture of pellets.

i) Give an account of various materials used in film coating of tablets.

j) What is HIB? Explain its application in formulation of biphasic liquid of its.

Q3) Write short note on (any 5) : **[15]**

a) Differentiate between cold cream and vanishing cream.

b) Enlist types of coating and explain the process of sugar coating.

c) Give advantages of direct compression. Explain directly compressible excipients with their trade names.

d) How particle diameter affects stability of suspension.

e) Enlist different tablets defects associated with compression stage and remedies to prevent

f) What is orange peel effect and haziness? Explain remedies to prevent these coating.

g) Write IPOC test for tablets.

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Total No. of Questions : 3]

SEAT No. :

P845

[Total No. of Pages : 2

[6019] - 513

T.Y.B Pharmacy

PHARMACOLOGY - II

(2018 Pattern) (Semester - V) (Theory) (BP 503T)

Time : 3 Hours] ***[Max. Marks : 75***

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Neat labelled diagrams must be drawn whenever necessary.***
3) ***Figures to the right indicate full marks.***

Q1) Attempt any five of the following. **[15]**

a) Define and classify tocolytics.

b) Classify anti-arrhythmic agents.

c) Define oxytocic agents and give mechanism and use of oxytocion.

d) Justify role of digitals in congestive heart failure.

e) Comment on role of beta blockers in angina pectoris.

f) Classify anticoagulant. Write mechanism of action of was forin.

g) Enlist the hormones secreted by Anterior pituitary.

Q2) Attempt any two of the following. **[20]**

a) Discuss biosynthesis, mechanism of action, phaemacological action and therapeutic uses of testosterone.

b) Classify diaretics. Explain mechanism of action, adverse effect and therapeutic uses of furosemide.

c) Classify antihypertensive drugs. Give pharmacological account of ACE inhibiton.

d) Define and types the bioassay. Add a note on bioassay of insulin.

P.T.O.

Q3) Attempt any eight of the following: **[40]**

a) Describe biosynthesis, storage, release & action of thyroid hormone?

b) Write a note on corticosteroids.

c) Add note on bioassay.

d) Explain pharmacological action of Aspirin.

e) Write the mechanism of action and user of quinidre.

f) Discuss the bioassay of hotamine.

g) Explain the clinical significance of cox-2 inhibiton.

h) What are the advantages of Angiotensin Receptors Blockers over ACE inhibitiors?

i) Write a note on calcium channel Blockers.

j) Discuss pharmacotherapy of Rheumatoid arthritis.

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Total No. of Questions : 3]

SEAT No. :

P-846

[Total No. of Pages : 2

[6019]-514

Third Year B. Pharmacy

PHARMACOGNOSY AND PHYTOCHEMISTRY - II

(2018 Pattern) (Semester - V) (BP504T)

Time : 3 Hours] *[Max. Marks : 75*

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Neat labelled diagrams must be drawn wherever necessary.***
3) ***Figures to the right indicate full marks.***

Q1) **Objective type questions (Answer 5 out of 7) :** **[5 × 3 = 15]**

a) Define radioisotopes and give their uses in biogenetic studies.

b) Name two unorganized drugs with their botanical source and uses.

c) Give the source and uses of eugenol containing crude drug.

d) Identification test for Aloes.

e) Write Source and uses of Podophyllotoxin.

f) Utilization of Vinca alkaloids.

g) Give the adulterants of Clove bud.

Q2) **Answer the following (Any 2 out of 4) :** **[2 × 10 = 20]**

a) Define Alkaloids. Explain Biological source, classification, chemistry and medicinal uses of Belladonna and Opium.

b) Explain Biological source, classification, chemistry and medicinal uses of Volatile oils.

c) Describe industrial production and estimation of Diosgenin and Sennoside.

d) What is Microwave assisted extraction; describe its process, applications, advantages and disadvantages.

P.T.O.

Q3) **Answer the following (Any 8 out of 10) :** **[8 × 5 = 40]**

a) Write a note on tracer technique and its significances.

b) Describe the microscopy of Clove with a neat labelled diagram.

c) Adulterants of Senna and Digitalis.

d) Write the isolation and identification of Quinine.

e) Describe the isolation and identification of Citral.

f) Write identification test and estimation of Digoxin.

g) Discuss the industrial production and estimation of forskolin.

h) Write isolation and analysis of Glycyrrhizin.

i) Differentiate between Pale Catechu and Black Catechu.

j) Give biosources, chemical constituents and uses of Coriander and Belladonna.

Total No. of Questions : 3]

SEAT No. :

P-847

[Total No. of Pages :2

[6019]-515
T.Y. B. Pharmacy
PHARMACEUTICAL JURISPRUDENCE
(2018 Pattern) (Semester - V) (BP505T)

Time : 3 Hours] ***[Max. Marks : 75***

Instructions to the candidates :

1) ***All questions are compulsory.***
2) ***Figures to the right indicate full marks.***

Q1) Answer all the questions (Two marks each) **[10 × 2 = 20]**

a) What is Trademark?

b) What are misbranded drugs?

c) What are schedule H and K?

d) What were the recommendations by Drug Enquiry Committee?

e) According to medical termination of pregnancy Act, 1971 what are offenses and penalties?

f) Write the functions of pharmacy council of India?

g) What is connabis and opium derivatives?

h) Write the composition of committee constituted by central government to control and supervise the experiments performed on animals?

i) According to Narcotic Drugs and Psychotropic Substances Act, 1985. What are the functions of Narcotic Commissioner?

j) What is the objective of Drugs and Magic Remedies Act, 1954?

P.T.O.

Q2) Long Answer (Any 2 out of 3) **[10 × 2 = 20]**

a) Discuss in detail schedule M.

b) Write in detail different administrative bodies under drugs and cosmetics Act 1940.

c) What are the objectives of drugs (price control) order, 1995 and explain in detail prices of bulk drugs and retail price of formulation.

Q3) Short Answer (Any 7 out of 9) **[7 × 5 = 35]**

a) Write qualifications, powers and duties of drug inspector.

b) Conditions for license for manufacturing of drugs other than Schedule X.

c) Labelling of medicines dispensed on prescription of registered medical practitioner.

d) Write in detail schedule N.

e) Write and explain the classification of medicinal and toilet preparation containing alcohol.

f) Code of pharmaceutical ethics in relation to medical profession and pharmacy profession.

g) Criteria for patentable inventions.

h) Write the qualification, duties & responsibilites of food inspector.

i) Write the circumstances under which the pregnancies may be terminated by registered medical practitioner.

Total No. of Questions : 3]

SEAT No. : ____

P-848

[Total No. of Pages : 2

[6019]-611

T.Y. B. Pharmacy

MEDICINAL CHEMISTRY - III (BP-601T) (Theory)

(2018 Pattern) (Semester - VI)

Time : 3 Hours] ***[Max. Marks : 75***

Instructions to the candidates :

1) ***All questions are compulsory. Internal choices are given.***
2) ***Figures to the right indicate full marks.***
3) ***Draw neat diagrams and structures wherever necessary.***

Q1) Objective type questions (answer 5 out of 7) : **[5 × 3 = 15]**

a) Define and classify beta lactam antibiotics with suitable examples.

b) Give structure and uses of any two aminoglycosides antibiotics.

c) Define and classify antimalarial agents with suitable examples.

d) Define and classify antitubercular agents with suitable examples.

e) Give structure and uses of any two drugs from class of DNA virus inhibitors.

f) What are biguanides? Draw structure of any one biguanide derivative.

g) Fill in the blanks :

i) Tuberculosis (TB) is an infectious disease usually caused by _____ bacteria.

ii) Antibacterials, aniline substituted suphonamides are called _____.

iii) _____ is a disease in which some of the body's cells grow uncontrollably and spread to other parts of the body.

P.T.O.

Q2) Long answer (answer 2 out of 4) : **[2 × 10 = 20]**

a) Discuss various physicochemical parameters used in QSAR and add a note on Hansch QSAR analysis.

b) Describe the chemistry, SAR and MOA of quinolines antimalarials.

c) Describe the chemistry, SAR and MOA of antimetabolite class of anticancer agents.

d) Describe the chemistry, SAR and MOA of tetracyclines class of antibiotics.

Q3) Short answer (answer 8 out of 10) : **[8 × 5 = 40]**

a) Discuss synthetic antitubercular agents.

b) Write a note on antileprotic agents.

c) Explain chemistry, MOA and uses of macrolide antibiotics.

d) Describe the SAR and MOA of antifungal azoles.

e) Explain MOA of sulphonamides.

f) Outline the scheme of synthesis for mebendazole.

g) Outline the scheme of synthesis for mercaptopurine.

h) Explain chemistry, MOA of plant products use as anticancer agents.

i) Write a note on anthelmintic drugs.

j) Write a note on antineoplastic alkylating agents.

Total No. of Questions : 3]

SEAT No. : ____

P849

[Total No. of Pages : 2

[6019]-612

T.Y.B. Pharmacy
PHARMACOLOGY-III
(2018 Pattern) (Semester-VI) (BP 602T)

Time : 3 Hours] ***[Max. Marks : 75***

Instructions to the candidates:

1) ***Answer all questions.***
2) ***Figure to the right indicate full makrs.***
3) ***Assume suitable data is necessory.***

Q1) Objective type questions (Answer 5 out of 7) each questions carries 3 marks. **[5×3=15]**

a) Classify drugs used in the treatment of peptic ulcer.

b) Write a brief note on non-systemic antacids.

c) Explain in short-pharmacotherapy of cough.

d) Write a note on antiemetics,

e) Explain-use of antibiotics as cyotoxic drugs in cancer therapy.

f) Classify antifungal drugs and write their clinical uses.

g) Write about the drugs used for treatment of urinary tract infection.

Q2) Long answer (any 2 out of 4) each question carries 10 marks. **[2×10=20]**

a) Describe in detail mode of action, spectrum of activity. therapeutic uses and adverse effect of sulphonamides.

b) What are clinical Manifestation of malaria? Discuss treatment options and non pharmacological approach for its prevention.

c) Classify cephalosporin. Write mechanics of action. adverse effect and uses of third generation cephalosporin.

d) Classify anti-emetic drugs. Write the mechanism of action adverse effect and uses of prokinetic agents.

P.T.O.

Q3) Short answer (Answer 8 out of 10 each question carries 5 marks,) **[8×5=40]**

a) classify antiasthmatic drugs. Give a detail note on use of bronchodilliators as anti asthmatic agent.

b) Give classification of antiviral drugs with mode of action of any two potential antiviral drugs.

c) Explain in brief general principles of poisoning. Give a detail note on barbiturate poisoning.

d) Write a note on treatment and management of urinary tract infection.

e) Give a detail note on circadian rhythm.

f) Write mechanism of action, Antimicrobial spectrum, Adverse effect and uses of tetracyclines.

g) Write a note on toxicities caused by amino glycoside antibiotics.

h) Classify anti-tussive. Add a note on anti-histaminics.

i) Explain mechanism of action, mechanism of resistance, adverse effects, interactions and uses of ciprofloxacin.

j) What is carcinogenicity. Give examples of drugs causing it.

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Total No. of Questions : 3]

SEAT No. : ____

P850

[Total No. of Pages : 2

[6019]-613

T.Y. B. Pharmacy

HERBAL DRUG TECHNOLOGY

(2018 Pattern) (Semester-VI) (BP603T)

Time : 3 Hours] ***[Max. Marks : 75***

Instructions to the candidates:

1) ***All the questions are compulsory.***
2) ***Neat labled diagrams must be drawn whenever necessary.***
3) ***Figures to the right indicate full marks.***

Q1) Objective type questions (Answer any 5 out of 7) **[5×3=15]**

a) Write a note on Siddha system of medicine.

b) Define the terms

i) Herbal medicine

ii) Trademark

iii) Neutraceutical

c) Explain in detail possible side effects and interaction of garlic.

d) Describe method of preparation for bhasma.

e) Define natural binders along with classification and advantages.

f) Add a note on plant based industries involved in work on medicinal and aromatic plants.

g) Comment on omega 3-fatty acid as a neutraceutical.

Q2) Answer the following (Any 2 out of 4) **[2×10=20]**

a) What is herbal excipients and write down about the significance of natural excipients with suitable examples.

b) Discuss the manufacturing process and evaluation parameters for herbal tablet.

c) What is Churna? Describe in detail method of preparation and general standardization parameter for churna as per Ayurvedic Pharmacopoeia.

d) Add a note on plant based industries involved in work on medicinal and aromatic plants.

P.T.O.

Q3) Answer the following (Any 8 out of 10) **[8×5=40]**

a) Describe basic principles, diagnosis and treatment involved in Ayurveda.

b) Write a role of Honey and Ginseng as health food

c) Discuss the manufacturing process and evaluation parameters for herbal syrup

d) Explain about the drugs used in skin care and hair care herbal cosmetics and its uses

e) Explain in detail regulatory issues-regulation in India (ASU DTAB, ASU DCC) provisions relating to Ayurvedic, Siddha and Unani system of medicine

f) Explain biodynamic agriculture

g) Explain method of preparation and standardization of Asava and Arishta

h) Write about natural colorants.

i) Explain in detail ICH guidelines for the assessment of herbal drug, stability testing of herbal drug

j) What are drug interactions? Explain about the herb drug interactions with example

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Total No. of Questions : 3]

SEAT No. :

P-851

[Total No. of Pages : 2

[6019]-614

T.Y.B. Pharmacy

BP604T : BIOPHARMACEUTICS AND PHARMACOKINETICS

(2018 Pattern) (Semester - VI)

Time : 3 Hours] *[Max. Marks : 75*

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Neat labelled diagrams must be drawn wherever necessary.***

Q1) **Answer the following (Any 5) :** **[15]**

a) Define and explain renal clearance.

b) What are different pathways of drug absorption?

c) What do you mean by the term dissolution?

d) What do you understand by the term 'open' in compartment modelling?

e) Define and explain IVIVC.

f) Define bioavailability. What are the objectives of bioavailability studies?

g) How are sink conditions maintained at the site of absorption?

Q2) **Answer the following (Any 2) :** **[20]**

a) Define gastric emptying. Write a note on the factors that influence gastric emptying.

b) Discuss the assumptions, limitations and significance of pH-partition hypothesis.

c) Write a detail note on kinetics of protein binding.

d) Explain biopharmaceutical classification system and its significance with respect to IVIVC.

P.T.O.

Q3) **Answer the following (Any 8)** **[40]**

a) Enlist and discuss the physiological barriers that affect the distribution of drug.

b) What are various non-renal routes of excretion of drugs.

c) Differentiate between active transport and a facilitated diffusion?

d) What do you mean by first - pass effect? Explain its effect in the absorption of drug.

e) What are the various sites of drug metabolism in the body?

f) What are the factors that influence passive reabsorption of drugs from the renal tubules?

g) Explain advantages of physiological model over compartmental model.

h) Explain statistical methods used in BA/BE studies.

i) Explain the significance of absorption window?

j) What is enzyme induction?

Total No. of Questions : 3]

SEAT No. : ____

P852

[Total No. of Pages : 2

[6019]-615

T.Y B.Pharmacy

PHARMACEUTICAL BIOTECHNOLOGY

(2018 Pattern) (Semester-VI) (BP605T)

Time : 3 Hours] ***[Max. Marks : 75***

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Figures to the right indicate full marks.***

Q1) Attempt 5 out of 7 **[5×3=15]**

a) Explain basic principle of genetic engineering.

b) What is biotechnology? Enlist applications of biotechnology with reference to pharmaceutical sciences.

c) Discuss production of enzymes.

d) Explain working of biosensors.

e) Give the examples of microorganisms used for production of amylase. penicillinase and lipase.

f) Discuss aeration process used in fermentation.

g) Describe the principle of southern blotting.

Q2) Answer 2 out of 4 **[2×10=20]**

a) What is cloning vector? Discuss ideal properties of cloning vectors and write a note on types of cloning vectors in detail.

b) What are hypersensitivity reactions? Classify hypersensitivity reactions and explain them in detail.

c) What is hybridoma technology? Discuss production of monoclonal antibodies by hybridoma technology and their applications.

d) What is fermentation? Highlight general requirements of fermentation and discuss production of penicillins by fermentation technology.

P.T.O.

Q3) Answer 8 out of 10 **[8×5=40]**

a) Explain methods of enzyme immobilization.

b) Write a note on polymerase chain reaction. (PCR)

c) Discuss production of recombinant insulin.

d) Write a note on ELISA.

e) Explain humoral and cellular immunity.

f) Illustrate microbial genetic transformation and conjugation.

g) Discuss design of large scale production fermenter.

h) Describe collection, processing and storage of whole human blood.

i) What is mutation? Summarize types of mutation.

j) Write a note on microbial biotransformation.

Total No. of Questions : 3]

SEAT No. :

P853

[Total No. of Pages : 2

[6019]-616

T.Y.B.Pharmacy

BP606T : PHARMACEUTICAL QUALITY ASSURANCE

(2018 Pattern) (Semester - VI)

Time : 3 Hours] *[Max. Marks : 75*

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Figures to the right indicate full marks.***

Q1) Attempt any five of the following. **[15]**

a) What is CDSCO responsible for?

b) What is PIC/s Guidelines? State its importance.

c) Write general format for SOP.

d) State importance of distribution record.

e) Explain PQ.

f) Define calibration. State the purpose of calibration.

g) Define QbD, enlist elements of QbD and give its applications.

Q2) Attempt any two of the following. **[20]**

a) Explain the definition, concept and philosophies of total quality management.

b) Discuss purchase specifications and maintenance of stores for raw materials.

c) Explain the major quality control tests for glass containers.

d) What is product recall? Explain handling of returned goods in pharmaceutical industry.

P.T.O.

Q3) Attempt any eight of the following. **[40]**

a) What is quality management? Explain the importance of GMP for quality management.

b) Explain in brief QSEM in ICH guidelines and its importance.

c) Explain the importance of ISO certification.

d) Explain the importance of personnel qualification and training in pharmaceutical industry.

e) Explain roles and functions of USFDA.

f) Explain the quality control tests for rubber closures.

g) What are Good laboratory practices? Explain role of CPCSEA.

h) Explain the difference between BFR and MFR. Explain the importance of these documents.

i) Which parameters are considered for analytical method validation? Explain accuracy and precision determination.

j) Discuss in brief good warehousing practices.

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Total No. of Questions : 3]

SEAT No. :

P-854

[Total No. of Pages : 2

[6019]-711

Final Year B. Pharmacy (Semester - VII)

INSTRUMENTAL METHODS OF ANALYSIS (BP-701T)

(2018 Pattern) (Theory)

Time : 3 Hours] *[Max. Marks : 75*

Instructions to the candidates :

1) ***All questions are compulsory.***
2) ***Neat diagram must be drawn wherever necessary.***

Q1) Attempt the following (Any 5) : **[5 × 3 = 15]**

a) Differentiate between fluorescence and phosphorescence phenomenon.

b) Explain the sample handling in IR spectroscopy.

c) Differentiate between normal phase and reverse phase chromatography.

d) Explain fingerprint region in IR spectroscopy.

e) Discuss the principle and application of affinity chromatography.

f) Differentiate between guard column and analytical column.

g) Write a note on system suitability parameters of HPLC.

Q2) Answer the following (Any 2) : **[2 × 10 = 20]**

a) Describe the principle, instrumentation and applications of gas chromatography.

b) Describe in detail theory, instrumentation and application of double beam UV-VIS spectrophotometer.

c) Explain the construction and working of flame emission spectrometry with neat labelled diagram and discuss the various types of interferences occured in atomic spectroscopy.

d) Draw a neat labelled diagram of atomic absorption spectroscopy. Explain the instrumentation and application of atomic absorption spectroscopy.

P.T.O.

Q3) Attempt the following (Any 8) : **[8 × 5 = 40]**

a) Draw the block diagram and explain the instrumentation of HPLC.

b) Explain the concept of Plate Theory and Rate Theory for increasing the efficiency of column in chromatography.

c) Discuss various types of transitions involved in uv-Visible spectroscopy.

d) Write a note on :

i) Temperature Programming in GC

ii) Applications of HPTLC

e) Discuss the various steps involved in HPTLC.

f) Write the principle, techniques and applications of ion exchange chromatography.

g) What is Quenching? Enumerate the various factors which influence quenching effect.

h) Mention the detectors used in HPLC and explain any two detectors in detail.

i) Discuss the principle of fluorescence with the help of Jablonski diagram.

j) Give a detail account on adsorption and partition chromatography.

Total No. of Questions : 3]

SEAT No. : ____

P855

[Total No. of Pages : 2

[6019]-712

Fourth Year B. Pharm.

INDUSTRIAL PHARMACY-II

(2018 Pattern) (Semester-VII) (BP 702T)

Time : 3 Hours] ***[Max. Marks : 75***

Instructions to the candidates:

1) ***Answer all questions.***
2) ***Figures to the right indicate full marks.***
3) ***Assume suitable data if necessary.***

Q1) Answer the following (Any 5) Each carry 3 marks. **[5×3=15]**

a) What is Platform technology?

b) What is qualification.

c) Explain role of JCH guidelines useful in technology transfer.

d) What are the elements of QbD?

e) Define clinical trial & Explain phase II trial

f) List out the significance of NABL accreditation.

g) Describe state licencing authority.

Q2) Answer the following (Any2) each carries 10 marks. **[2×10=20]**

a) Describe SUPAC guidelines for all levels of changes in batch size.

b) Describe various technology readiness levels.

c) Explain stages in development of new drug.

d) Explain concepts of total quality management & QbD

P.T.O.

Q3) Answer the following (Any 8) each carries 5 marks. **[8×5=40]**

a) Explain risk management in technology transfer.

b) Explain which post approval changes don't require permission?

c) Explain failure mode effect analysis.

d) Explain process validation.

e) What is confidentiality agreement.

f) What is platform technology?

g) Explain organisation and functions of CDSCO.

h) Explain concepts of six sigma for quality improvement.

i) Write short notes on phases of clinical trails.

j) Explain terminology QTPP & CPP with suitable example.

Total No. of Questions : 3]

SEAT No. :

P856

[Total No. of Pages : 2

[6019]-713

Fourth Year B. Pharmacy

PHARMACY PRACTICE

(2018 Pattern) (Semester-VII) (Theory) (BP703T)

Time : 3 Hours] ***[Max. Marks : 75***

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Draw neat and well labeled diagarm wherever necessary.***
3) ***Figures to the right side indicate full marks.***

Q1) Objective type questions (Answer any 5 out of 7) **[15]**

a) Enlist objectives of Drug Information centre.

b) Differentiate between hospital formulary and drug list.

c) Give organisation structure of hospital pharmacy.

d) Explain causes of medication non-adherance.

e) Explain floor ward stock system.

f) Discuss responsibilities and functions of hospital pharmacist

g) Define therapeutic drug monitoring (TDM). Explain need of TDM.

Q2) Long Answers (Answer any 2 out of 4) **[20]**

a) Define adverse drug reactions. Explain various ADR with examples.

b) Discuss about preparation and revision of hospital formulary.

c) Explain need and components of patient medication history interview.

d) Discuss role of pharmacist in medication adherance.

P.T.O.

Q3) Short answers (Answer any 8 out of 10) **[40]**

a) Explain functions and objectives of financial planning in community pharmacy.

b) Discuss pharmacokinetic drug interactions with examples.

c) Explain methods of labelling of drugs in hospital.

d) Clarify process of addition and deletion of drugs from hospital formulary.

e) Discuss factors to be considered during therapeutic drug monitoring (TDM).

f) Define community pharmacy. Explain different types of layout of community pharmacy.

g) Discuss policies of pharmacy and therapeutic committee (PTC) in including drugs into formulary.

h) Describe principles and procedures of purchasing.

i) Explain role of hospital pharmacists in investigational drug studies.

j) Discuss in brief significance of different clinical laboratory tests.

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Total No. of Questions : 3]

SEAT No. :

P-857

[Total No. of Pages : 2

[6019]-714

Final Year B. Pharmacy

NOVEL DRUG DELIVERY SYSTEM

(2018 Pattern) (Semester - VII) (BP704T)

Time : 3 Hours] *[Max. Marks : 75*

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Figures to right indicate full marks.***

Q1) **Answer the following (solve 5 out of 7) :** **[5 × 3 = 15]**

a) Explain ideal properties of bioadhesive polymer.

b) Write note on conservation methods of microencapsulation.

c) Write a short account on nebulizers.

d) Summarize the advantages and disadvantages of liposomes.

e) What factors affect the designing of modified drug delivery system.

f) What is targeted drug delivery? Give its applications?

g) Define and compare active and passive targeting.

Q2) **Answer in detail (Any 2 out of 4) :** **[2 × 10 = 20]**

a) Discuss in detail floating drug delivery system in GRDDS with its evaluation.

b) Explain the preparation and application of monoclonal antibodies.

c) Discuss formulation and evaluation of mucoadhesive drug delivery in detail.

d) Explain in detail formulation and evaluation of nanoparticles.

P.T.O.

Q3) **Answer the following in brief (Answer 8 out of 10)** **[8 × 5 = 40]**

a) Explain permeation enhancers with examples in TDDS.

b) What are advantages and disadvantages of implantable drug delivery system?

c) Describe the mechanism of osmotically controlled system for controlled drug delivery of drugs.

d) Explain the different barriers in occular drug delivery.

e) Write a note on biodegradable polymers.

f) Explain controlled and sustained drug delivery in detail.

g) Explain the evaluation parameters for transdermal patches.

h) Describe DSC and TGA studies of evaluation of polymers.

i) Explain in brief methods of preparation of niosomes.

j) Explain DDI and nebulizers.

Total No. of Questions : 3]

SEAT No. :

P858

[Total No. of Pages : 2

[6019]-811

Fourth Year (B. Pharmacy)

BP 801 T : BIOSTATISTICS AND RESEARCH METHODOLOGY

(2018 Pattern) (Semester - VIII)

Time : 3 Hours] *[Max. Marks : 75*

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Neat diagrams must be drawn wherver necessary.***
3) ***Figures to the right indicate full marks.***

Q1) Answer the following (Any Five). **[15]**

a) Enumerate the steps needed to condense raw data to grouped data.

b) Discuss in brief about Mean as a measure of central tendency.

c) Write a note on "Random Sampling".

d) Enlist steps in writing a research report.

e) Explain in brief about response surface plot.

f) A random sample of 20 tablets from a batch gives a mean active ingredient content 42 mg and standard deviation of 6mg. Test the hypothesis that the population mean is 44 mg. (Table t value = 2.093).

g) In a box, there are 5 Aspirin, 6 Analgin and 10 Paracetamol tablets. If one tablet is chosen at random, find the probability that: I. It is Aspirin and II. It is Paracetamol.

Q2) Answer the following (any two). **[20]**

a) Which are the different methods for presentation of data? Describe in detail about graphical presentation of data.

b) What is hypothesis testing? Explain in detail the procedure for hypothesis testing.

c) What is optimization? Explain principle and steps involved in experimental design.

d) Explain in detail about design and phases of clinical trials.

P.T.O.

Q3) Answer the following (Any Eight). **[40]**

a) What are the characteristics of good statistical measure? Write about Median and mode as the measures of central tendency.

b) Enlist the steps for constructing a frequency distribution.

c) Write note on statistical measures of dispersion.

d) Write a note on 'Student's t test'.

e) Define statistics. Write applications of statistics.

f) Write in brief about statistical analysis using Excel.

g) Explain in brief about ANOVA.

h) Write about sample and population with suitable example.

i) Write a note on "Probability Distributions".

j) Find the mean, median and mode for the following data:

X: 61, 62, 63, 64, 64, 64, 60, 65, 63, 64, 65, 66, 64.

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Total No. of Questions : 3]

SEAT No. :

P-859

[Total No. of Pages : 2

[6019]-812

Fourth.Y.B. Pharmacy

Social and Preventive Pharmacy

(2018 Pattern) (Revised) (Semester - VIII) (BP-802 T)

Time : 3 Hours] *[Max. Marks : 75*

Instructions to the candidates:

1) ***Neat diagrams must be drawn wherever necessary.***
2) ***Figures to the right indicate full marks.***

Q1) **Answer any five (05 out of 07) :** **[15]**

a) What is health care for elderly?

b) Explain Prevention and control of deafness.

c) Write significance of Health education in schools.

d) What is Urban health mission and its objectives?

e) Define health. What are the indicators of health?

f) What is National health intervention programme for mother and child?

g) How to prevent and control chicken guinea?

Q2) **Attempt any two (02 out of 04) :** **[20]**

a) Define malnutrition write the causes, symptoms and its prevention.

b) Explain prevention and control of hypertension.

c) What is SARS write its symptoms, prevention and control.

d) Explain objectives and functions of universal immunization programme.

P.T.O.

Q3) **Answer any eight (08 out of 10) :** **[40]**

a) What are the causes of influenza? Add note on its treatment and prevention.

b) Write functions of PHC in health care system.

c) Write about national leprosy control programme.

d) Write the causative factors, signs and symptoms of influenza.

e) Define hypertension. Write its treatment and management

f) Explain in detail Prevention and control of malaria.

g) Explain drug addiction and drug substance abuse.

h) Explain Community services in urban health.

i) What are the Socio cultural factors related to health and disease?

j) What is chicken guinea? Explain its treatment and prevention?

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Total No. of Questions : 3]

SEAT No. : ____

P861

[Total No. of Pages : 2

[6019]-814

Fourth Year Year B.Pharm.

PHARMACEUTICAL REGULATORY SCIENCE

(2018 Pattern) (Semester-VIII) (BP804ET)

Time : 3 Hours] ***[Max. Marks : 75***

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Figure to right indicate full marks.***

Q1) Answer the following (Solve any 5 out of 7) **[5×3=15]**

a) Write a note on purple book.

b) Define law & act. Explain importance of regulations.

c) Explain various stages of drug discovery.

d) Write a note on clinical trial protocol.

e) Explain about generic drug with examples.

f) What is ASEAN common technical document research.

g) Discuss about fedral register.

Q2) Answer the following (any 2 out of 4) **[2×10=20]**

a) Explain organization, structure & application of regulatory authorities of India.

b) What is NDA & ANDA. Give approval process & timelines involved in investigational new drug.

c) Explain procedure for export of pharmaceutical product in overseas market.

d) What is drug development process. Explain process in detail.

P.T.O.

Q3) Answer the following in brief (Answer 8 out of 10) **[8×5=40]**

a) Give brief account on common technical document.

b) Give structure & functions of ethics committee.

c) What is orange book? Give its applications.

d) Give applications of regulatory authorities of US

e) Explain preclinical studies & nonclinical activities in drug development.

f) Give organization structure of regulatory authorities of Europian union.

g) Explain Procedure & GLP obligations of investigators, Sponsors & monitors.

h) Write a note on drug master file.

i) Discuss technical documentation for Indian drug.

j) Describe regulatory authority in Japan.

Total No. of Questions : 3]

SEAT No. :

P-862

[Total No. of Pages : 2

[6019]-815

Final Year B. Pharmacy

BP805ET : PHARMACOVIGILANCE

(2018 Pattern) (Semester - VIII)

Time : 3 Hours] *[Max. Marks : 75*

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Figures to the right indicate full marks.***

Q1) **Solve any FIVE :** **[5 × 3 = 15]**

a) What are objectives of good clinical practice (GCP)?

b) Mention few primary sources of drug information.

c) What are requirements for inclusion of an event in the category of certain.

d) What is periodic safety update reports?

e) What is under reporting of ADRs?

f) Explain Cross-sectional study.

g) Define Serious adverse event, side effect and adverse event.

Q2) **Solve any TWO :** **[2 × 10 = 20]**

a) What are ADRs and its types? Discuss detection, monitoring and methods of causality assessment of ADRs.

b) Discuss in detail the setting of a pharmacovigilance system in hospital.

c) Explain different pharmacovigilance methods.

d) Explain in detail about history and development of Pharmacovigilance with special reference to Pharmacovigilance Program of India (PvPI).

P.T.O.

Q3) **Solve any EIGHT :** **[8 × 5 = 40]**

a) Write a short note on ICH guidelines

b) Discuss WHO drug dictionary and coding in pharmacovigilance.

c) Write a short note on WHO causality assessment.

d) Discuss about adverse effects after immunization.

e) What is the role of preclinical and clinical phase in safety data generation?

f) Write a note on CIOMS.

g) Discuss about drug and disease classification.

h) What are advantages and disadvantages of case control studies in vaccine safety evaluation

i) Write a note on Schedule Y.

j) Discuss about establishment of national pharmacovigilance programme.

Total No. of Questions : 3]

SEAT No. :

P-863

[Total No. of Pages : 2

[6019]-816

Final Year B. Pharmacy

BP-806ET : QUALITY CONTROL AND STANDARDIZATION OF HERBALS

(2018 Pattern) (Semester - VIII) (Theory)

Time : 3 Hours] *[Max. Marks : 75*

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Figures to right indicate full marks.***

Q1) Solve the following (Answer 5 out of 7) : **[5 × 3 = 15]**

a) Brief laboratory storage facilities as per GLP.

b) Write organoleptic & microscopical evaluation of herbals.

c) What are the sources of reports for safety monitoring of herbal medicines.

d) What are the challenges in monitoring the safety of herbal medicines.

e) Brief parameter of storage condition & testing frequency for climatic zene - IV only for stability studies for herbals.

f) Short note on 'Bulk packaging & labelling' in GACP Guideline.

g) Brief 'Personnel' in GAP guideline.

Q2) Solve long answers (Answer 2 out of 4) : **[2 × 10 = 20]**

a) Elaborate GMP requirement for factory premises as per schedule T of D & C Act.

b) Explain WHO guidelines for quality control of herbal drugs.

c) Write about licensing requirements as per ASU drug Industry under regulatory requirements for herbal medicines in India.

d) Write about research guidelines for evaluating safety & efficacy of herbal medicines.

P.T.O.

Q3) Solve short answers (Answer 8 out of 10) : **[8 × 5 = 40]**

a) Describe CGMP for herbal drug industry.

b) Discuss harvest & cultivation as per GACP guideline of WHO.

c) Explain D & C Act provision for herbals.

d) Brief chemical & physical evaluation of crude drugs.

e) Explain 'effective communication' for successful safety monitoring of herbals under pharmacovigilance system.

f) Write about standardization of herbals using markers for analytical methods.

g) Write comparative note on any two herbal pharmacopoeia.

h) Explain reporting of suspected adverse reaction & assessments of case reports from WHO guidelines on safety monitoring of herbal medicines in pharmacovigilance system.

i) Write application of HPLC & HPTLC techniques in standardization of herbal products.

j) Brief preparation of documents for new drug application.

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Total No. of Questions : 3]

SEAT No. :

P864

[Total No. of Pages : 2

[6019]-817
Fouth Year B. Pharmacy
COMPUTER AIDED DRUG DESIGN
(2018 Pattern) (Semester - VIII) (Theory) (BP807ET)

Time : 3 Hours] *[Max. Marks : 75*

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Figures to the right indicate full marks.***
3) ***Draw well labeled diagrams wherever necessary.***

Q1) Objective type Questions. (Answer 5 out of 7) **[5×3=15]**

a) Applications of QSAR.

b) Write a note on LIpinski Rule of 5.

c) Compare SAR & QSAR.

d) Write a note on cheminformatics in drug discovery process.

e) Define Bioinformatics. Mention applications of it.

f) Discuss the role of molecular & quantum mechanics in drug discovery.

g) Write a note on Taft steric constant.

Q2) Long Answer questions. (Answer 2 out of 4) **[2×10=20]**

a) What is molecular docking? Enlist various types of molecular docking & explain any one of them. Write a note on concept of virtual screening.

b) What do you mean by drug discovery & development? Explain various steps & approaches to lead discovery.

c) Explain in detail Ligand based & structure based drug design by taking suitable examples.

d) What is QSAR? Explain in detail history & development of QSAR. Explain the Hansch & free Wilson analysis & the relationship between them.

P.T.O.

Q3) Short answer questions. (Answer 8 out of 10) **[40]**

a) Explain different methods in determination of energy minimization.

b) Classify the Bio-isosterism approach with example discuss bioisosteric replacement strategy with one case study.

c) Discuss various databases used in drug design & discovery.

d) Explain in detail quantum mechanics.

e) Write in details about physicochemical parameters involved in QSAR.

f) Write a note on databases used in Bioinformatics.

g) Discuss COMFA & COMSIA.

h) Write a note on molecular mechanics.

i) Serendipitous drug discovery.

j) Drug likeness screening.

Total No. of Questions : 3]

SEAT No. :

P-865

[Total No. of Pages : 2

[6019]-818

Final Year B. Pharmacy

CELL AND MOLECULAR BIOLOGY

(2018 Pattern) (Semester - VIII) (BP808ET)

Time : 3 Hours] *[Max. Marks : 75*

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Figures to the right indicate full marks.***
3) ***Draw well labeled diagrams wherever necessary.***

Q1) **Attempt any FIVE :** **[15]**

a) Define Meiosis

b) Define Catabolism

c) Define Cell adaptation

d) Define mutation

e) Define molecular biology

f) Properties of Cell Membrane

g) Give significance of protein synthesis

Q2) **Attempt any TWO :** **[20]**

a) Explain the transducer mechanism of GPCR

b) Describe different steps involved in translation process

c) Explain cell signaling and give appropriate example for the same

d) Explain Cell death and its events, regulators and pathways

P.T.O.

Q3) **Attempt any EIGHT :** **[40]**

a) Enlist all cell organelles and its functions in eukaryotic cell.

b) Explain different check point in cell cycle.

c) Describe the process of Meiosis.

d) Explain the mechanisms of Necrosis and Apoptosis.

e) What are the types of receptors and explain any pathway associated with it?

f) Write a note on the applications of Proteomics.

g) Explain the role of Secondary messengers in metabolic pathways.

h) Write a note on regularities in protein synthesis.

i) Explain the mechanism gene expression.

j) Write a note on mechanisms of DNA transcription

Total No. of Questions : 3]

SEAT No. :

P-866

[Total No. of Pages : 2

[6019]-819

F.Y. B. Pharmacy

BP809ET : COSMETIC SCIENCE

(2018 Pattern) (Semester - VIII)

Time : 3 Hours] *[Max. Marks : 75*

Instructions to the candidates :

1) ***All questions are compulsory.***
2) ***Neat labeled diagram must be drawn wherever necessary.***
3) ***Figures to the right indicate full marks.***

Q1) **Attempt any Five out of seven of the following :** **[5 × 3 = 15]**

a) Define the cosmetics as per Indian and EU regulations.

b) Differentiate between cosmetics and cosmeceuticals.

c) Discuss the concept of transepidermal water loss.

d) Why is borax used in the preparation of the cold cream?

e) How deodorants differ from antiperspirants?

f) What is SPF and how is it calculated?

g) Write cosmetic applications of turmeric.

Q2) **Answer any two out of four of the following :** **[2 × 10 = 20]**

a) Discuss the formulation of skin cosmetics in detail.

b) Explain the common problem associated with teeth and gums. Give the detailed account on toothpaste used in gum diseases, sensitive teeth and teeth whitening.

c) Elaborate on cosmetic problems associated with dry and oily skin. How these are addressed?

d) Discuss in detail ingredients and formulation of Shampoo.

P.T.O.

Q3) **Answers in brief on any <u>eight</u> out of ten of the following : [8 × 5 = 40]**

a) Draw and label basic structure of hair. Explain hair growth cycle.

b) Write a note on herbs in cosmetics.

c) Give a brief account on anti-aging products.

d) Write a note on anti-dandruff shampoo.

e) Discuss the role of preservatives in cosmetics.

f) Discuss the formulation aspects of vanishing cream.

g) Write a note on anti-acne formulations.

h) Discuss in brief formulation aspects of hair dye.

i) What are hair conditioners? Discuss in brief ingradients of hair conditioners.

j) Write a detailed note on mouth wash.

Total No. of Questions : 3]

SEAT No. : ____

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[Total No. of Pages : 2

[6019]-820

Final Year B. Pharmacy

(BP810ET) EXPERIMENTAL PHARMACOLOGY

(2018 Pattern) (Semester - VIII)

Time : 3 Hours] ***[Max. Marks : 75***

Instructions to the candidates :

1) ***All questions are compulsory.***
2) ***Draw neat and well labeled diagram wherever necessary.***
3) ***Figures to the right indicate full marks.***

Q1) Objective type questions (Answer any 5 out of 7): **[15]**

a) Explain objectives of research with examples.

b) Discuss preclinical screening models for diuretic activity.

c) Discuss preclinical screening models for anti-dyslepidemic drugs.

d) Discuss OECD guidelines for acute oral toxicity test.

e) Enlist animal screening models for anti-asthmatic agents.

f) List out animal models for anti-parkinsonism drugs. Explain in brief its principle.

g) Define euthanasia and explain the techniques of euthanasia for laboratory animals.

Q2) Long Answers (Answer any 2 out of 4): **[20]**

a) Discuss preclinical screening models for anti-ulcer activity.

b) Explain in detail any two methods for evaluating anti-epileptic activity.

c) Discuss preclinical evaluation of anti-depresent activity.

d) Describe the preclinical screening of anti-inflammatory agents.

P.T.O.

Q3) Short answers (Answer any 8 out of 10) : **[40]**

a) Discuss the ethical principles of CPCSEA for use of animals in scientific experiments.

b) Discuss screening models for anti-hypertensive drugs.

c) Explain screening models for sympathomimetics and sympatholytics.

d) Discuss screening models for coagulants and anti-coagulants.

e) Define research and illustrate different types of research.

f) Explain preclinical evaluation of anti-pyretic activity.

g) Discuss preclinical screening models for sedative and hypnotics.

h) Discuss screening models for anti-arrythmic drugs.

i) Explain students 't' test.

j) Explain different types of hypothesis.

Total No. of Questions : 3]

SEAT No. :

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[Total No. of Pages : 2

[6019]-821
Fourth Year B.Pharmacy
ADVANCED INSTRUMENTATION TECHNIQUES
(2018 Pattern) (Semester - VIII) (BP811ET)

Time : 3 Hours] *[Max. Marks : 75*

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Figures to the right indicate full marks.***
3) ***Draw well labelled diagrams wherever necessary.***
4) ***Do not write anything on question paper except seat number.***

Q1) Answer following questions (any five). **[15]**

a) Predict multiplicities and chemical shift values of signals of proton NMR for 2 - chloro propanoic acid and 2-nitropropane.

b) Explain about Molecular ion peak, isotope peak and base peak.

c) Differentiate between K line X-ray and L line X-ray.

d) Define Calibration. How the parameter 'Resolution' is calibrated in UV spectrophotometer?

e) Discuss procedure for evaluating accuracy of electronic balance.

f) What are applications of Thermogravimetric Analysis?

g) What are the ideal characteristics of TMS to be used as internal standard for proton NMR?

Q2) Answer following questions in detail (any two). **[20]**

a) Write in detail about different ionization techniques used in Mass Spectrometry.

b) Suggest suitable chemical structure for following

spectroscopic data:

Molecular Formula C_7H_8O

IR : 3100 cm^{-1}, 2800 cm^{-1}, 1600 cm^{-1}, 1400 cm^{-1}, 1100 cm^{-1}

Proton NMR : δ 7.2 (m, 5H), δ 2.8 (s, 3H),

Mass (m/z) : 108, 93

c) Explain in detail about various parameters of calibration of HPLC system.

d) Discuss various types of Electrophoretic methods.

P.T.O.

Q3) Write short notes on following (any eight). **[40]**

a) Applications of Electrophoresis.

b) LC - MS

c) Differential Scanning Calorimetry

d) Calibration of IR spectrophotometer.

e) Liquid - Liquid Extraction

f) McLafferty rearrangement

g) Principle and Applications of Radioimmuno assay

h) Rotating Crystal technique

i) Spin - Spin coupling

j) HPTLC/MS

Total No. of Questions : 3]

SEAT No. :

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[Total No. of Pages : 2

[6019]-822

Final Year B. Pharmacy

DIETARY SUPPLEMENTS & NUTRACEUTICALS

(2018 Pattern) (Semester - VIII) (BP812ET)

Time : 3 Hours] ***[Max. Marks : 75***

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Neat, labelled diagrams must be drawn wherever necessary.***
3) ***Figures to the right indicate full marks.***

Q1) **Objective Type Questions (Answer 5 out of 7) :** **[5 × 3 = 15]**

a) What are Xanthophylls? Write about their health benefits.

b) What food standards does AGMARK specify?

c) Write the uses of oats as functional food.

d) What is the role of sulphides? Enlist sources of sulphides.

e) Explain the role of dietary fibers in maintaining gut health.

f) How do adulterants impact the quality of common food.

g) Enlist diseases or health problems that can be prevented by nutraceuticals.

Q2) **Long Answers (Any 2 out of 4) :** **[2 × 10 = 20]**

a) Classify Nutraceuticals. Explain in detail the significance of Nutraceuticals in prevention & management of obesity and diabetes, add a note on functional foods.

b) Explain in detail about the source, chemistry, and medicinal benefits of any four carotenoids.

c) What is the impact of nutrition on the health of the community. Add a note on source, chemistry, medicinal applications and health benefits of Flaxseed and Broccoli.

d) Write a detailed note on FSSAI and FDA regulations.

P.T.O.

Q3) **Short Answers (Any 8 out of 10) :** **[8 × 5 = 40]**

a) Explain the documents and requirements for obtaining FDA approval.

b) Write a note on Sea foods, add note on medicinal applications.

c) Explain in detail the damaging effects of free radicals on protein.

d) Role of free radicals in causing cancer.

e) Give the biological source, phytoconstituents and medicinal benefits of Flaxseed.

f) Explain the biological source, phytoconstituents and medicinal benefits of Carotenoids.

g) Explain in detail the mechanism of kidney damage caused by free radicals.

h) Enlist factors that reduce endogenous antioxidant enzymes.

i) Role of free radicals in inflammatory diseases.

j) Add a note on Biological Source, chemical composition, and medicinal application of Rutin.