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Total No. of Pages : 02

Roll No. _____
Total No. of Questions : 13

**B.Pharm (Sem.-2)
PHARMACEUTICAL ORGANIC CHEMISTRY-I**

Subject Code : BP-2021

M. Code : 74968

Date of Examination : 06-07-22

Max. Marks : 75

Time : 3 Hrs.

INSTRUCTIONS TO CANDIDATES :

- SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
- SECTION-B contains THREE questions carrying TEN marks each and student has to attempt any TWO questions.
- SECTION-C contains NINE questions carrying FIVE marks each and student has to attempt any SEVEN questions.

SECTION-A

1. Briefly write about the following :

- What is Diels alder reaction?
- What is allylic arrangement?
- What do you mean by ozonolysis?
- What are conjugated dienes?
- State Markownikoff's orientation.
- What is electromeric effect?
- Write structure and uses of tetrachloroethylene and tetrachloromethane.
- Write structure and uses of Hexamine.
- Structure and uses of glycerol.
- Name and write structures of one each of primary, secondary and tertiary amines.

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SECTION-B

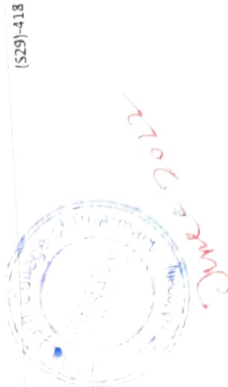
- Explain E1 versus E2 reactions with respect to mechanism, kinetics, orientation and reactivity.
- What are carbonyl compounds? Discuss Benzoin condensation and Perkin condensation in detail.
- Write in details about Ethanolamine, Ethylenediamine and Amphetamine.

SECTION-C

- Write in detail about halogenations of alkanes.
- Discuss in detail about rearrangement of carbocations.
- Give an account on factors affecting SN1 and SN2 reactions.
- Discuss structure and uses of glycerol, salicylic acid and chloral hydrate.
- Write qualitative tests, structure and uses of formaldehyde and acetone.
- Write important uses of acetic acid, chloroform, vanillin and ethyl alcohol.
- Discuss free radical addition reactions of alkenes.
- What are carboxylic acids? Explain the effect of substituent's on acidity.
- Write a short note on structural isomerism in organic compounds.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.

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Roll No. _____

Total No. of Questions : 10

Total No. of Pages : 02

B. Pharmacy (Sem.-2)
PHARMACEUTICAL CHEMISTRY-III (Organic Chemistry)

Subject Code : BPHM-203

M.Code : 46213

Date of Examination : 08-07-22

Time : 3 Hrs.

Max. Marks : 80

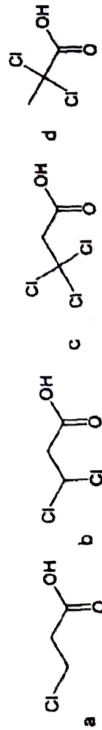
INSTRUCTION TO CANDIDATES :

- SECTION-A is COMPULSORY consisting of FIFTEEN questions carrying TWO marks each.
- SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
- SECTION-C contains FOUR questions carrying TEN marks each and students have to attempt any THREE questions.

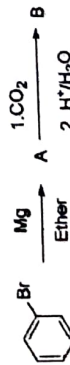
SECTION-A

1. Answer briefly :

- Write the names and structures of isomers of C_6H_{14} .
- Differentiate between polar and non-polar solvents.
- Write down the Saytzeff rule with example.
- Why amides are the least reactive?
- What are Bronsted acid and base?
- Explain the aromaticity.
- Why aliphatic amine is more basic than aniline?
- Write down the qualitative test for phenol.
- Write down the acidic order in the following acids with explanation.



j. Identify A and B in the following equation.



k. What is racemic modification?

- Why 2,4,6-trinitrophenol is called acid?
- Why does aniline not undergo Friedel-Crafts Reaction?
- What is Williamson's synthesis?
- Write down two methods for preparations of ketone.

SECTION-B

- Discuss the mixed Aldol condensation.
- Write down the method of preparation and chemical reaction of carboxylic acid.
- Write down the formation of diazonium salt and its synthetic applications.
- Discuss the stereoselective and stereospecific reactions.
- Write down short note on Hinsberg test.

SECTION-C

- Differentiate between the E1 and E2 reactions and suggest the factors affecting them.
- Write note on the following :
 - Peroxide effect.
 - Ozonolysis of alkene
- Write down the mechanism of nitration and sulfonation of benzene.
- Write note on Baeyer strain theory.



NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.

Roll No. _____

Total No. of Questions : 13

Total No. of Pages : 02

**B.Pharma. (Sem.-2)
HUMAN ANATOMY AND PHYSIOLOGY-II**

Subject Code : BP-201T

M.Code : 74967

Date of Examination : 04-07-22

Max. Marks : 75

Time : 3 Hrs.

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains THREE questions carrying TEN marks each and student has to attempt any TWO questions.
3. SECTION-C contains NINE questions carrying FIVE marks each and student has to attempt any SEVEN questions.

SECTION-A

1. Answer briefly :

- a. What are the different meninges?
- b. What is an action potential?
- c. What is a reflex action?
- d. Name the enzymes released from pancreas.
- e. What are lacteals?
- f. What is basal metabolic rate? Write its significance.
- g. What are alevolt? Write their function.
- h. What is glomerulus and glomerular filtrate rate?
- i. What are the functions of FSH?
- j. What is translation and transcription?

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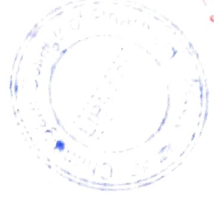
SECTION-B

2. Explain the process of menstrual cycle in detail.
3. Write the hormones released from the anterior pituitary. Write the functions of insulin.
4. Explain the structure of urinary system with a special reference to nephron.

SECTION-C

5. Write a note on chromosomes.
6. Explain the process of spermatogenesis.
7. Explain the role of renin-angiotensin system.
8. How is carbon dioxide transported in the blood?
9. Explain the functions of thyroxine. Enlist the symptoms of hyperthyroidism.
10. Explain the process of regulation of respiration (chemical method).
11. How is ATP formed?
12. What are neurons and neuroglia?
13. What do you mean by synapse, neurotransmitters and neurotransmission?

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMIC against the Student.



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Roll No. _____

Total No. of Pages : 02

Total No. of Questions : 13

B.Pharm. (Sem.-2)
PATHOPHYSIOLOGY
Subject Code : BP-204T
M.Code : 74970

Date of Examination : 12-07-22

Max. Marks : 75

Time : 3 Hrs.

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains THREE questions carrying TEN marks each and student has to attempt any TWO questions.
3. SECTION-C contains NINE questions carrying FIVE marks each and student has to attempt any SEVEN questions.

SECTION-A

I. Answer briefly :

- a. Write three characteristic features of acute inflammation.
- b. Write any one biochemical theory of depression.
- c. Enlist cell injury causing agents.
- d. What are the morphological changes in reversibly injured cell?
- e. What are the key differences between benign and malignant tumor?
- f. Differentiate between the angina pectoris and myocardial infarction?
- g. What do you mean by gout?
- h. What are the key differences between primary and secondary syphilis?
- i. What do you mean by transient ischemic attacks? How is it different from stroke?
- j. What are the characteristic features of cirrhosis?

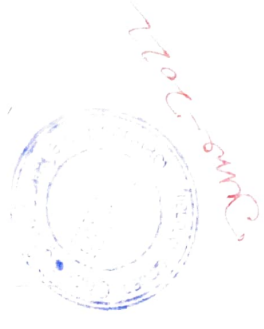
SECTION-B

2. What is Atherosclerosis? Explain its pathogenesis along with different complications that arise due to atherosclerosis.
3. What is Asthma? Explain its pathogenesis along with clinical symptoms.
4. What is *Diabetes mellitus*? What are its symptoms? What are its different types? Write the long term complications that may arise due to diabetes.

SECTION-C

5. What is Schizophrenia? What is the biochemical abnormality? Write its clinical symptoms.
6. Write a note on Thalassemia.
7. What is peptic ulcer? Explain the role of *H pylori* in its pathogenesis.
8. Write a brief note on typhoid.
9. What is rheumatoid arthritis? What are its key characteristic features? How is it different from osteoarthritis?
10. What is acute renal failure? Write its etiology. What are the tests that may help in its clinical diagnosis?
11. Explain the vascular changes occurring in acute inflammation.
12. What are hyperplasia, hypertrophy and dysplasia?
13. What is congestive heart failure? What is the role of compensatory mechanisms in its pathogenesis?

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.



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Total No. of Questions : 10

Total No. of Pages : 02

**B.Pharma. (Sem.2)
ANATOMY, PHYSIOLOGY AND HEALTH EDUCATION-I**

Subject Code : BPHM-204

M.Code : 46214

Date of Examination : 12-07-22

Time : 3 Hrs.

Max. Marks : 80

INSTRUCTION TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of FIFTEEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains FOUR questions carrying TEN marks each and students have to attempt any THREE questions.

SECTION-A

1. Answer briefly :

- a) Lymph
- b) Gout
- c) Astrocytes
- d) Cardiac output
- e) Whooping cough
- f) Mitochondria
- g) Electrocardiogram
- h) Myasthenia gravis
- i) Two joint movements
- j) Squamous epithelium
- k) Hemophilia
- l) Tetanus
- m) Spleen
- n) Osteoclasts
- o) Centrosome

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SECTION-B

2. Discuss the role of kidney in regulating blood pressure.
3. Describe the functions of
 - a) Lymphatic system
 - b) Muscular tissue
4. Describe the intrinsic and extrinsic pathways involved in the blood coagulation.
5. Draw a well labelled diagram of a
 - a) Neuron
 - b) Cell
6. Briefly discuss the following :
 - a) Chicken pox
 - b) Malaria

SECTION-C

7. Classify and describe epithelial tissues. What are the general characteristics of an epithelial tissue?
8. Describe the process of skeletal muscle contraction. What is the role of calcium and ATP in physiology of skeletal muscle contraction?
9. Discuss the cardiac cycle in detail with the help of a diagram. How blood pressure is regulated by kidney?
10. Write a note on :
 - a) Synovial joint
 - b) Microscopic structure of compact bone.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.

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Roll No.

Total No. of Questions : 13

Total No. of Pages : 02

B.Pharmacy (Sem-2)
PATHOPHYSIOLOGY
Subject Code : BP-204T
M.Code : 74970

Date of Examination : 07-06-2023

Time : 3 Hrs.

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains THREE questions carrying TEN marks each and student has to attempt any TWO questions.
3. SECTION-C contains NINE questions carrying FIVE marks each and student has to attempt any SEVEN questions.

Max. Marks : 75

SECTION-A

1. Answer briefly :
- a) Highlight prime morphologic changes in irreversible cell injury.
 - b) What is wound contraction?
 - c) What is atherosclerosis?
 - d) What is COPD?
 - e) What are tumor suppressor genes? Give examples.
 - f) What is metastasis?
 - g) What are oncogenes?
 - h) How chemical carcinogens cause DNA damage?
 - i) What is Rheumatoid arthritis and osteoarthritis?
 - j) What is Leprosy?

SECTION-B

2. What is cellular adaptation? Explain different types of cellular adaptations with suitable examples.
3. Define chronic inflammation. What are the cells involved in chronic inflammation? Describe role of lymphatic system in inflammation.
4. What is Alzheimer's disease? Discuss Pathophysiology of AD.

SECTION-C

5. Write a brief note on hypoxic/ischemic cell injury.
6. Explain key differences between apoptosis and necrosis.
7. Add a note on pathophysiology of ischemic heart disease.
8. Define anemia and explain various types of anemia.
9. Add a note on Parkinsonism.
10. Write a note on acute renal failure.
11. What are sexually transmitted diseases? Write a note on AIDS.
12. Describe pathophysiology of peptic ulcer.
13. Write a brief note on hepatitis.



NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.

Roll No.

Total No. of Questions : 13

Total No. of Pages : 02

B.Pharma (Sem-2)
HUMAN ANATOMY AND PHYSIOLOGY-II

Subject Code : BP-201T

M.Code : 74967

Date of Examination : 05-06-2023

Time : 3 Hrs.

Max. Marks : 75

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains THREE questions carrying TEN marks each and student has to attempt any TWO questions.
3. SECTION-C contains NINE questions carrying FIVE marks each and student has to attempt any SEVEN questions.

SECTION-A

1. Answer briefly :

- a) Neurotransmitter with example.
- b) Hormone with example.
- c) Reflex action.
- d) BMR.
- e) Total lung capacity.
- f) Spermatogenesis.
- g) Endocrine pancreas.
- h) RNA and its types.
- i) CSF.
- j) Cushing's syndrome.

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SECTION-B

2. Enlist the various organs of digestive system and discuss in detail about digestion of food in GIT.
3. What are endocrine glands? Name the various endocrine glands of the body and discuss hormones of anterior pituitary gland.
4. What are the organs of urinary tract? Discuss physiology of urine formation by the kidneys.

SECTION-C

5. Write a note on spinal cord.
6. Write a note on formation and functions of ATP
7. Discuss the various functions of the liver.
8. Enlist the various organs of respiratory system and describe mechanism of respiration.
9. Discuss the process of nerve action potential generation.
10. Describe various phases of a typical menstruation cycle.
11. Add a brief note on regulation of respiration.
12. Discuss role of kidneys in the regulation of blood pressure.
13. Add a note on DNA and its functions.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student

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July-2023

Roll No.

Total No. of Questions : 13

Total No. of Pages : 02

**B. Pharma (Sem.-2)
PHARMACEUTICAL ORGANIC CHEMISTRY-I**

Subject Code : BP-202T

M.Code : 74968

Date of Examination : 30-05-23

Time : 3 Hrs.

Max. Marks : 75

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains THREE questions carrying TEN marks each and student has to attempt any TWO questions.
3. SECTION-C contains NINE questions carrying FIVE marks each and student has to attempt any SEVEN questions.

SECTION-A

1. Briefly write about the following :

- a) Draw structures of various isomers are possible for $C_4H_{10}O$. Write their chemical names.
- b) Define electromeric effect.
- c) Comment upon the stability of carbocations.
- d) Comment upon the uses of chlorobutanol.
- e) Write the chemical equation when ethyl chloride reacts with KCN. Give the name of product formed.
- f) Write down cannizzaro reaction.
- g) Give chemical test to distinguish between acetaldehyde and acetic acid.
- h) Give the structure and uses of tartaric acid.
- i) Write any two methods of preparation of alkynes.
- j) Write down the structure of any two medicinally important alcohols.

SECTION-B

2. Write a note on different mechanisms involved in the substitution reactions of alkyl halides. Comment upon their reaction kinetics, order of reactivity and stereochemistry involved.
3. a) Give detailed note on the various methods of preparation of aldehydes and ketones.
b) Write a note on effect of substituents on the acidity of carboxylic acids.
4. Account for the following :
 - a) Halogenation of alkanes
 - b) Factors affecting E_1 and E_2 reactions

SECTION-C

5. Explain the stability of alkenes and conjugated dienes.
6. Write down various tests involved in the identification of alcohols.
7. Classify organic compounds. Write down atleast one chemical reaction of each class.
8. Write a short note on Benzo in condensation reaction.
9. Define Basicity. Comment upon the effect of substituent upon basicity of various amines.
10. What is the structure and use of Hexamine and vanillin?
11. Write structure of any five medicinally important examples of carboxylic acids.
12. Give chemical tests to identify the presence of propanoic acid, acetaldehyde and methylpropanoate.
13. Comment upon hybridisation in alkanes.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.

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Total No. of Pages : 02

Total No. of Questions : 13

B. Pharma (Sem.-2)
HUMAN ANATOMY AND PHYSIOLOGY-II
Subject Code : BP-201T

M. Code : 74967

Date of Examination: 13-12-2022

Max. Marks : 75

Time : 3 Hrs.

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains THREE questions carrying TEN marks each and student has to attempt any TWO questions.
3. SECTION-C contains NINE questions carrying FIVE marks each and student has to attempt any SEVEN questions.

SECTION-A

1. Answer briefly :

- a) What is neurotransmitter? Give two examples.
- b) What are afferent & efferent nerves?
- c) What are accessory organs of digestive system?
- d) What are endocrine glands? Enlist various endocrine glands of the body.
- e) What is total lung capacity?
- f) What is CPR?
- g) Highlight various functions of the kidneys.
- h) What is spermatogenesis?
- i) What are female sex hormones?
- j) What is ATP?

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SECTION-B

2. Discuss structure of kidney and explain the process of urine formation by the kidneys.
3. Enlist various parts of the gastrointestinal tract and discuss in detail about physiology of food digestion.
4. Mention organs of the respiratory system and describe regulation of respiration in detail.

SECTION-C

5. Write a note on physiology of brain stem.
6. Draw a neat and labeled diagram of nephron?
7. Write a short note on liver.
8. Add note on hormones of adrenal cortex.
9. Explain mechanism of gaseous exchange between blood and alveoli.
10. Write a brief note on spinal cord.
11. Discuss role of kidneys in acid-base balance.
12. Write a short note on DNA.
13. Add a note on physiology of menstruation.



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Dr. C-2022

Roll No.

Total No. of Pages : 02

Total No. of Questions : 13

B.Pharma (Sem.-2)
PATHOPHYSIOLOGY
Subject Code : BP-204T
M.Code : 74970
Date of Examination : 20-12-22

Time : 3 Hrs.

Max. Marks : 75

INSTRUCTIONS TO CANDIDATES :

- ~~SECTION-A is compulsory consisting of TEN questions carrying TWO marks each.~~
- SECTION-B contains THREE questions carrying TEN marks each and student has to attempt any TWO questions.
- SECTION-C contains NINE questions carrying FIVE marks each and student has to attempt any SEVEN questions.

SECTION-A

- Answer briefly :
 - What are cells involved in acute and chronic inflammation?
 - What any one biochemical theory of epilepsy?
 - What are the changes taking place in the blood flow during migraine?
 - What are the changes occurring in nucleus during cell injury?
 - What are the factors contributing in irreversible cells injury during hypoxia?
 - What do you understand by myocardial infarction?
 - What do you mean by response to endothelial injury in atherosclerosis?
 - What is tertiary syphilis?
 - What is stroke?
 - What do you understand by alcoholic liver disease?

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SECTION-B

- What is anemia? What are its different types? Explain iron deficiency anemia with clinical symptoms and laboratory diagnosis.
- What is rheumatoid arthritis? How is different from osteoarthritis? Explain the clinical symptoms along with the pathogenesis of rheumatoid arthritis.
- What are sexually transmitted diseases? Explain the pathogenesis, different stages and symptoms of AIDS in each stage.

SECTION-C

- What is Parkinson disease? Write its biochemical theory along with clinical symptoms.
- What is diabetes mellitus? What are its different types? Write the clinical symptoms.
- What do you understand by inflammatory bowel disease? What are its different types?
- What do you mean by acute renal failure? Write the factors that may contribute in the development of acute renal failure.
- Write a note on arachidonic acid derived metabolites.
- What is CHF? What are the compensatory mechanisms activated in CHF?
- What are the different types of cell adaptations that may occur?
- Write a note on schizophrenia.
- What is cancer? Write the differences between benign and malignant tumors.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.

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Roll No.

Total No. of Questions : 22 Total No. of Pages : 03

**B.Pharma (2017 & Onwards) (Sem.-2)
HUMAN ANATOMY AND PHYSIOLOGY-II**

Subject Code : BP-201T
M.Code : 74967

Time : 3 Hrs.

Max. Marks : 75

INSTRUCTIONS TO CANDIDATES :

- SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
- SECTION-B contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.
- SECTION-C contains NINE questions carrying FIVE marks each and students have to attempt any SEVEN questions.

SECTION-A

Choose correct answer of the following objective type questions :

- Q1. They all are true for brain stem, except :
- Superiorly, it relates to forebrain
 - Inferiorly, it relates to spinal cord
 - Anteriorly, it relates to midbrain
 - Posteriorly, it relates to cerebellum.
- Q2. Somatosensory cortex is :
- sheet of white matter
 - area of post central gyrus
 - bundle of axons
 - all.
- Q3. Nervous control of the GI tract would be impaired by damage to the :
- Mucosa
 - Muscularis.
 - Sub-mucosa.
 - Serosa.

Q4. Cholesterol removal and degradation is the primary function of the :

- Chylomicrons
- HDL.
- LDL
- VLDL.

Q5. The volume of air that can be exhaled during forced breathing in addition to tidal volume is :

- Residual volume
- Expiratory reserve volume
- Vital capacity
- Total lung capacity

Q6. The outer layer of the kidney, just internal to the fibrous capsule, is the renal :

- Medulla
- Column.
- Pelvis.
- Cortex.

Q7. In adults, insufficient thyroxine can lead to :

- Goiter.
- Libido
- Cretinism.
- Myxedema

Q8. They all regulate calcium level in blood, except :

- Cholecalciferol
- Calcitonin
- calcineurin
- PTH

Q9. Where does fertilization usually take place?

- Cervix
- Vagina
- Uterus
- Oviduct

Q10. Alleles are :

- Linked genes
- Alternative form of genes
- Homologous chromosome
- Cross over chromosome



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SECTION-B

- Q11. Outline physiological importance of calcium and its regulation in human body.
- Q12. How white matter is different from grey matter? Discuss white matter as a part of central nervous system.
- Q13. Discuss various mode of cellular communications. Give a detailed classification of hormones.

SECTION-C

- Q14. Define Neurotransmission. Outline various steps of neurotransmission.
- Q15. Draw cross section of human spinal cord.
- Q16. Outline parts of gastrointestinal tract.
- Q17. How kidneys regulate acid-base balance?
- Q18. Discuss urine formation in detail.
- Q19. Write a note on adrenal androgens.
- Q20. How gigantism is different from acromegaly?
- Q21. Write a detailed note on parturition.
- Q22. Explain genetic pattern of inheritance.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.

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Dr. 2020

Roll No.

Total No. of Pages : 02

Total No. of Questions : 24

B.Pharm (2017 & Onwards) (Sem.-2)

PATHOPHYSIOLOGY

Subject Code : BP-204T

M.Code : 74970

Time : 3 Hrs.

Max. Marks : 75

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.
3. SECTION-C contains NINE questions carrying FIVE marks each and students have to attempt any SEVEN questions.

SECTION-A

Answer briefly :

1. What are symptoms of peptic ulcers?
2. What is biochemical theory of schizophrenia?
3. What is classical migraine?
4. What are the characteristic features of acute inflammation?
5. What are the morphological changes in reversibly injured cells during hypoxia?
6. What is Prinzmetal angina?
7. What are causative microorganisms for meningitis?
8. What is primary syphilis?
9. What is ischemic stroke?
10. How is vitamin B₁₂ deficiency anemia different from folic acid deficiency anemia?

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SECTION-B

11. Write characteristic features of typhoid.
12. What are different opportunistic infections that may occur in AIDS patient?
13. What is gout? Explain the symptoms and pathogenesis of gouty arthritis

SECTION-C

14. What is chronic inflammation? Write a note on arachidonic acid metabolites as inflammatory mediators.
15. What is bronchial asthma? What are its symptoms? Explain its pathogenesis
16. Explain the types of congestive heart failure along with their characteristic symptoms? Explain the pathogenesis of CHF.
17. Write a note on acute renal failure.
18. a) What are symptoms of diabetes mellitus?
b) What is metastasis?
19. a) What is Gohn complex?
b) What is rheumatoid factor?
15. What is biogenic amine theory of depression?
19. Differentiate hepatitis A, B and C
20. What are the key events involved in ischemia-induced cell injury?

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.

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Roll No.

Total No. of Questions : 22

Total No. of Pages : 03

B.Pharma (2017 & Onwards) (Sem.-2)

BIOCHEMISTRY

Subject Code : BP-203T

M.Code : 74969

Time : 3 Hrs.

Max. Marks : 75

INSTRUCTIONS TO CANDIDATES :

- SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
- SECTION-B contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.
- SECTION-C contains NINE questions carrying FIVE marks each and students have to attempt any SEVEN questions.

SECTION-A

Choose correct answer of the following objective type questions :

- In nucleotide nitrogenous base is linked with ribose by _____
A. N-glycosidic bond B. O-glycosidic bond
C. Peptide bond D. Phosphodiesterase
- Glycogen is _____ of glucose :
A. Homo polysaccharide B. Hetero polysaccharide
C. Oligosaccharide D. Disaccharide
- Storage material of fuel in plant is :
A. Starch B. Glycogen
C. Glucose D. Galactose
- Amino acids in proteins are usually in _____
A. L-isomer B. D-isomer
C. A & B both D. None of above

- For endergonic reactions ΔG is _____
A. Positive B. Negative
C. Zero D. Slightly negative
- Expand the short form 'PRPP'.
A. 5-Phosphoribosyl 1-pyrophosphate
B. 1-Phosphoribosyl 5-pyrophosphate
C. 5-Phosphoribosyl 2-pyrophosphate
D. 5-Phosphoribosyl 3-pyrophosphate
- How many NADH molecules are generated in complete oxidation of one molecule of Acetyl-CoA
A. 4 B. 2
C. 5 D. 3
- Synthesis of fatty acid takes place in
A. Cytosol B. Mitochondria
C. Both in A & B D. Membrane
- Coenzyme derived from vitamin B₁₂ is
A. NAD B. NADP
C. A& B both D. FAD
- Non-sense codon is _____
A. UAA B. UGA
C. UAG D. All three



1 M 74969

(1/19) (05)

1 M 74969

SECTION-B

11. Compare reactions of glycolysis and HMP shunt. Comment on deficiency of G6PD.
12. Describe various steps of de novo synthesis of pantoic acid. Explain the role of citrate shuttle.
13. Describe various steps of protein synthesis. Comment on its inhibitors.

SECTION-C

14. Classify amino acid on the basis of side chain.
15. Draw structure of ATP and describe its biological significance as high energy molecules.
16. Name three enzymes involved in glycogenolysis. Describe their reactions.
17. Differentiate between oxidative phosphorylation and substrate level phosphorylation.
18. Describe formation and utilization of ketone bodies.
19. Describe the biological significance and biosynthesis of adrenaline.
20. Discuss the metabolic disorder of tyrosine.
21. Discuss the semi-conservative model of DNA replication.
22. Describe reactions of urea cycle.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student



Roll No.

Total No. of Questions : 22

Total No. of Pages : 02

B.Pharm (2017 & Onwards) (Sem.-2)
PHARMACEUTICAL ORGANIC CHEMISTRY-I
Subject Code : BP-202T
M.Code : 74968

Time : 3 Hrs.

Max. Marks : 75

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is **COMPULSORY** consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains THREE questions carrying TEN marks each and student has to attempt any TWO questions.
3. SECTION-C contains NINE questions carrying FIVE marks each and student has to attempt any SEVEN questions.

SECTION-A

Briefly write about the following :

1. Write the structure and uses of Hexamine and Chloral Hydrate.
2. Define diastereomers and meso compounds
3. Differentiate between configuration and conformation
4. sp^2 hybridization in alkenes
5. Write structure of Amphetamine.
6. Structure and uses of glycerol.
7. Give qualitative test for chlorobutanol
8. What happens when amides are heated with sodium hydroxide?
9. Saytzeff's orientation in elimination reactions.
10. Give structure and medicinal uses of Acetyl salicylic acid.

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SECTION-B

11. Discuss the following :
 - i) Ozonolysis
 - ii) Allylic rearrangement.
12. i) Explain the mechanism of Cannizzaro and crossed Cannizzaro reactions.
ii) Explain Anti Markownikoff's rule with suitable example
13. Discuss the mechanism of SN^1 and SN^2 reactions of alkyl halides

SECTION-C

14. Discuss the qualitative tests of esters.
15. Write the differences between E_1 and E_2 reactions.
16. Discuss about acidity of carboxylic acids and effects of substituent on it.
17. Explain D/L and d/l notations giving examples.
18. Explain the mechanism of Perkin condensation reaction.
19. How will you differentiate between 1°, 2° and 3° amines qualitatively?
20. What do you understand by R and S notations in optically active compounds?
21. Describe electrophilic addition reactions of conjugated dienes.
22. Discuss the order of reactivity of alkyl halides in elimination reactions.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.

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DEC-2020

Total No. of Pages : 02

Roll No.

Total No. of Questions : 24

B.Pharma (2017 & Onwards) (Sem.-2)

PATHOPHYSIOLOGY

Subject Code : BP-204T

M.Code : 74970

Time : 3 Hrs.

Max. Marks : 75

INSTRUCTIONS TO CANDIDATES :

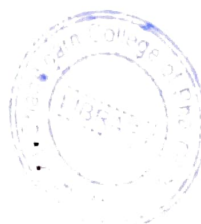
1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.
3. SECTION-C contains NINE questions carrying FIVE marks each and students have to attempt any SEVEN questions.

SECTION-A

Answer briefly :

1. What are symptoms of peptic ulcers?
2. What is biochemical theory of schizophrenia?
3. What is classical migraine?
4. What are the characteristic features of acute inflammation?
5. What are the morphological changes in reversibly injured cells during hypoxia?
6. What is Prinzmetal angina?
7. What are caustive microorganisms for meningitis?
8. What is primary syphilis?
9. What is ischemic stroke?
10. How is vitamin B₁₂ deficiency anemia different from folic acid deficiency anemia?

M- 74970



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2020

SECTION-B

11. Write characteristic features of typhoid.
12. What are different opportunistic infections that may occur in AIDS patient?
13. What is gout? Explain the symptoms and pathogenesis of gouty arthritis.

SECTION-C

14. What is chronic inflammation? Write a note on arachidonic acid metabolites as inflammatory mediators.
15. What is bronchial asthma? What are its symptoms? Explain its pathogenesis.
16. Explain the types of congestive heart failure along with their characteristic symptoms? Explain the pathogenesis of CHF.
17. Write a note on acute renal failure.
18. a) What are symptoms of diabetes mellitus?
b) What is metastasis?
19. a) What is Gohn complex?
b) What is rheumatoid factor?
15. What is biogenic amine theory of depression?
19. Differentiate hepatitis A, B and C.
20. What are the key events involved in ischemia induced cell injury?

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Roll No.

Total No. of Pages : 03

Total No. of Questions : 22

B.Pharma (2017 & Onwards) (Sem.-2)

BIOCHEMISTRY

Subject Code : BP-203T

M.Code : 74969

Time : 3 Hrs.

Max. Marks : 75

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.
3. SECTION-C contains NINE questions carrying FIVE marks each and students have to attempt any SEVEN questions.

SECTION-A

Choose correct answer of the following objective type questions :

1. In nucleotide nitrogenous base is linked with ribose by _____
 - A. N-glycosidic bond
 - B. O-glycosidic bond
 - C. Peptide bond
 - D. Phosphodiesterase
2. Glycogen is _____ of glucose :
 - A. Homo polysaccharide
 - B. Hetero polysaccharide
 - C. Oligosaccharide
 - D. Disaccharide
3. Storage material of fuel in plant is :
 - A. Starch
 - B. Glycogen
 - C. Glucose
 - D. Galactose
4. Amino acids in proteins are usually in :
 - A. L-isomer
 - B. D-isomer
 - C. A & B both
 - D. None of above



2020

1 M-74969

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5. For endergonic reactions ΔG is _____
- A. Positive
B. Negative
C. Zero
D. Slightly negative
6. Expand the short form 'PRPP'
- A. 5-Phosphoribosyl 1-pyrophosphate
B. 1-Phosphoribosyl 5-pyrophosphate
C. 5-Phosphoribosyl 2-pyrophosphate
D. 5-Phosphoribosyl 3-pyrophosphate
7. How many NADH molecules are generated in complete oxidation of one molecule of Acetyl-CoA
- A. 4
B. 2
C. 5
D. 3
8. Synthesis of fatty acid takes place in
- A. Cytosol
B. Mitochondria
C. Both in A & B
D. Membrane
9. Coenzyme derived from vitamin B₃ is
- A. NAD
B. NADP
C. A& B both
D. FAD
10. Nonsense codon is _____
- A. UAA
B. UGA
C. UAG
D. All three



2020

SECTION-B

11. Compare reactions of glycolysis and HMP shunt. Comment on deficiency of G6PD
12. Describe various steps of de novo synthesis of pantoic acid. Explain the role citrate shuttle.
13. Describe various steps of protein synthesis. Comments on its inhibitors.

SECTION-C

14. Classify amino acid on the basis of side chain.
15. Draw structure of ATP and describe its biological, significance as high energy molecules.
16. Name three enzymes involved in glycogenolysis. Describe their reactions.
17. Differentiate between oxidative phosphorylation and substrate level phosphorylation.
18. Describe formation and utilization of ketone bodies.
19. Describe the biological significance and biosynthesis of adrenaline.
20. Discuss the metabolic disorder of tyrosine.
21. Discuss the semi-conservative model of DNA replication.
22. Describe reactions of urea cycle.

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Roll No.

Total No. of Questions : 22

Total No. of Pages : 03

B.Pharma (2017 & Onwards) (Sem.-2)
HUMAN ANATOMY AND PHYSIOLOGY-II

Subject Code : BP-201T

M.Code : 74967

Time : 3 Hrs.

Max. Marks : 75

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.
3. SECTION-C contains NINE questions carrying FIVE marks each and students have to attempt any SEVEN questions.

SECTION-A

Choose correct answer of the following objective type questions :

Q1. They all are true for brain stem, except :

- A) Superiorly, it relates to forebrain
- B) Inferiorly, it relates to spinal cord
- C) Anteriorly, it relates to midbrain
- D) Posteriorly, it relates to cerebellum.

Q2. Somatosensory cortex is :

- A) sheet of white matter
- B) area of post central gyrus
- C) bundle of axons
- D) all.

Q3. Nervous control of the GI tract would be impaired by damage to the :

- A) Mucosa
- B) Muscularis.
- C) Sub-mucosa.
- D) Serosa.



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- Q4. Cholesterol removal and degradation is the primary function of the :
- A) Chylomicrons
 - B) HDL
 - C) LDL
 - D) VLDL
- Q5. The volume of air that can be exhaled during forced breathing in addition to tidal volume is :
- A) Residual volume
 - B) Expiratory reserve volume
 - C) Vital capacity
 - D) Total lung capacity
- Q6. The outer layer of the kidney, just internal to the fibrous capsule, is the renal :
- A) Medulla
 - B) Column.
 - C) Pelvis.
 - D) Cortex.
- Q7. In adults, insufficient thyroxine can lead to :
- A) Goiter.
 - B) Libido
 - C) Cretinism.
 - D) Myxedema
- Q8. They all regulate calcium level in blood, except :
- A) Cholecalciferol
 - B) Calcitonin
 - C) calcineurin
 - D) PTH
- Q9. Where does fertilization usually take place?
- A) Cervix
 - B) Vagina
 - C) Uterus
 - D) Oviduct
- Q10. Alleles are :
- A) Linked genes
 - B) Alternative from of genes
 - C) Homologous chromosome
 - D) Cross over chromosome

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SECTION-B

- Q11. Outline physiological importance of calcium and its regulation in human body.
- Q12. How white matter is different from grey matter? Discuss white matter as a part of central nervous system.
- Q13. Discuss various mode of cellular communications. Give a detailed classification of hormones.

SECTION-C

- Q14. Define Neurotransmission. Outline various steps of neurotransmission.
- Q15. Draw cross section of human spinal cord.
- Q16. Outline parts of gastrointestinal tract.
- Q17. How kidneys regulate acid-base balance?
- Q18. Discuss urine formation in detail.
- Q19. Write a note on adrenal androgens.
- Q20. How gigantism is different from acromegaly?
- Q21. Write a detailed note on parturition.
- Q22. Explain genetic pattern of inheritance.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.



Roll No.

Total No. of Pages : 02

Total No. of Questions : 22

B.Pharma (2017 & Onwards) (Sem.-2)

PHARMACEUTICAL ORGANIC CHEMISTRY-I

Subject Code : BP-202T

M.Code : 74968

Time : 3 Hrs.

Max. Marks : 75

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains THREE questions carrying TEN marks each and student has to attempt any TWO questions.
3. SECTION-C contains NINE questions carrying FIVE marks each and student has to attempt any SEVEN questions.

SECTION-A

Briefly write about the following :

1. Write the structure and uses of Hexamine and Chloral Hydrate.
2. Define diastereomers and meso compounds.
3. Differentiate between configuration and conformation.
4. SP^2 hybridization in alkenes.
5. Write structure of Amphetamine.
6. Structure and uses of glycerol.
7. Give qualitative test for chlorobutanol.
8. What happens when amides are heated with sodium hydroxide?
9. Saytzeffs orientation in elimination reactions.
10. Give structure and medicinal uses of Acetyl salicylic acid.



2020

1 M-74968

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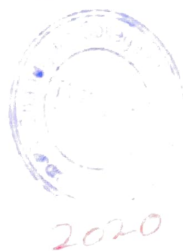
SECTION-B

11. Discuss the following :
- Ozonolysis
 - Allylic rearrangement.
12. i) Explain the mechanism of Cannizzaro and crossed Cannizzaro reactions.
ii) Explain Anti Markownikoff's rule with suitable example.
13. Discuss the mechanism of SN^1 and SN^2 reactions of alkyl halides

SECTION-C

14. Discuss the qualitative tests of esters.
15. Write the differences between E_1 and E_2 reactions.
16. Discuss about acidity of carboxylic acids and effects of substituent on it.
17. Explain D/L and d/l notations giving examples.
18. Explain the mechanism of Perkin condensation reaction.
19. How will you differentiate between 1° , 2° and 3° amines qualitatively?
20. What do you understand by *R* and *S* notations in optically active compounds?
21. Describe electrophilic addition reactions of conjugated dienes.
22. Discuss the order of reactivity of alkyl halides in elimination reactions.

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Total No. of Pages : 03

e) The successive nucleotides in DNA are linked through bridge.

- i. Phosphodiester
- ii. Amide
- iii. Glycosidic
- iv. None of these

Roll No. _____

Total No. of Questions : 13
 B.Pharma (2017 & Onwards) (Sem.-2)
BIOCHEMISTRY

Subject Code : BP-203T
 M.Code : 74969

Max. Marks : 75

Time : 3 Hrs.

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains THREE questions carrying TEN marks each and student has to attempt any TWO questions.
3. SECTION-C contains NINE questions carrying FIVE marks each and student has to attempt any SEVEN questions.

SECTION-A

Q1. Answer briefly :

- a) Amino acid residues present in protein are..... amino acids.
 - i. α
 - ii. β
 - iii. γ
 - iv. δ
- b) Formation of cyclic structure of glucose from open chain structure is an example of.....
 - i. Nucleophilic addition
 - ii. Formation of hemi-acetal
 - iii. Formation of acetal
 - iv. i and ii
- c) Spingomyelin is a derivative of .
 - i. Spingosine
 - ii. Ceramide
 - iii. Phosphotidic acid
 - iv. i and ii.
- d) For C_α-C bond in backbone of protein, the bond angle resulting from rotation at C_α is labeled as
 - i. ϕ
 - ii. ψ
 - iii. θ
 - iv. i and ii both

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iii. Hydrolysed with positive ΔG

iv. All of the above

b) is an essential amino acid.

iv. Alanine.

i. Lysine

ii. Tyrosine

iii. Glycine

ii. Transfer of amino acid to a keto acid is known as

- i. Transamination
- ii. Deamination
- iii. Transdeamination
- iv. i and iii both

d) Myocardial infarction can be diagnosed by isoenzyme of

iv. ACP

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May - 2019

SECTION-B

- Q2 Give outline for gluconeogenesis. Explain its biochemical significance.
- Q3 Describe the *de novo* synthesis of pyrimidine nucleotides. Comment on hyperuricemia.
- Q4 Give IUB system of enzyme classification. Discuss the two diagnostic applications of isoenzymes citing suitable examples.

SECTION-C

- Q5 Explain various types of stereoisomerism present in monosaccharides.
- Q6 Explain the mechanism of oxidative phosphorylation.
- Q7 Describe the various steps involved in β -oxidation.
- Q8 Describe biosynthesis of catecholamines from tyrosine catabolism.
- Q9 Discuss the biochemical causes of jaundice.
- Q10 Describe reactions of Krebs-Henseleit cycle.
- Q11 Describe post transcriptional modifications in primary transcripts of mRNA.
- Q12 Give outline for the conversion of cholesterol to adrenal cortex hormone.
- Q13 Give structure and biochemical significance of co-enzymes derived from Vitamin B2.

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Roll No.

Total No. of Pages : 03

Total No. of Questions : 13

B.Pharma (2017 & Onwards) (Sem.-2)

BIOCHEMISTRY

Subject Code : BP-203T

M.Code : 74969

Time : 3 Hrs.

Max. Marks : 75

INSTRUCTIONS TO CANDIDATES :

- SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
- SECTION-B contains THREE questions carrying TEN marks each and student has to attempt any TWO questions.
- SECTION-C contains NINE questions carrying FIVE marks each and student has to attempt any SEVEN questions.

SECTION-A

1. Multiple choice questions :

- Formation of cyclic structure of α -D glucose is an example of:
(a) Nucleophilic addition (b) Hemi-acetal formation
(c) Acetal formation (d) Both (a) and (b)
- Amino acids in proteins are usually in :
(a) L form (b) D form
(c) Both L & D form (d) Either L or D
- enzyme is required for oxidative decarboxylation of pyruvic acid.
(a) PDH (b) Pyruvate kinase
(c) Enolase (d) GADPH
- Following hormone is not involved in the regulation of blood glucose :
(a) Insulin (b) Epinephrine
(c) Glucagon (d) Oxytocin

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c) Formation of ATP coupled with de phosphorylation of phosphoenolpyruvate is the example of :

- Substratelevel phosphorylation
- Oxidative phosphorylation
- Substrate level dephosphorylation
- Oxidative dephosphorylation

f) Bile acid is :

- Cholesterol derivative
- Carbohydrate derivative
- Amino acid derivative
- Nucleotide derivative

g) First digit of EC number of succinate thiokinase is :

- 1
- 4
- 3
- 6

h) The DNA strand which does not participate in transcription is referred to as :

- Non-coding strand
- Sense strand
- Coding strand
- All of these

i) pathway recycle the free bases and nucleoside released from nucleic acid breakdown.

- Salvage
- De novo
- Both (a) & (b)
- None of these

j) Following is not the cause of atherosclerosis :

- High BP
- High cholesterol
- Diabetes
- Acidosis

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SECTION-B

2. Describe the reactions of citric acid cycle and comment on its anapleurotic nature.
3. Describe the reaction of β -oxidation. Comment on energy conservation in this catabolic pathway.
4. Describe the various steps of protein synthesis. Comment on inhibitors of this anabolic pathway.

SECTION-C

5. Classify polysaccharides with one structural example of each class. Comment on the structure of starch.
6. Name the four levels of protein structure. Briefly explain secondary structure of protein.
7. Discuss the structure of ATP and its biological significance.
8. Compare glycolysis and gluconeogenesis.
9. Explain the mechanism of electron transport chain.
10. Describe the reactions of ketogenesis.
11. Explain the semi conservative model of DNA replication.
12. Describe the synthesis and biological significance of dopamine.
13. What is Lineweaver-Burk plot of enzyme kinetics? What are its advantages over Michaelis-Menten plot?

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.

Roll No. _____

Total No. of Questions : 11

Total No. of Pages : 04

**B. Pharmacy (2012 to 2016) (Sem.-2)
HUMAN VALUES AND PROFESSIONAL ETHICS**

Subject Code : HVPE-101

M.Code : 46244

Time : 3 Hrs.

Max. Marks : 80

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A contains objective type questions.
2. SECTION-B contains short answer type questions.
3. SECTION-C contains descriptive answer type questions.
4. Attempt ALL questions.

SECTION-A

(10 × 1 = 10)

1. Fill in the Blanks/True/False :

a. Physical facilities are necessary but for humans.

ਸੰਸਾਰ ਸੁਵਿਧਾਏਂ ਸਹੂਲਤਾਂ ਲਈ ਜ਼ਰੂਰੀ ਹਨ, ਲੇਕਿਨ ਹਨ।

b. There are orders in Nature.

ਸੁਭਾ ਵਿੱਚ ਮੌਜੂਦਗੀ ਆਦਮੀ ਆਦਮੀ ਹੈ।

c. Right is a state of liking is

ਕੁਦਰਤ ਵਿੱਚ ਆਦਮੀ ਹਨ।

d. Right understanding + = Mutual prosperity.

ਸਹੀ ਸਮਝ + = ਪਾਰਸਪੈਕਿਕ ਸਮਝ

e. The process for value education is

ਮੁੱਲ ਸਿੱਖਿਆ ਲਈ ਪ੍ਰਕਿਰਮਾ ਹੈ

f. The process for value education is

ਮੁੱਲ ਸਿੱਖਿਆ ਲਈ ਪ੍ਰਕਿਰਮਾ ਹੈ

g. The process for value education is

ਮੁੱਲ ਸਿੱਖਿਆ ਲਈ ਪ੍ਰਕਿਰਮਾ ਹੈ

h. The process for value education is

1. Natural acceptance remains constant with time

ਸਵਾਭਾਵਿਕ ਸਵੀਕ੍ਰਿਤੀ ਕੇ ਸਮਾਨ ਕੇ ਸਾਥ ਬਿਧਰ ਰਹਿੰਦੀ ਹੈ।

2. Prosperity and wealth are equivalent

ਸਮ੍ਰਿਠੀ ਅਤੇ ਖਜ਼ਾਨਾ ਬਰਾਬਰ ਹਨ।

3. Respect is right evaluation.

ਸਤਿਕਾਰ ਸਹੀ ਮੁਲਾਂਕਨ ਹੈ।

4. Ethical Human Conduct leads to Mutual Fulfilment.

ਨੈਤਿਕ ਮਨੁੱਖੀ ਵਿਉਹਾਰ ਪਰਸਪਰ ਪੂਰਕਤਾ ਵੱਲ ਲੈ ਜਾਂਦਾ ਹੈ।

5. Holistic technologies should be eco-friendly and people-friendly.

ਸਮਝ ਸ਼ਾਮਲ ਤਕਨੀਕਾਂ ਆਮ ਵਰਤੋਂ ਅਤੇ ਮਨੁੱਖ-ਮਿਤਰ ਹੋਣੀਆਂ ਚਾਹੀਦੀਆਂ ਹਨ।

SECTION-B

2. What are the basic guidelines of value education?

ਮੁੱਲ ਸਿੱਖਿਆ ਦੀ ਬੁਨਿਆਦੀ ਦਿਸ਼ਾ-ਨਿਰਦੇਸ਼ ਕੀ ਹੈ?

3. Explain Natural Acceptance.

ਸਵਾਭਾਵਿਕ ਸਵੀਕ੍ਰਿਤੀ ਸਮਝਾਓ।

4. What is meant by Gratitude? Express an example from your life in your mutual relationships.

ਆਮਾਨ ਸ਼ੁਕਰ ਕੀ ਕੀਮਤ ਕੀ ਹੈ? ਆਪਣੇ ਜੀਵਨ ਵਿੱਚ ਇੱਕ ਉਦਾਹਰਣ ਆਪਣੇ ਆਪਸੀ ਰਿਸ਼ਤਿਆਂ ਵਿੱਚ ਦਿਖਾਓ।



[M-46244]

(S-17) 2260

(S-17) 2260

[M-46244]

5. What do you mean by Animal Consciousness and Human Consciousness? How is the transformation possible from Animal Consciousness to human Consciousness? आपका पशु चेतना और सावक चेतना में क्या मतलब है। पशु चेतना में सावक चेतना के लिए परिवर्तन कैसे संभव है?

तुहाडा पशु चेतना अडे मनुषी चेतना में की मतलब है? की मतलब है? पशु चेतना में मनुषी चेतना में क्या की तबदीली किस तरुा संभव है?

6. Explain harmony in family.

परिवार में तालमेल के बारे में बताएं।

परिवार में तालमेल के बारे में बताएं।

SECTION-C

7. Differentiate between intention and competence. How do we come to confuse between the two? (5 x 8 = 40)

इरादा और क्षमता के बीच क्या अंतर है? कैसे हम गलती करते हैं?

इरादा और क्षमता के बीच क्या अंतर है? कैसे हम गलती करते हैं?

OR

What is the need of Value-Education?

मूल्य शिक्षा की क्या जरूरत है?

मूल्य शिक्षा की क्या जरूरत है?

8. In the light of activities of Self, explain the terms Pre-Conditioning, Sensation and Natural Acceptance.

स्वयं की गतिविधियों के प्रकाश में पूर्व-साव्यता, संवेदना और प्राकृतिक-स्वीकृति समझाओ। सवै दीआ गतीविधीआं दे प्रकाश में पूर्व-साव्यता, संवेदना और प्राकृतिक-स्वीकृति समझाओ। सवै दीआ गतीविधीआं दे प्रकाश में पूर्व-साव्यता, संवेदना और प्राकृतिक-स्वीकृति समझाओ।

OR

Human being is co-existence of Self and body, explain.

इंसान स्वयं और शरीर का सह-अस्तित्व है, समझाओ।

इंसान स्वयं और शरीर का सह-अस्तित्व है, समझाओ।

9. What is happiness? What is the wrong notion about attaining happiness? What are the problems faced due to the wrong notions about happiness and prosperity? सुख क्या है? खुशी को प्राप्त करने के बारे में गलत धारणा क्या है? सुख और समृद्धि के बारे में गलत धारणाओं के कारण क्या हैं? सुख और समृद्धि के बारे में गलत धारणाओं के कारण क्या हैं?

सुख क्या है? खुशी को प्राप्त करने के बारे में गलत धारणा क्या है? सुख और समृद्धि के बारे में गलत धारणाओं के कारण क्या हैं? सुख और समृद्धि के बारे में गलत धारणाओं के कारण क्या हैं?

What are the programmes to ensure health?

स्वास्थ्य की सुनिश्चिता सुनिश्चित करने के लिए क्या कार्यक्रम हैं?

स्वास्थ्य की सुनिश्चिता सुनिश्चित करने के लिए क्या कार्यक्रम हैं?

10. What do you understand by competence in professional life? Illustrate

आप व्यावसायिक जीवन में क्षमता को क्या समझते हैं? उदाहरण दें।

आप व्यावसायिक जीवन में क्षमता को क्या समझते हैं? उदाहरण दें।

आप व्यावसायिक जीवन में क्षमता को क्या समझते हैं? उदाहरण दें।

OR

What are the implications of value based living in modern society?

मूल्य आधारित जीवन शैली के आधुनिक समाज में क्या प्रभाव हैं?

मूल्य आधारित जीवन शैली के आधुनिक समाज में क्या प्रभाव हैं?

मूल्य आधारित जीवन शैली के आधुनिक समाज में क्या प्रभाव हैं?

11. What are the problems we are facing today because of pre-conditioned desires?

पूर्व-साव्यता इच्छाओं के कारण हम आज क्या-क्या समस्याओं का सामना कर रहे हैं?

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4. Explain the structure of respiratory system.

Max. Marks : 75

INSTRUCTIONS TO CANDIDATES :

- 1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
- 2. SECTION-B contains THREE questions carrying TEN marks each and student has to attempt any TWO questions.
- 3. SECTION-C contains NINE questions carrying FIVE marks each and student has to attempt any SEVEN questions.

SECTION-A

- I. Answer briefly :
 - a. What are different neurotransmitters in the body?
 - b. What do you mean by depolarization, repolarization and hyperpolarization?
 - c. What is reflex arc?
 - d. Name the enzymes released from small intestine.
 - e. What are the functions of bile?
 - f. What is basal metabolic rate? Write its significance.
 - g. Explain one method of artificial respiration.
 - h. What are the functions of glomerulus, ureters and urethra?
 - i. What are the functions of LH?
 - j. What are enzymes required in transcription?

SECTION-C

- 5. What is cerebrospinal fluid? How is it formed? What are its functions?.
- 6. Explain the process of oogenesis.
- 7. Explain the role of kidney if acid -base regulation.
- 8. How is oxygen transported in the blood?
- 9. Explain the functions of insulin and glucagon.
- 10. Explain the process of regulation of respiration (neuronal method)?
- 11. Explain the process of protein synthesis.
- 12. What are the different types of neuroglia? Write their functions.
- 13. Explain the process of synaptic neurotransmission.



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1 M-74967

B.Pharma (2017 & Onwards) (Sem.-2)
HUMAN ANATOMY AND PHYSIOLOGY-II
 Subject Code : BP-201T
 M.Code : 74967

Time : 3 Hrs.

Max. Marks : 75

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains THREE questions carrying TEN marks each and student has to attempt any TWO questions.
3. SECTION-C contains NINE questions carrying FIVE marks each and student has to attempt any SEVEN questions.

SECTION-A

I. Answer briefly :

- a. What are different neurotransmitters in the body?
- b. What do you mean by depolarization, repolarization and hyperpolarization?
- c. What is reflex arc?
- d. Name the enzymes released from small intestine.
- e. What are the functions of bile?
- f. What is basal metabolic rate? Write its significance.
- g. Explain one method of artificial respiration.
- h. What are the functions of glomerulus, ureters and urethra?
- i. What are the functions of LH?
- j. What are enzymes required in transcription?

SECTION-B

2. Explain the structure of spinal cord. What are the functions of cerebellum?
3. Write the hormones released from hypothalamus. Write the functions of each.
4. Explain the structure of respiratory system.

SECTION-C

5. What is cerebrospinal fluid? How is it formed? What are its functions?
6. Explain the process of oogenesis.
7. Explain the role of kidney in acid-base regulation.
8. How is oxygen transported in the blood?
9. Explain the functions of insulin and glucagon.
10. Explain the process of regulation of respiration (neurological method)?
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Roll No.

Total No. of Questions : 10

Total No. of Pages : 02

B.Pharma (2012 to 2016) (Sem.2)

ANATOMY, PHYSIOLOGY AND HEALTH EDUCATION-I

Subject Code : BPHM-204

M.Code : 46214

Time : 3 Hrs.

Max. Marks : 80

INSTRUCTION TO CANDIDATES :

- SECTION-A is COMPULSORY consisting of FIFTEEN questions carrying TWO marks each.
- SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
- SECTION-C contains FOUR questions carrying TEN marks each and students have to attempt any THREE questions.

SECTION-A

- Discuss briefly :
 - Causative agents of measles and leprosy
 - Pacemaker
 - Synovial joint
 - Two characteristics of a muscle
 - Osteoblasts
 - Sarcomere
 - Cardiac output
 - Blood coagulation
 - Two special joint movements
 - Rabies
 - Electrocardiogram

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- Lymphomas
- Osteoporosis
- Poliomyelitis
- Red blood cell

SECTION-B

- Classify blood group. What is the clinical significance of blood group typing?
- Enlist the functions of :
 - Lymphatic system
 - Cell membrane
- Briefly discuss the causative agents and modes of transmission of following :
 - AIDS
 - Tuberculosis
- Draw a well labelled diagram of a :
 - Neuron
 - Human heart
- Differentiate between cardiac muscle tissue and smooth muscle tissue.

SECTION-C

- Describe the physiology of skeletal muscle contraction.
- Classify and describe connective tissues along with their characteristics.
- Define Blood Pressure. Discuss the neural and renal regulation of blood pressure.
- Write short notes on :
 - Spongy bone
 - Structure of cell and its components

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Total No. of Questions : 10

Total No. of Pages : 02

**B.Pharma (2012 to 2016) (Sem.-2)
PHARMACEUTICAL CHEMISTRY-III (Organic Chemistry)**

Subject Code : BPHM-203

M.Code : 46213

Time : 3 Hrs.

Max. Marks : 80

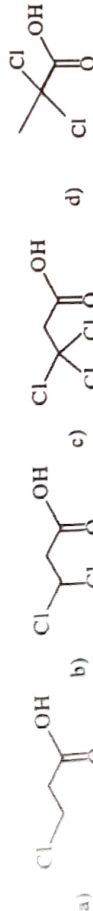
INSTRUCTION TO CANDIDATES :

- SECTION-A is COMPULSORY consisting of FIFTEEN questions carrying TWO marks each.
- SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
- SECTION-C contains FOUR questions carrying TEN marks each and students have to attempt any THREE questions.

SECTION-A

Q1. Answer briefly :

- Write the names and structures of isomers of C_5H_{12} .
- Differentiate between protic and aprotic solvents.
- Discuss the Hofmann elimination reaction with example.
- Why amides are the least reactive?
- What are lewis acid and lewis base?
- Define the enantiomerism.
- Why methylamine is more basic than aniline?
- Write down the Lucas's test.
- Write down the acidic order in the following acids with explanation.



j. Identify A and B in the following equation.



k. Write down necessary conditions for aromaticity.

- Why C-O bond in phenol is smaller than alcohol?
- Why does benzoic acid not undergo Friedel-Crafts Reaction?
- Write down the equations for Reimer-Tiemann reaction and Kolbe Schmidt reaction.
- Describe banana bond.

SECTION-B

- Write down the mechanism of Hofmann rearrangement.
- Discuss the basicity of amines with suitable examples.
- Write down the formation of diazonium salt and its synthetic applications.
- Discuss the Aldol condensation.
- Discuss the stability of carbocation.

SECTION-C

- Discuss the S_N1 and S_N2 reactions and suggest the factors affecting them.
- Write note on the following :
 - Markownikoff Rule
 - Ozonolysis of alkene
- Describe the Friedel Crafts alkylation reaction. What is its limitation?
 - Write down the general mechanism for electrophilic aromatic substitution.
 - What is Baeyer strain theory? Outline its limitations.

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Disc-2019

Roll No.

Total No. of Questions : 13

Total No. of Pages : 02

**B.Pharma (2017 & Onwards) (Sem.-2)
PHARMACEUTICAL ORGANIC CHEMISTRY-I**

Subject Code : BP-202T

M.Code : 74968

Time : 3 Hrs.

Max. Marks : 75

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains THREE questions carrying TEN marks each and student has to attempt any TWO questions.
3. SECTION-C contains NINE questions carrying FIVE marks each and student has to attempt any SEVEN questions.

SECTION-A

1. Briefly write about the following :
 - (a) Define and classify organic compounds.
 - (b) Give structure and uses of Glycerol.
 - (c) What are qualitative test for carboxylic acid?
 - (d) What is effect of substituents on basicity of aliphatic amines?
 - (e) What is ozonolysis?
 - (f) What are structural isomerism?
 - (g) What are carbocations?
 - (h) Write structure and uses of Chloral hydrate.
 - (i) Write chemical structures of tartaric acid and lactic acid.
 - (j) What is electromeric effect?



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SECTION-B

2. Compare and contrast E1 versus E2 with respect to mechanism, kinetics, orientation and reactivity.
3. Write the mechanism involved in aldol condensation, Benzoin condensation and Perkin condensation.
4. Write qualitative test, structures and uses of ethanalamine, ethylenediamine and anphetamine.

SECTION-C

5. Write in detail about halogenation of alkanes.
6. Discuss free radical addition reactions of conjugated dienes.
7. Give an account on SN1 and SN2 reactions.
8. Discuss structure and uses of chloroform and iodoform.
9. Write qualitative tests, structure and uses of ethyl alcohol.
10. Write important uses of paraldehyde, vanillin and cinnamaldehyde.
11. Explain Cannizzaro and Crossed Cannizzaro reaction.
12. Discuss Markownikoff's orientation as well as Anti-Markownikoff's orientation.
13. Write down brief note on Methyl salicylate and Acetyl salicylic acid.

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Roll No.

Total No. of Questions : 10

Total No. of Pages : 02

B. Pharma (2012 to 2016) (Sem.-2)
PHARMACEUTICS-II (Hospital Pharmacy)
Subject Code : BPHM-205
M.Code : 46215

Time : 3 Hrs.

Max. Marks : 80

INSTRUCTION TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of FIFTEEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains FOUR questions carrying TEN marks each and students have to attempt any THREE questions.

SECTION-A

Q1. Write briefly :

- a) Drug store organization.
- b) Principles of inventory control
- c) Inpatient dispensing
- d) Master formula card
- e) HEPA FILTERS
- f) MEDLINE
- g) Medication error
- h) Adverse drug reactions
- i) Radio pharmaceuticals
- j) Radioactivity, its units and permissible radiation dose levels

- k) Steam sterilization
- l) Hospital pharmacy
- m) Drug dispensing of controlled drugs
- n) Budget preparation of hospital pharmacy
- o) Patient medication profile

SECTION-B

Q2. What are the responsibilities of a hospital pharmacist?

Q3. What are types of drug distribution systems? What are the methods adopted for dispensing of drugs to outpatients?

Q4. What is organization of a drug store? Which types of materials are stocked and what are the storage conditions?

Q5. What is sterilization? How are materials packed prior to sterilization?

Q6. What are pharmacokinetic drug interactions? Explain with examples.

SECTION-C

Q7. What are radiation hazards and mention in detail about their prevention?

Q8. What are the specifications for radio-active laboratory?

Q9. Write in detail about the organization of a hospital pharmacy.

Q10. Write in detail about the role of drug information services in hospital pharmacy.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.



Disc-2015

Roll No

Total No. of Questions : 10

Total No. of Pages : 02

**B. Pharma (2012 to 2016) (Sem.-2)
PHARMACEUTICS-I
(Dispensing & Community Pharmacy)
Subject Code : BPHM-201
M.Code : 46211**

Time : 3 Hrs.

Max. Marks : 80

INSTRUCTION TO CANDIDATES :

- SECTION-A is COMPULSORY consisting of FIFTEEN questions carrying TWO marks each.
- SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
- SECTION-C contains FOUR questions carrying TEN marks each and students have to attempt any THREE questions.

SECTION-A

- write briefly :
 - Name the various sources of error in prescription.
 - What is proof spirit?
 - What is displacement value?
 - Name the bulk powders which are used externally. Write in briefly about dusting powders.
 - What are mixtures? Classify different types of mixtures.
 - Differentiate between pastes and jellies.
 - Give the various reasons which cause phase inversion of emulsion.
 - What are throat paints? Why is glycerin used as a base in throat paints?
 - What are ointments? Name different ointment bases which are used for the preparation of ointment.
 - Define the term suppositories. What are advantages and disadvantages of theobroma oil as suppository base?
 - Differentiate between eye drops and eye lotion.

- What is chemical incompatibility? Explain with examples
- What is community pharmacy?
- What is special labeling instruction for liniments?
- What is Clark's formula? Why it is used?

SECTION-B

- Calculate the volume of each of 90%, 60%, 30% and water are required to produce 500 ml of 50% alcohol.
- Find the strength of 95% v/v alcohol in terms of proof spirit.
- What are creams? Name various types of creams. Discuss in brief, about soap creams and storage of creams.
- Discuss in brief about the method of preparation of tablet triturates. How are these packed and stored?
- Define pill. Write the method of preparation of pills.
- What are capsules? Give its advantages and disadvantages. Write briefly about hard gelatin capsule.

SECTION-C

- Define incompatibility. What are different types of incompatibilities? Explain in detail with examples.
- Discuss the role of pharmacist in community healthcare and education.
- Explain the term 'prescription'. Discuss the procedure which should be followed by a pharmacist while handling the prescription for compounding and dispensing.
- Define the term 'eye drops'. Describe in brief, the formulation of eye drops. What are the various adjuvants used in the preparation of eye-drops?

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Roll No.

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Total No. of Questions : 13

Total No. of Pages : 02

B. Pharma (2017 & Onwards) (Sem.-2)
PATHOPHYSIOLOGY
Subject Code : BP-204T
M.Code : 74970

Time : 3 Hrs.

INSTRUCTIONS TO CANDIDATES :

- SECTION-A is **COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
- SECTION-B contains **THREE** questions carrying **TWO** marks has to attempt any **TWO** questions.
- SECTION-C contains **NINE** questions carrying **FIVE** marks each and student to attempt any **SEVEN** questions.

Max. Marks : 75

SECTION-A

- Answer briefly :
 - Write three characteristic features of chronic inflammation.
 - Write any one biochemical theory of anxiety.
 - How ischemia may produce cell injury?
 - What are the morphological changes in irreversibly injured cell?
 - What are protooncogenes and oncogenes?
 - Differentiate stroke and myocardial infarction.
 - What is rheumatoid arthritis?
 - What are the key differences between syphilis and gonorrhoea?
 - What do you mean by hemophilia?
 - What are the characteristic features of jaundice?

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SECTION-B

- What is epilepsy? What are its different types? What are the different theories that explain the development of epilepsy?
- What is AIDS? Write its etiology, pathogenesis, clinical stages and opportunistic infection that may occur in AIDS patients.
- What is inflammatory bowel disease? Explain its types, pathogenesis and clinical symptoms.

SECTION-C

- What is meningitis? What are the different causative microorganisms and clinical symptoms of the disease?
- Write a note on iron deficiency anemia.
- What is Alzheimer disease? Write the clinical symptoms.
- Write a brief note on Grave's disease.
- What is osteoarthritis? What are its key characteristic features? How is it different from osteoporosis?
- What is chronic renal failure? Write its etiology. What are the tests that may help in its clinical diagnosis?
- Explain the cellular changes occurring in acute inflammation.
- What are atrophy, hypertrophy, and cytoplasm?
- What is myocardial infarction? What are its different types?

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Roll No. _____

Total No. of Questions : 10

Total No. of Pages : 02

**B. Pharma (2011 to 2016) (Sem.-2)
 PHARMACEUTICAL CHEMISTRY-II (Physical Chemistry)
 Subject Code : BPHM-202
 M.Code : 46212**

Time : 3 Hrs.

Max. Marks : 80

INSTRUCTION TO CANDIDATES :

- SECTION-A is COMPULSORY consisting of FIFTEEN questions carrying TWO marks each.
- SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
- SECTION-C contains FOUR questions carrying TEN marks each and students have to attempt any THREE questions.

SECTION-A

1. Explain in brief :

- What is Boyle's law?
- Explain the term liquid state.
- Define the term order of reaction. What are its units?
- Define complex reactions.
- What are ideal and non-ideal solutions?

f) What is osmotic pressure?

g) Define viscosity.

h) Define surface tension.

i) Explain quantum efficiency.

j) Define dipole moment. Mention dipole moment of carbon dioxide.

k) Explain enzyme catalysis.

l) What is parachor?

m) What is Schrodinger wave equation?

n) Define quantum mechanics.

o) What are thermodynamics?

SECTION-B

2. Write detailed note on theories of reaction.

3. Explain the terms optical rotation and partition coefficients with suitable examples.

4. Define homogenous catalysis? Give three examples of homogeneous catalysis each in gaseous phase.

5. Define the term order of reaction. How does rate law differ from law of mass action?

6. Give five postulates of quantum mechanics.

SECTION-C

7. Starting from basic postulates of kinetic theory of gases. Derive kinetic gas equation.

8. Write Michaelis-Menten equation. Explain the symbol used. How can maximum velocity determined?

9. What are consequences of light absorption? Discuss in detail Jablonski diagram.

10. Discuss Freudlich and Gibbs adsorption. What is Langmuir theory of adsorption?

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SECTION-B

- Describe structure and discuss various functions of the liver
- Discuss physiology of anterior pituitary hormones.
- With the help of a neat diagram explain structure of nephron.

SECTION-C

- What is reflex action? Describe physiology of reflex action.
- Write a note on formation and functions of ATP.
- Write a note on mechanism of respiration.
- Explain various phases of menstruation cycle.
- Write a note on physiological role of thyroid hormones.
- Draw neat and labeled diagram of female reproductive system.
- Write a brief note on protein synthesis.
- Write a note on artificial respiration.
- Write a short note on anatomy and physiology of small intestine.

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Total No. of Pages : 02

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Total No. of Questions : 13

B.Pharma (2017 & Onwards) (Sem.-2)
HUMAN ANATOMY AND PHYSIOLOGY-II
 Subject Code : BP-201T
 M.Code : 74967

Max. Marks : 75

Time : 3 Hrs.

INSTRUCTIONS TO CANDIDATES :

- SECTION-A is **COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
- SECTION-B contains **THREE** questions carrying **TEN** marks each and student has to attempt any **TWO** questions.
- SECTION-C contains **NINE** questions carrying **FIVE** marks each and student has to attempt any **SEVEN** questions.

SECTION-A

1. Answer briefly :

- What is digestive system? Mention various processes of the digestive system.
- What is peptic ulcer?
- What is BMR?
- What is forced inspiration and forced expiration?
- What is Cushing's syndrome?
- Enlist various organs of the urinary system.
- What are posterior pituitary hormones?
- What is spermatogenesis?
- What is reflex-action?
- What is negative feedback mechanism in hormone regulation?

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Total No. of Questions : 10

Total No. of Pages : 02

B.Pharma (2011 to 2016) (Sem.-2)
PHARMACEUTICS-I
(Dispensing & Community Pharmacy)
Subject Code : BPHM-201
M.Code : 46211

Time : 3 Hrs.

Max. Marks : 80

INSTRUCTION TO CANDIDATES :

- SECTION-A is COMPULSORY consisting of FIFTEEN questions carrying TWO marks each.
- SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
- SECTION-C contains FOUR questions carrying TEN marks each and students have to attempt any THREE questions.

SECTION-A

1. Define :

- Aromatic water
- Young's formula
- Suspension
- Proprietary products
- Therapeutic incompatibility
- Syrup
- Deliquescent powders
- Eutectic mixture
- Difference between cream and paste
- Difference between throat paint and mouth washes

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k) Enlarging and reducing the prescription

l) Types of drug stores

m) Suppositories

n) Liniments

o) Convert 90% v/v of alcohol into proof strength

SECTION-B

2. Discuss the parts of the prescription.

3. Why additional labels are required at the time of dispensing?

4. Differentiate between flocculated and deflocculated suspensions.

5. Discuss in detail the role of pharmacist in community health care.

6. 40 mg of a drug can be administered to an adult. What will be the dose for a 8 months old infant, child of 5 years of age and a boy of 13 years of age.

SECTION-C

7. Find the amount of sodium chloride to be included in 100 ml of 0.3% solution of zinc sulphate so that on dilution with an equal quantity of water it will be iso-osmotic with tissue fluids. (10)

8. a) Define incompatibility. Discuss chemical incompatibility with examples. (7)

b) Discuss the incompatibility of sodium salicylate with alkali bicarbonates and that of soluble salicylates with lemon syrup. (3)

9. a) Discuss the legal requirements for establishment and maintenance of drug store. (5)

b) Discuss the principle involved in dispensing of solutions. (5)

10. Discuss the principle and procedures involved in dispensing of suppositories. (10)

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Total No. of Pages : 02

Total No. of Questions : 10

B. Pharma (2011 to 2016) (Sem.-2)
PHARMACEUTICAL CHEMISTRY-III (Organic Chemistry)

Subject Code : BPHM-203

M.Code : 46213

Time : 3 Hrs.

Max. Marks : 80

INSTRUCTION TO CANDIDATES :

- SECTION-A is COMPULSORY consisting of FIFTEEN questions carrying TWO marks each.
- SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
- SECTION-C contains FOUR questions carrying TEN marks each and students have to attempt any THREE questions.

SECTION-A

1. Answer briefly :

- Bonding orbitals
- Debye
- sp^3 hybridization in ammonia
- Soft acid
- Intramolecular hydrogen bonding
- Secondary bonding
- Enantiomerism
- Resolution of racemic mixture
- Optical inactivity in meso compounds
- Geometry of carbanion ion
- Bimolecular elimination reactions
- Crown ethers
- Acidity constant of acids
- Mixed acid used for nitration of Benzene
- Acidity of picric acid

SECTION-B

- Explain concept stereoselectivity and stereospecificity with example of each.
- Explain any two reactions involving carbene reaction intermediate.
- Compare stereochemical aspect of SN1 and SN2 reactions in alkyl halide.
- Give two postulates of Baeyer's strain theory. What are its limitations?
- Explain the mechanism of electrophilic addition of hydrogen halide to unsymmetrically substituted alkenes.

SECTION-C

- Describe the preparation of alcohol by oxymercuration-demercuration of alkenes.
 - Williamson synthesis of ether is nucleophilic substitution reaction. Justify.
 - Explain the mechanism of Friedal Craft alkylation in Benzene.
- Explain the mechanism of nucleophilic addition in aldehyde by citing example of Aldol condensation.
 - Describe electrophilic substitution in Naphthalene.
 - Compare acidity of benzoic acid and phenol.
- Write chemical reactions for :
 - Sulfonation of benzene
 - Formation of acid by hydrolysis of nitrile.
 - Conversion of acid to acid chloride.
 - Formation of diazonium salt.
 - Formation of sodium salicylate from sodium phenoxide.



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Total No. of Pages : 02

Total No. of Questions : 13

B. Pharma (2017 & Onwards) (Sem.-2)

PATHOPHYSIOLOGY

Subject Code : BP-204T

M. Code : 74970

Time : 3 Hrs.

Max. Marks : 75

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains THREE questions carrying TEN marks each and student has to attempt any TWO questions.
3. SECTION-C contains NINE questions carrying FIVE marks each and student has to attempt any SEVEN questions.

SECTION-A

Q1. Answer the following :

1. What are the symptoms of tuberculosis?
2. Differentiate metastatic and dystrophic calcification.
3. Enlist cell injury causing agents.
4. What are the changes occurring in nucleolus during cell injury?
5. What is thalassemia?
6. What do you understand by ulcerative colitis?
7. What is absence seizure?
8. What is gonorrhoea?
9. What is leprosy?
10. What is jaundice? What are its different types?

SECTION-B

- Q2. What is atherosclerosis? Explain its pathogenesis along with clinical outcomes.
- Q3. Explain the different steps involved in cell injury during hypoxia or ischemia.
- Q4. What is bronchial asthma? Explain its pathogenesis along with clinical symptoms.

SECTION-C

- Q5. What is depression? What are its different types? Write its clinical symptoms?
- Q6. What is gout? How may it occur? What are the different clinical outcomes of gout?
- Q7. What do you understand by peptic ulceration? What are its different types? Write the clinical symptoms.
- Q8. What do you mean by chronic renal failure? What are the laboratory tests to identify renal failure? What are the agents that may contribute in the development of chronic renal failure?
- Q9. Write a note on different WBC events during acute inflammation.
- Q10. What are ischemic heart diseases? Write its clinical symptoms. What are the differences between angina pectoris and myocardial infarction?
- Q11. What is atrophy, hypertrophy, hyperplasia and metaplasia?
- Q12. Write a note on Alzheimer disease.
- Q13. What are carcinogenic agents, protooncogenes and oncogenes?

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Roll No.

Total No. of Pages : 02

Total No. of Questions : 10

B.Pharma (2011 to 2016) (Sem.2)
ANATOMY, PHYSIOLOGY AND HEALTH EDUCATION-I
Subject Code : BPHM-204
M.Code : 46214

Time : 3 Hrs.

Max. Marks : 80

INSTRUCTION TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of FIFTEEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains FOUR questions carrying TEN marks each and students have to attempt any THREE questions.

SECTION-A

1. Answer briefly :

1. What are the functions of spleen?
2. What is cardiac cycle?
3. What are the disorders related to platelets?
4. Classify different joints.
5. What is osteoarthritis?
6. What are the functions of mitochondria?
7. Classify different epithelial cells.
8. What is the role of calcium in muscle contraction?
9. What are different plasma proteins?
10. What are the functions of lymphatic system?
11. What are the different heart sounds?
12. What are the causative agents of measles and tuberculosis?
13. What are the tissues in the heart with automaticity?
14. What are the functions of heart valves?
15. What is significance of blood grouping?

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SECTION-B

2. Draw and label different components of a cell.
3. Explain the structure of synovial joint with diagram.
4. Explain the process of blood clotting.
5. What is blood pressure? How is it regulated in the body?
6. Write a brief note on influenza.

SECTION-C

7. Explain the process of skeletal and smooth muscle contraction.
8. Explain the working of heart in detail.
9. What is blood? What are its functions? What are its different components? Write the functions of different cells present in the blood.
10. Write a note on malaria.

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Roll No.

Total No. of Pages : 02

Total No. of Questions : 10

B. Pharma (2011 to 2016) (Sem.-2)
PHARMACEUTICS-II (Hospital Pharmacy)
Subject Code : BPHM-205
M. Code : 46215

Time : 3 Hrs.

Max. Marks : 80

INSTRUCTION TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of FIFTEEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains FOUR questions carrying TEN marks each and students have to attempt any THREE questions.

SECTION-A

1. Answer briefly :

- a) Classify hospitals based on specialty.
- b) Name inventory control techniques.
- c) Write two major functions of Pharmacy and Therapeutic Committee.
- d) Define Hospital Formulary System.
- e) Define and Classify Budget.
- f) Define Unit Dose Dispensing System.
- g) Write various causes of medication errors.
- h) Write two major radiation hazards.
- i) Define and describe food-drug interaction with a suitable example.
- j) Define ADR and idiosyncratic reactions.
- k) What is meant by 'MEDLINE'?

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- l) What is meant by the term 'Ambulatory'?
- m) Define Radioactive half life of a radiopharmaceutical.
- n) Define Charge and non-charge floor stock drugs.
- o) Write primary sources of data for retrieving drug information.

SECTION-B

2. Draw a neat and clean chart of hospital organization.
3. Describe the content and design of hospital formulary.
4. Describe the storage conditions required in a drug store.
5. Describe the handling of radiopharmaceuticals.
6. Describe the special purchase systems used by the pharmacy.

SECTION-C

7. Describe various sources of drug information. How MEDLINE is helpful in retrieving the information?
8. Define CSSU. Discuss various objectives and processing of CSSU.
9. Describe the in-patient and out-patient drug dispensing methods.
10. Describe various radiation hazards and methods for their prevention.

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Total No. of Pages : 02

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Total No. of Questions : 06

M.Pharmacy (Pharmaceutics) (2017 Batch) (Sem.-2)

COSMETIC & COSMECEUTICS

Subject Code : MPH-204T

M.Code : 74964

Max. Marks: 75

Time : 3 Hrs.

INSTRUCTIONS TO CANDIDATES :

1. Attempt any FIVE questions out of SIX questions.
2. Each question carries FIFTEEN marks.

1. a) Define the term cosmetic as per Drug and Cosmetics act 1964. 3
- b) What do you understand by the term prickly heat? 2
- c) Name any two herbal ingredients used in shampoos. 2
- d) Define the term keratolytics. Give two examples of keratolytic agents. 3
- e) What is the issue with the use of dioxane in cosmetics? 2
- f) Enlist the ingredients used in the preparation of toothpaste for sensitive teeth. 3
2. a) Which cosmetic products are prohibited to be imported under section 10 of the Drug and Cosmetics Act? 3
- b) What is the significance of labelling the cosmetic products? 2
- c) Explain in detail the procedure to obtain license for the manufacture of cosmetics. 7
- d) Give specific requirements of plant and equipment for the manufacture of lotions. 3
3. a) Explain the hair growth cycle with the help of a diagram. 5
- b) Explain the key changes that occur in the skin structure during acne and hyperpigmentation. 5

4. a) What do you understand by the term surfactant? Classify and give their application in the preparation of lotions. 2,3,4
- b) What factors affect the preservative efficacy of an antimicrobial agent? 3
- c) Explain the role of humectants in cosmetics. Give characteristics of an ideal humectant. 3
5. a) What are the various points that need to be considered before adding herbs into a cosmetic base? 4
- b) Explain various steps and ingredients used to formulate a herbal skin cream. 7
- c) What is the need of regulating the herbal cosmetics? 4
6. a) Distinguish between syndet bars and soap bars. 4
- b) Give in detail the ingredients used in the formulation of a toothpaste. 5
- c) Write a short note on : 3
- i) Skin toners 3
- ii) Mouth rinse 3



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Total No. of Pages : 02

Total No. of Questions : 13

**B. Pharma (2017 & Onwards) (Sem.-2)
PHARMACEUTICAL ORGANIC CHEMISTRY-I**

Subject Code : BP-202T

M. Code : 74968

Time : 3 Hrs.

Max. Marks : 75

INSTRUCTIONS TO CANDIDATES :

- SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
- SECTION-B contains THREE questions carrying TEN marks each and student has to attempt any TWO questions.
- SECTION-C contains NINE questions carrying FIVE marks each and student has to attempt any SEVEN questions.

SECTION-B

Q2. Comment upon following :

- Perkin condensation
- Crossed Cannizzaro reaction

Q3. Give the detailed comparison of SN1 and SN2 reactions with respect to their kinetics, reactivity and stereochemistry involved in various types of alkyl halides.

Q4. Comment upon the hybridisation and geometry of alkanes and alkenes. Discuss in detail various reactions of alkenes.

SECTION-C

Q5. Classify organic compounds. Give examples of each class.

Q6. Explain allylic rearrangement.

Q7. Give the mechanism of halogenation of alkanes.

Q8. How can we distinguish between various types of amines via qualitative tests?

Q9. Comment upon various factors affecting E1 and E2 reactions.

Q10. Give structure and uses of chloral hydrate and vanillin.

Q11. Enumerate various qualitative tests carried for the identification of amides and esters.

Q12. Explain the effect of inductive effect on acidity of carboxylic acids.

Q13. Differentiate between electromeric and inductive effect?

SECTION-A

Q1 Briefly write about the following :

- Define metamers. Give example.
- Draw the structure of 3-bromo-1-chloro cyclohexene.
- What is walden inversion?
- What are the uses of hexamine?
- Define Saytzeffs rule.
- Give the product of addition of HCl to 1,3-butadiene.
- Comment upon the uses of benzyloxybenzoate.
- Give chemical test to distinguish between propanal and propanone.
- Write the chemical equation when ethyl chloride reacts with aqueous KOH.
- Give the structure and use of cetosteryl alcohol.

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Roll No. _____

Total No. of Pages: 03

Total No. of Questions: 13

**B.Pharma (2017 Batch) (Sem. - 2)
Human Anatomy And Physiology-II**

**M Code: 74967
Subject Code: BP-201T
Paper ID: [74967]**

Time: 3 Hrs.

Max. Marks: 75

INSTRUCTIONS TO CANDIDATES:

- SECTION-A** is **COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
- SECTION-B** contains **THREE** questions carrying **TEN** marks each and students have to attempt any **TWO** questions.
- SECTION-C** contains **NINE** questions carrying **FIVE** marks each and students have to attempt any **SEVEN** questions.

SECTION A

- i) Cerebellum relates to:
 - Mesencephalon.
 - Diencephalon
 - Metencephalon.
 - Myelencephalon.
- ii) They all are true for spinal cord, except:
 - dorsal horn is purely sensory
 - dorsal root is purely sensory
 - dorsal ramus is purely sensory
 - spinal trunk is mixed.
- iii) Damage to the fundus would have the greatest effect on:
 - Mucus secretion
 - Pepsinogen secretion.
 - Gastrin secretion.
 - Histamine secretion.
- iv) Accessory digestive organs include:
 - Pharynx
 - Muscularis.
 - Sub-mucosa.
 - Serosa.
- v) The lowermost portion of the pharynx is the:
 - Oropharynx
 - Nasopharynx.
 - Laryngopharynx.
 - Pharyngeal tonsils.

- vi) What structure rests on the superior pole of each kidney?
 - Spleen
 - Transverse colon.
 - Adrenal gland
 - Duodenum.
- vii) Islets of Langerhans are found in:
 - Hypothalamus
 - Anterior Pituitary
 - Pancreas
 - Zona reticularis.
- viii) The primary target organ of aldosterone is:
 - Liver
 - Hypothalamus
 - Heart
 - None of these.
- ix) Term genome is used for:
 - Haploid set of chromosome
 - Diploid set of chromosome
 - Polyploid set of chromosome
 - Triploid set of chromosome
- x) Location of ovaries is:
 - Pelvic cavity
 - Thoracic cavity
 - Abdominal cavity
 - Scrotal sacs.

SECTION B

- How anterior pituitary is different from posterior pituitary? Discuss hormonal aspects of pituitary gland in detail. 70
- Write a detailed note on brain stem.
- Write a detailed note on menstruation and fertilization process.

SECTION C

- Define action potential. Briefly discuss nerve impulse conduction.
- Give a detailed classification of neurons and neuroglial cells.
- Write a short note on liver.
- Discuss regulation of respiration.

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9. Explain mechanism of gasses exchange.
10. Define gland and give a detailed classification of glands.
11. Write a note on islet of Langerhans.
12. Explain gametogenesis.
13. Why genetically identical cells are morphologically different? Explain with example.

Roll No.

Total No. of Questions : 10]

[Total No. of Pages : 02

B.Pharmacy (Sem. - 2nd)

PHARMACOGNOSY - II

SUBJECT CODE : PHM - 1.2.2 (2K9 Batch)

Paper ID : [D0143]

[Note : Please fill subject code and paper ID on OMR]

Time : 03 Hours

Maximum Marks : 80

Instruction to Candidates:

- 1) Section - A is **Compulsory**.
- 2) Attempt any **Four** questions from Section - B.
- 3) Attempt any **Three** questions from Section - C.

Section - A

Q1)

(15 × 2 = 30)

- a) Write down complete biological source and uses of Benzoin.
- b) Mention chemical test for screening of Cyanogenic Glycosides.
- c) Mention chemical test for screening of Flavonoids.
- d) What are chief constituents of valerian?
- e) What are pseudotannins?
- f) Write down diagnostic features of wool.
- g) Give two examples of natural colours.
- h) Which chromatographic methods can be used for screening phytoconstituents.
- i) Write uses of Myrobalan and Turmeric.
- j) What is Eucelle method?
- k) Give biological source of Kaolin.
- l) Differentiate terms extract, fraction and isolate.
- m) Explain the term Pharmaceutical Aids.
- n) What are ellagitannins?
- o) What are absorbable sutures?

Section - B

(4 × 5 = 20)

- Q2)** What are Balsams? Give biological source, chemical constituents and uses of Balsam of Tolu.
- Q3)** Write down biological source, diagnostic features and identification tests of Silk.
- Q4)** How can alkaloids be extracted from plant material? Write down general chemical tests for Alkaloids.
- Q5)** What are resins and resin combinations? Explain with examples.
- Q6)** Give biological source, chemical constituents and uses of Cinnamon?

Section - C

(3 × 10 = 30)

- Q7)** Explain in detail general methods of obtaining Volatile oil from plants.
- Q8)** Write short notes on :
- Cotton.
 - Sandalwood.
- Q9)** Write Pharmacognostic study of Podophyllum and Ginger.
- Q10)** Write short notes on :
- Pharmaceutical standards of fibre products.
 - Black catechu.

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