

Roll No.

Total No. of Questions : 13

Total No. of Pages : 02

**B.Pharm (Sem.-5)**  
**PHARMACEUTICAL JURISPRUDENCE-THEORY**

Subject Code : BP505T

M.Code : 76790

Date of Examination: 24-05-2023

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. Write a brief note on the following :

- a) Differentiate between adulterated and spurious drugs.
- b) Loan license
- c) Drug Abuse
- d) RMP
- e) Procedure for grant of approval of technical course by AICTE
- f) Rules for stocking & disposal of expired drugs
- g) Duties of a Government analyst
- h) Trends in drug legislation
- i) Collaborative research
- j) Illicit traffic

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**SECTION-B**

2. What are the qualifications for appointment of a drug inspector? Explain their duties and procedures.
3. State the purpose of the enactment and explain its provisions relating to "Experimentation on Animals "
4. What conditions are to be satisfied for obtaining loan licenses and repackaging license? What is the duration of such licenses? Mention the class of drugs for which such license cannot be issued.

**SECTION-C**

5. "In spite of enactment of Narcotics and Psychotropic substances Act and Rules contraband drugs are a serious threat to public health " Comment on this statement
6. Write a brief note on Mudaliar Committee
7. What is the purpose of code of ethics? How it helps the profession?
8. What is the significance of DPCO? How the prices of category I and category 2 formulations are revised?
9. Write a note on import of schedule C, CI and X drugs
10. Write a note on DTAB.
11. How the first and subsequent registers prepared and maintained?
12. Discuss the provisions of the rules relating to scrutiny of misleading advertisements related to drugs.
13. Give a brief account of labelling of patent and proprietary medicines.



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**B.Pharma (Sem.-5)**  
**INDUSTRIAL PHARMACY-I (THEORY)**

Subject Code : BP502T

M.Code : 76787

Date of Examination: 25-05-2023

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**

**I. Explain :**

- a) Amorphous solids
- b) Racemization
- c) Secondary Packaging
- d) BCS classification
- e) What is the need of Tablet coating?
- f) Differentiate between :
  - i) Partition coefficient and solubility
  - ii) Cream and emulsion.
- g) What is pilfer proof packaging.
- h) Some injections are hypertonic? Justify.
- i) Give label for sterile water for injection.
- j) Why granules are prepared before making tablets?

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**SECTION-B**

2. Explain sugar coating process of tablets along with its evaluation.
3. Explain the production of 5ml water for injection ampoules.
4. Write short note on :
  - a) Shampoos
  - b) Cold cream

**SECTION-C**

5. Explain the methods of determination of solubility.
6. Explain Tablet defects. Classify tablets with examples.
7. What are Aerosol formulations? Give their preparation and evaluation.
8. Enumerate design of tooth paste.
9. Explain preparation and evaluation of eye drops and contact lens solutions
10. Explain the formulation aspect of injections.
11. Explain principle, construction, and working of extruder pelletizer for the manufacturing of pellets.
12. Give Quality control tests of hard gelatin capsules to meet IP standards.
13. Explain the formulation of suspensions with examples.

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Total No. of Pages : 02

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B.Pharm (Sem.-5)  
**PHARMACOLOGY II-THEORY**  
Subject Code : BP503T  
M.Code : 76788  
Date of Examination : 29-05-2023

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. Write briefly :

- a. What are autacoids? Give examples.
- b. Define shock.
- c. How anti-hyperglycemic drugs are different from hypoglycemic drugs?
- d. What is substance-P?
- e. Define coagulation.
- f. What is ACTH?
- g. Enlist characteristic features of CHF.
- h. What is TIA?
- i. How hyperglycemia is different from diabetes?
- j. Classify anti-gout drugs.

**SECTION-B**

2. Define arrhythmia. Write detailed note on anti-arrhythmic drugs.
3. What are corticosteroids? Explain in detail.
4. Write a detailed note on NSAIDs.

**SECTION-C**

5. Classify bioassay in detail.
6. Outline oral hypoglycemic agents.
7. Enlist 5HT receptors and their antagonists.
8. Classify antihypertensive drugs.
9. What are plasma volume expanders?
10. What are fibrinolytics? Explain mechanism of action.
11. Classify anti-anginal drugs in detail.
12. Explain pharmacology of insulin.
13. Write a short note on drugs modulating actions of pituitary gland.

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**B.Pharma (Sem.-5)  
PHARMACOGNOSY AND PHYTOCHEMISTRY II-THEORY**

Subject Code : BP504T

M.Code : 76789

Date of Examination : 19-05-2023

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**

- Write briefly :
  - Write down the biological source and chemical constituents of OPIUM.
  - Write down the chemical constituents and uses of RUTA.
  - Write principles of Thin Layer chromatography.
  - Give therapeutic uses and commercial applications of CATECHU.
  - Give specific chemical tests for identification of CAFFEINE.
  - Write on industrial utilization of FORSKOLIN.
  - Give structure and uses of DIOSGENIN.
  - Which radioactive isotopes are utilized in investigation of Biogenetic studies?
  - Give applications of IR Spectroscopy in identification of crude drugs.
  - Differentiate between HPLC and GC.

**SECTION-B**

- Give a detailed pharmacognostic account on DIGITALIS
- Describe Acetate Mevalonate pathway in biogenesis of various secondary metabolites
- Explain industrial production, estimation and utilization of VINCRISTINE AND VINBLASTINE

**SECTION-C**

- Describe Amino acid pathway
- Write a note on Size Exclusion Chromatography
- Describe applications of HPTLC in evaluation of herbal drugs
- Explain method of isolation and analysis of Atropine.
- Describe method of industrial production and estimation of Artemisinin.
- Explain method of isolation and analysis of Reserpine
- What are Tannins? Give bioresources, chemical constituents and uses of Pterocarpus.
- Explain principle and applications of Microwave assisted extraction technique
- Write a note on Lignans.

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B.Pharmacy (Sem.-5)  
**MEDICINAL CHEMISTRY II - THEORY**  
 Subject Code : BP501T  
 M.Code : 76786  
 Date of Examination : 17-05-2023

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. Write briefly :

- Draw structure, give IUPAC name and the uses of Levocetizine.
- What are H<sub>2</sub> receptor antagonists?
- Draw structures and give IUPAC names of any two Purine based antimetabolite class of anticancer agents.
- What is the importance of ACE inhibitors in the cardiovascular disorder?
- What are potassium sparing diuretics?
- What is the importance of selectivity of compound towards  $\beta_2$  receptor blocking over  $\beta_1$ ?
- Name any four drugs used in the treatments of CHF.
- What are glucocorticoids?
- What are glucosidase inhibitors?
- What are glitazone?

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**SECTION-B**

- What are the limitations of anti-neoplastic agents? Classify these by citing at least two structural examples of each class.
- Classify anti-hypertensive agents with examples. Give synthesis and uses of methyldopa hydrochloride.
- Classify steroidal hormones giving structure of naturally occurring member and typical structure of each class.

**SECTION-C**

- Draw the structure of histamine and comment on distribution of histamine receptors in human body.
- Give the synthesis and important uses of diphenhydramine hydrochloride and promethazine hydrochloride.
- What are carbonic anhydrase inhibitors? Give uses and synthesis of acetazolamide.
- What are anticoagulants? Give IUPAC name and synthesis of warfarin.
- Write a short note on anti-thyroid drugs.
- Write a short note on selective phosphodiesterase enzyme - $\delta$  (PDE5) inhibitors.
- Give IUPAC name, synthesis and uses of tolbutamide.
- Describe amino benzoic acid-classes of local anaesthetics giving synthesis of benzocaine.
- Discuss calcium channel blockers which are used as anti-anginal drugs.

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**B. Pharma (Sem.-5)  
MEDICINAL CHEMISTRY II THEORY**

Subject Code : BP501T

M. Code : 76786

Date of Examination : 13-12-22

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**

- Write briefly :
  - Draw structure give IUPAC name and uses of Cetrizine.
  - What are typical structural features of H<sub>2</sub>-receptor antagonist?
  - Draw structures and give IUPAC names of any two pyrimidine based antimetabolite class of anticancer agents.
  - What is the importance of calcium channel blockers in the cardiovascular disorder?
  - What are loop diuretics?
  - Draw structures and give IUPAC names of any two selective (β<sub>2</sub>-blockers.
  - What are anticoagulants?
  - Define oral contraceptive by citing suitable examples.
  - What are mineralocorticoids?
  - Give name and structures of any two selective phosphodiesterase enzyme -5 (PDES) inhibitors?

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**SECTION-B**

- Classify H<sub>1</sub> receptor antagonist citing suitable example of each class. Give synthesis of Promethazine.
- Classify Local anaesthetic by citing suitable examples. Give detailed SAR of these drugs.
- Describe various classes of alkylating agents, which are used in the treatments of cancer. Give synthesis and mechanism of action of methotrexate.

**SECTION-C**

- Write short note on potassium pump inhibitors.
- Give synthesis and mechanism of chlorthalidide.
- What are anti-arrhythmic drugs? Classify these drugs with suitable examples.
- Discuss conformational analysis of 1,2-cyclopentanopentylhydrophenanthrene nucleus present in steroids.
- Give the structure of important thyroid hormones. Comment on physiological importance of these.
- Describe the structures and therapeutic importance of drugs used in erectile dysfunction.
- Write short note on anti-hyperlipidemic drugs.
- Discuss the structure and preparation of insulin.
- Write a short note on antibiotics which are used in cancer therapy.

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Roll No. 

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**B.Pharma (Sem.-5)**  
**PHARMACOLOGY II-THEORY**  
Subject Code : BP-503T  
M.Code : 76788  
Date of Examination : 17-12-22

Time : 3 Hrs.

Max. Marks : 75

**INSTRUCTIONS TO CANDIDATES :**

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3. SECTION-C contains NINE questions carrying FIVE marks each and student has to attempt any SEVEN questions.

**SECTION-A**

1. Write briefly :

- a) How anti-hypertensive drugs are different from hypotensive drugs? Give examples.
- b) How T3 is different from T4?
- c) Explain use of diuretics.
- d) Define angina.
- e) Which hormones regulate calcium level?
- f) What are plasma volume expanders?
- g) What are low molecular weight heparins?
- h) Classify antirheumatic drugs.
- i) What are anabolic steroids?
- j) What are leukotrienes?

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**SECTION-B**

2. Write a detailed note on oral hypoglycemic agents.
3. Outline electrophysiology of heart in detail.
4. Write a detailed note on bioassay of digitalis.

**SECTION-C**

5. Define and classify autocoids.
6. Explain hemodynamic.
7. Write a short note on substance-P.
8. Classify antihypertensive drugs.
9. Explain mechanism of uterine relaxants.
10. Write a short note on anabolic steroids.
11. Classify anti-arrhythmic drugs in detail.
12. Write a short note on fibrinolytics.
13. Outline drugs used in management of septic shock.

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**B.Pharma (Sem.-5)**  
**PHARMACOGNOSY AND PHYTOCHEMISTRY II-THEORY**

Subject Code : BP504T

M.Code : 76789

Date of Examination : 20-12-2022

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. Write briefly :

- Write down biological source and chemical constituents of **RAUWOLFIA**.
- Write down chemical constituents and uses of **LIQUORICE**.
- Write principles of paper chromatography.
- Give therapeutic uses and commercial applications of **GUGGUL**.
- Give specific chemical tests for identification of **QUININE**.
- Write on industrial utilization of **SENNOSIDES**.
- Give structure and uses of **PODOPHYLLOTOXIN**.
- Differentiate between **TLC** and **HPTLC**.
- Give applications of Spectroscopy in identification of crude drugs.
- Enumerate radioactive isotopes utilized in investigation of Biogenetic studies.

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**SECTION-B**

- Give a detailed pharmacognostic account on **OPTUM**.
- Describe Shikimic acid pathway in biogenesis of various secondary metabolites.
- Explain industrial production, estimation and utilization of **TAXOL**.

**SECTION-C**

- Describe Acetate malonate pathway.
- Write a note on Gel Electrophoresis.
- Describe applications of Gas chromatography in evaluation of herbal drugs.
- Explain method of isolation and analysis of **Curcumin**.
- Describe method of industrial production and estimation of **Diosgenin**.
- Explain method of isolation and analysis of **Rutin**.
- What are Iridoids? Give bioresources, chemical constituents and uses of **Gentian**.
- Explain principle and applications of Supercritical fluid extraction technique.
- Write a note on **Cinnamon**.

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Roll No.

Total No. of Questions : 13

Total No. of Pages : 02

**B.Pharma. (Sem.-5)**  
**PHARMACEUTICAL JURISPRUDENCE-THEORY**

Subject Code : BP505T

M.Code : 76790

Date of Examination : 22-12-2022

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. Define :**

- a) Trends in drug legislation
- b) Inspectors appointed by state as well as Central Council are eligible for renomination
- c) Procedure for grant of approval of technical course by AICTE
- d) Duties of a Government analyst.
- e) The conditions to issue restricted licenses
- f) Import of drugs for personal use
- g) Objective of Poison Act
- h) Sample label of Schedule C and C1 drugs
- i) Rules for stocking & disposal of expired drugs
- j) Qualifications of a drug inspector



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**SECTION-B**

2. How can the narcotic drugs be imported, exported and transhipped under the act? To what extent use of post office permitted for these purposes?
3. How the first and subsequent registers are prepared and maintained/ what qualifications would entitle a person to register his name in these registers
4. Give a brief account of Schedule M.

**SECTION-C**

5. What are the objectives of RTI Act? How does this act embrace the pharmaceutical profession?
6. Discuss the provisions of "The Prevention of Cruelty to Animals Act" regarding breeding and stocking of animals.
7. Write a note on fixation of ceiling price of a drug under certain circumstances.
8. Define the provisions of "The Drug and Magic Remedies Act" relating to scrutiny of misleading advertisements relating to drugs. How can an advertisement to be sent confidentially?
9. Discuss the provisions relating to manufacture of ayurvedic and homeopathic preparations containing alcohol. Can an ayurvedic practitioner manufacture alcoholic preparations for his own patients? How?
10. What is the purpose of code of ethics? How it helps the profession?
11. Write a brief note on Hathi Committee.
12. Discuss whether the termination of pregnancies under the following circumstances will be deemed legal or not :
  - a) Termination of pregnancy of a woman under 18.5 years without consent of her guardian.
  - b) Termination of a pregnancy at the residence of a RMP.
13. What is MAPE? How it is calculated? How the prices of category 1 and category 2 formulations are revised?

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Total No. of Pages : 02

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Total No. of Questions : 22

**B. Pharma (2017 Batch) (Sem.-5)  
PHARMACOGNOSY AND PHYTOCHEMISTRY II-THEORY**  
Subject Code : BP504T  
M. Code : 76789

Max. Marks : 75

Time : 3 Hrs.

**INSTRUCTIONS TO CANDIDATES :**

- SECTION-A** is **COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
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**SECTION-A**

Give short answers :

- What are Phenylpropanoids?
- How are Cardiac Glycosides Classified?
- What are Volatile Oils?
- Give the basic structure of tropane alkaloids.
- How can you isolate volatile oils from plants?
- Give the use and two major producers of taxol.
- What are Terpenoids? How are they classified?
- How will you identify if glycyrrhetic acid is present in a powdered plant material?
- What is the difference between flavones and isoflavones?
- Discuss the use of radioactive isotopes in the investigation of biosynthetic pathways.

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**SECTION-B**

- Describe the biosynthesis of cardiac glycosides.
- How do Chromatographic techniques help in isolation and purification of plant drugs?
- Give a detailed account on production and utilization of artemisinin and digoxin.

**SECTION-C**

- Write a detailed note on principal and applications of ultrasonic assisted extraction.
- Give the source, structure, isolation, identification and use of podophyllotoxin.
- Write a detailed note on classification, chemistry and uses of tannins.
- Describe the biosynthesis of terpenoids.
- Anthraquinone glycosides are medicinally as well as commercially important. support this statement with suitable examples.
- How do spectroscopic techniques help in the identification of phytoconstituents?
- Describe Isolation, Identification and analysis of rutin.
- Write a note on chemical nature, commercial and medicinal importance of volatile oils.
- What are Glycosides? How are they extracted from plants?

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Total No. of Questions : 22

B.Pharm (2017 Batch) (Sem.-5)  
PHARMACOLOGY II-THEORY

Subject Code : BP503T

M.Code : 76788

Max. Marks : 75

Time : 3 Hrs.

**INSTRUCTIONS TO CANDIDATES :**

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**SECTION-A**

**Write briefly :**

- 1. Write two side effects of aspirin.
- 2. Write two uses of oxytocin.
- 3. What are oral contraceptives?
- 4. What are the side effects of ACE inhibitors?
- 5. Write uses of antidiuretics.
- 6. Name class III anti-arrhythmic agents.
- 7. Write mechanism of action of statins.
- 8. What are the advantages of newer antihistaminics over older antihistaminics?
- 9. What is use of alteplase?
- 10. What are sulfonylureas used in diabetes?

**SECTION-B**

- 11. What are bioassays? Write its advantages and disadvantages. Classify its different types.
- 12. What are anti thyroid drugs? Write their mechanism of action, uses and side effects.
- 13. Write note on anti-gout drugs.

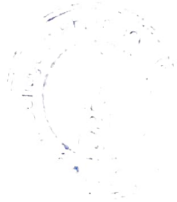
**SECTION-C**

- 14. Write a note on methotrexate.
- 15. What are leukotriene antagonists? Write their uses.
- 16. Write uses of antiplatelet agents.
- 17. How ACE inhibitors are useful in CHF?
- 18. Explain the use of beta blockers in hypertension.
- 19. Explain the mechanism of action of heparin.
- 20. Classify diuretics.
- 21. What are autocooids? Write a note on bradykinin and substance P.
- 22. What are the drugs used in anaphylactic shock? Explain their rationale.

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Roll No.

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B.Pharm (2017 Batch) (Sem.-5)  
**INDUSTRIAL PHARMACY-I (THEORY)**  
Subject Code : BP-502T  
M.Code : 76787

Time : 3 Hrs.

Max. Marks : 75

**INSTRUCTIONS TO CANDIDATES :**

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**SECTION-A**

**Define with examples :**

- Q1. Elixers
- Q2. Polymorphism
- Q3. What is BCS classification of drugs?
- Q4. Give Significance of tablet coating.
- Q5. Differentiate between pH and PKa
- Q6. Differentiate between Suspension and emulsion
- Q7. Give any two advantages and disadvantages of soft gelatin capsules over hard gelatin capsules.
- Q8. What is Isotonicity? Give its significance in parenteral formulations.
- Q9. Give lable for eye drop formulation.
- Q10. Give the uses of cold cream over vanishing cream.

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**SECTION-B**

- Q11. Enumerate preparation and evaluation of tablets.
- Q12. Explain the production of large volume parenterals.
- Q13. Write short note on :
  - a. Hair dyes
  - b. Lipsticks

**SECTION-C**

- Q14. Explain quality control tests of packaging materials.
- Q15. What are different types of aerosol systems?
- Q16. Give methods of preparation of shampoos and sunscreen preparations.
- Q17. Explain preparation and evaluation of eye ointments.
- Q18. Enumerate assential requirements for injectable formulations.
- Q19. Explain pelletization process.
- Q20. How soft gelatin capsules and hard gelatin capsules prepared?
- Q21. Explain how physicochemical properties effect preformulation aspect of formulation?
- Q22. Explain the formulation of liquid orals with examples.

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B.Pharma (2017 Batch) (Sem.-5)

**PHARMACEUTICAL JURISPRUDENCE-THEORY**

Subject Code : BP505T

M.Code : 76790

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**

**Define :**

- Q1. Schedule F
- Q2. What are the qualifications required to become Government Drug Analyst?
- Q3. Differentiate between adulterated and spurious drugs.
- Q4. Code of Ethics
- Q5. RMP
- Q6. Loan license
- Q7. Drug Abuse
- Q8. Full form of NLEM and DPCO
- Q9. IPR
- Q10. Psychotropic substances



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**SECTION-B**

- Q11. Describe the conditions imposed on import, export and shipment of narcotic substances according to Narcotics drugs and Psychotropic substances act.
- Q12. Describe the constitution of PCI. What are the education regulations and how are they implemented by PCI?
- Q13. State the purpose of the enactment and explain its provisions relating to "Experimentation on Animals."

**SECTION-C**

- Q14. What are the main objectives of Pharmacy Act, 1948?
- Q15. Discuss the significance of schedule MII.
- Q16. What are the special labeling requirements for class and nature of medicines in Schedule Gand Schedule X?
- Q17. Give a brief account of clinical trials for import or manufacture of new drugs.
- Q18. "In spite of enactment of Narcotics and Psychotropic substances Act and Rules, contraband drugs are a serious threat to public health." Comment on this statement.
- Q19. Write a note on import of schedule C, CI and X drugs.
- Q20. Write a brief note on Hathi Committee.
- Q21. Briefly discuss RTI.
- Q22. What is the significance of DPCO? How the prices of category 1 and category 2 formulations are revised?

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Roll No.

Total No. of Questions : 22

Total No. of Pages : 02

B.Pharma (2017 Batch) (Sem.-5)  
**PHARMACOGNOSY AND PHYTOCHEMISTRY II-THEORY**

Subject Code : BP504T

M.Code : 76789

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 students have to attempt any SEVEN questions.

**SECTION-A**

Give short answers :

What are Phenylpropanoids?

How are Cardiac Glycosides Classified?

What are Volatile Oils?

Give the basic structure of tropane alkaloids.

How can you isolate volatile oils from plants?

Give the use and two major producers of taxol.

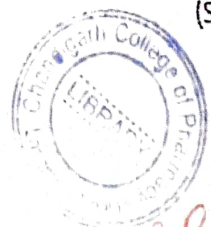
What are Terpenoids? How are they classified?

How will you identify if glycyrrhetic acid is present in a powdered plant material?

What is the difference between flavones and isoflavones?

Discuss the use of radioactive isotopes in the investigation of biosynthetic pathways.

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## SECTION-B

Describe the biosynthesis of cardiac glycosides.

How do Chromatographic techniques help in isolation and purification of plant drugs?

Give a detailed account on production and utilization of artemisinin and digoxin.

## SECTION-C

Write a detailed note on principal and applications of ultrasonic assisted extraction.

Give the source, structure, isolation, identification and use of podophyllotoxin.

Write a detailed note on classification, chemistry and uses of tannins.

Describe the biosynthesis of terpenoids.

Anthraquinone glycosides are medicinally as well as commercially important, support this statement with suitable examples.

How do spectroscopic techniques help in the identification of phytoconstituents?

Describe Isolation, Identification and analysis of rutin.

Write a note on chemical nature, commercial and medicinal importance of volatile oils.

What are Glycosides? How are they extracted from plants?

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Roll No.

Total No. of Pages : 02

Total No. of Questions : 22

B.Pharma (2017 Batch) (Sem.-5)

**PHARMACOLOGY II-THEORY**

Subject Code : BP503T

M.Code : 76788

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**

Write briefly :

1. Write two side effects of aspirin.
2. Write two uses of oxytocin.
3. What are oral contraceptives?
4. What are the side effects of ACE inhibitors?
5. Write uses of antidiuretics.
6. Name class III anti-arrhythmic agents.
7. Write mechanism of action of statins.
8. What are the advantages of newer antihistaminics over older antihistaminics?
9. What is use of alteplase?
10. What are sulfonylureas used in diabetes?

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### SECTION-B

11. What are bioassays? Write its advantages and disadvantages. Classify its different types.
12. What are anti thyroid drugs? Write their mechanism of action, uses and side effects.
13. Write note on anti-gout drugs.

### SECTION-C

14. Write a note on methotrexate.
15. What are leukotriene antagonists? Write their uses.
16. Write uses of antiplatelet agents.
17. How ACE inhibitors are useful in CHF?
18. Explain the use of beta blockers in hypertension.
19. Explain the mechanism of action of heparin.
20. Classify diuretics.
1. What are autocooids? Write a note on bradykinin and substance P.
2. What are the drugs used in anaphylactic shock? Explain their rationale.

**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 Pages : 03

Total No. of Questions : 22

B.Pharma (2017 Batch) (Sem.-5)  
**MEDICINAL CHEMISTRY II- THEORY**

Subject Code : BP-501T

M.Code : 76786

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 the correct option in the following objective type questions :

1. Enzymatic decarboxylation of histidine leads to the formation of \_\_\_\_\_  
A. Histamine      B. Dopamine      C. Serotonin      D. Noradrenaline
2. \_\_\_\_\_ is a aziridine ring containing antineoplastic agent.  
A. Melphalan      B. Chlorambucil      C. Busulfan      D. Thiotepa
3. Amyl nitrite is an ester of isoamyl alcohol with \_\_\_\_  
A. Nitric acid      B. Nitrous acid      C. Nitric oxide      D. Nitrous oxide
4. Site of action of carbonic anhydride inhibitor class of diuretic is \_\_\_\_\_  
A. Proximal tubule      B. Loop of Henle  
C. Distal Tubule      D. Collecting tubule
5. \_\_\_\_\_ is acyl-2-aminoimidazoline based selective  $\alpha_2$  adrenoceptors agonist  
A. Clonidine      B. Guanabenz      C. Guanfacine      D. L-Methyldopa

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6. \_\_\_\_\_ is an alkaloid isolated from cinchona bark and used as anti-arrhythmic drug
- A. Quinidine                                      B. Quinine  
C. Cinchonine                                     D. Cinchonidine
7. In  $5\alpha$ -steroids, ring A and B are fused together with \_\_\_\_\_ fashion
- A. Trans    B. Cis  
C. Anti    D. Syn
8. \_\_\_\_\_ is characteristic feature of progestogens
- A.  $\Delta^4$ -3-Keto                                        B. Aromatic ring A  
C. 17- $\beta$ -hydroxy                                    D. 11- $\beta$ -Hydroxy
9. Naturally occurring thyroid hormones possess the \_\_\_\_\_ alanine side chain
- A. L    B. D    C. L&D both                                      D. All of these
10. Which drug belongs to 2<sup>nd</sup> generation oral hypoglycemic agent?
- A. Glyburide    B. Tolbutamide  
C. Acetohexamide                                      D. Chlorpropamide

### SECTION-B

11. Classify antineoplastic agents with one structural examples of each. Give synthesis and MOA of mercaptopurine.
12. Discuss the development of angiotensin converting enzyme inhibitors for the treatment of hypertension. Give synthesis and MOA of methyl dopa hydrochloride.
13. a) Describe detailed SAR of local anesthetics.
- b) Give synthesis and MOA of procaine.



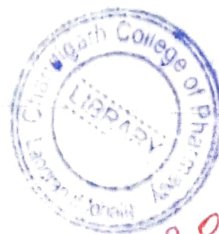
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### SECTION-C

14. Give structural classification of  $H_1$ -antagonist and synthesis of promethazine.
15. Write a note on calcium channel blockers used for the treatment of angina.
16. Draw structures of any three  $H_2$ -antagonists and give synthesis of any one of these.
17. Describe structures of thiazide class of diuretics. Give synthesis of chlorthiazide.
18. Discuss structures of cardiac glycoside used in the treatment of congestive heart failure.
19. Draw structures of any four anti-coagulants. Give structures of warfarin.
20. Describe typical structural feature of glucocorticoids and mineralocorticoids, citing two examples of each.
21. Give brief account on glucosidase inhibitors as anti-diabetic agents and synthesis of tolbutamide.
22. Write short note on oral contraceptives.

**OTE : 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

Roll No. \_\_\_\_\_  
Total No. of Questions : 10

B. Pharma (2012 to 2016) (Sem.-5)  
**PHARMACEUTICS-VII**  
(Biopharmaceutics & Pharmacokinetics)  
Subject Code : BPHM-505  
M.Code : 70431

Max. Marks : 80

Time : 3 Hrs.

**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 :

- Significance of plasma drug concentration time curve.
- What is a compartment model?
- Enlist factors affecting gastric emptying of drug.
- Enlist any two possible mechanisms of enzyme induction and enzyme inhibition.
- Significance of bioavailability studies.
- Give significance of tissue binding of drug.
- Flip-flop phenomenon.
- What is non linear pharmacokinetics?
- Hepatic clearance.
- Active transport systems.



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k. Define Volume of distribution.

l. What are the various sites of drug metabolism in the body?

m. Define Passive diffusion.

n. What do understand by mean residence time?

o. Write about characteristics of active transport?

**SECTION-B**

- Write a note on applications and limitations of compartment models.
- Write a short note on urinary excretion studies.
- Explain Zero order and first order absorption models.
- Explain Apparent volume of distribution and distribution co-efficient.
- Write a note on clearance. What is its unit?

**SECTION-C**

- Write short notes on :
  - Significance of plasma drug concentration measurement.
  - Lag time
- Discuss the assumptions, limitations and significance of pH- partition hypothesis.
- Describe various pharmacokinetic parameters and study designs used in BA/BE studies.
- Explain about Wagner-Neilson method and Loo-Rowe method.

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B. Pharma (2017 Batch) (Sem.-5)  
**PHARMACOGNOSY AND PHYTOCHEMISTRY II-THEORY**

Subject Code : BP504T  
 M.Code : 76789

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. Write briefly :

- Write down biological source and uses of CINNAMON.
- Give structure and identification tests of QUININE.
- Write down principle of Ultrasonic Extraction.
- Give utilization of DIOSGENIN.
- Write down biological source and chemical constituents of TEA.
- Give biological source and commercial applications of LIQUORICE.
- Write applications of Gas Chromatography.
- Describe steps of biosynthesis of Mevalonic acid from acetyl-CoA.
- Describe method of identification of Rutin.
- Discuss method of estimation of Sennosides.

**SECTION-B**

- Describe Shikimic acid pathway in the biosynthesis of various secondary metabolites.
- Explain method of isolation, identification and analysis of CURCUMIN
- Describe method of industrial production, estimation and utilization of ARTEMISININ.

**SECTION-C**

- Write down biological source, chemical constituents and therapeutic uses of DIOSCOREA and RAUWOLFIA.
- Describe principle and applications of Supercritical Fluid Extraction.
- Write down applications of Electrophoresis in isolation of crude drugs.
- Describe the role of radioactive isotopes in investigation of biogenetic pathway.
- What are IRIDOIDS? Give pharmacognostic account of GENTIAN.
- Explain method of isolation and identification of CITRAL.
- Write down biological source, chemical constituents and therapeutic uses of ASAFOTIDA and CATECHU.
- Describe method of industrial production and uses of TAXOL.
- Give a detailed pharmacognostic account on ALOES.

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*Dec-2019*

B.Pharm. (2012 to 2016) (Sem.-5)  
**PHARMACEUTICS-VI**  
 (Pharmaceutical Technology-I)  
 Subject Code : BPHM-502  
 M.Code : 70428

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 has 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 :**

- Name two stabilizers added to liquid dosage forms.
- Why is sodium chloride added to shampoos?
- Differentiate between emollients and humectants.
- Define Plasma.

e) Enlist the essential quality controls for a parenteral products.

f) Differentiate between deodorants and antiperspirants.

g) Role of mineral oil in cleansing cream.

h) Define Propellants with examples.

i) What do you understand by the term displacement value?

j) Define HLB.

k) What are hydrocarbon bases?

l) Name two preservatives added to emulsions.

m) Define slip in reference to face powders.

n) Give the constitution of whole human blood.

o) Name the active ingredients of anti-acne products.

**SECTION-B**

Write short notes on :

2. Stability problems of emulsions.

3. Formulations characteristics of semisolids.

4. Plasma substitutes.

5. Formulation of antiperspirants

6. Evaluation of ophthalmic products.

**SECTION-C**

7. Discuss in detail the process of collection, processing and storage of human fibrinogen and human thrombin.

8. Discuss in detail the formulation, preparation and packaging of lipsticks.

9. Discuss in detail the formulation of aerosols. Also discuss its pharmaceutical applications.

10. Discuss in details the formulation of calamine lotion only BPC.

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*Dec-2019*

**B. Pharma (2017 Batch) (Sem.-5)**  
**PHARMACEUTICAL JURISPRUDENCE-THEORY**

Subject Code : BP505T  
 M. Code : 76790

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**

- Define :
  - Schedule H
  - Patent or proprietary medicine
  - Differentiate between misbranded and spurious drugs
  - Import of new drugs
  - Registered pharmacist
  - Differentiate between manufacture in bond and outside bond
  - Psychotropic substances
  - Collaborative research
  - Advertisement
  - MAPE

**SECTION-B**

- Describe the conditions imposed on import, export and shipment of narcotic substances according to **Narcotics drugs and Psychotropic substances act**.
- Describe the constitution of **PCI**. What are the education regulations and how are they implemented by **PCI**?
- What conditions are to be satisfied for obtaining loan licenses and repackaging license? What is the duration of such licenses? Mention the class of drugs for which such license cannot be issued.

**SECTION-C**

- How the first and subsequent registers prepared and maintained?
- To whom restricted licenses can be issued and what are the conditions for such licenses?
- Discuss the provisions for manufacturing of ayurvedic and homeopathic preparations containing alcohol.
- Discuss the provisions of the rules relating to scrutiny of misleading advertisements related to drugs.
- Discuss the provisions of **DPCO** relating to price lists.
- What is the purpose of code of ethics? How it helps the profession?
- Write a brief note on **Hathi Committee**.
- Write a note on **DTAB**.
- Write a general labeling conditions of **Schedule C, Cl and X** conditions.

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Roll No.

Total No. of Questions : 13

Total No. of Pages : 02

**B.Pharma (2017 Batch) (Sem.-5)**  
**PHARMACOGNOSY AND PHYTOCHEMISTRY II-THEORY**  
Subject Code : BP504T  
M. Code : 76789

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. Write briefly :

- a) Write down biological source and uses of CINNAMON.
- b) Give structure and identification tests of QUININE.
- c) Write down principle of Ultrasonic Extraction.
- d) Give utilization of DIOSGENIN.
- e) Write down biological source and chemical constituents of TEA.
- f) Give biological source and commercial applications of LIQUORICE.
- g) Write applications of Gas Chromatography.
- h) Describe steps of biosynthesis of Mevalonic acid from acetyl-CoA.
- i) Describe method of identification of Rutin.
- j) Discuss method of estimation of Sennosides.

**SECTION-B**

2. Describe Shikimic acid pathway in the biosynthesis of various secondary metabolites.
3. Explain method of isolation, identification and analysis of CUCUMERIN.
4. Describe method of industrial production, estimation and utilization of AXTEMININ.

**SECTION-C**

5. Write down biological source, chemical constituents and therapeutic uses of DIOSCOREA and RAUWOLFIA.
6. Describe principle and applications of Supercritical Fluid Extraction.
7. Write down applications of Electrophoresis in isolation of crude drugs.
8. Describe the role of radioactive isotopes in investigation of biogenetic pathway.
9. What are IRIDOIDS? Give pharmacognostic account of GENTIAN.
10. Explain method of isolation and identification of CITRAL.
11. Write down biological source, chemical constituents and therapeutic uses of ASAFOTIDA and CATECHU.
12. Describe method of industrial production and uses of TAXOL.
13. Give a detailed pharmacognostic account on ALOES.

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Roll No.

Total No. of Questions : 10

Total No. of Pages : 02

B. Pharma (2012 to 2016) (Sem.-5)  
PHARMACOGNOSY-IV  
Subject Code : BPHM-504  
M.Code : 70430

Time : 3 Hrs.

**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 has to attempt any FOUR questions.
- SECTION-C contains FOUR questions carrying TEN marks each and students has to attempt any THREE questions.

Max. Marks : 80

**SECTION-A**

I Answer briefly/Fill in the blank :

- Draw the structures of atropine and pilocarpine.
- Give the biological source of the most common adulterant of belladonna. How will you differentiate it from genuine belladonna?
- Give identification tests for pepsin.
- Arrange the following chromatographic techniques in increasing order of the particle size of stationary phase generally used in them :  
HPLC, TLC, HPTLC, Column chromatography
- Draw chemical structure of reserpine and emetine.
- Give main chemical constituents (along with structures) of nuxvomica.
- Mayer's reagent is added to caffeine solution. What will be the result and why?
- Give examples of two plant bitters with their complete biological source and the bitter constituent present in them.
- What are oolong, green and yellow teas?
- Which is the most common adulterant of cinchona and how will you differentiate it from genuine drug?

- Give important uses of colchicum and kurchi.
- Give principle of dopler counter current chromatography
- Give biological source and one major use of Datura and solanum.
- Name two species of rauwolfia that are used as adulterants/allied species for *Rauwolfia serpentina*.
- Shikimic acid pathway lead to synthesis of ..... and ..... amino acids.

**SECTION-B**

- Write a detailed note on the chemical constituents (with structures) of tea.
- How different compounds get separated on a TLC plate? How TLC is different from HPTLC?
- Discuss the role of medicinal plants in national economy.
- Give an elaborated note on opium.
- How HPLC helps in evaluation of crude drugs? Explain with suitable examples.

**SECTION-C**

- Write an elaborated note on plant sweeteners.
- Discuss the chemical constituents (with structures) and uses of the following :
  - Ergot
  - Withania
- Give source, method of preparation, characters and uses of papain.
- Discuss about Aceate-Mevalonate Pathway. Also draw the complete pathway.

**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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**B. Pharma (2017 Batch) (Sem.-5)**  
**PHARMACOLOGY II-THEORY**  
Subject Code : BP503T  
M. Code : 76788

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 **TWO** marks 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**

- Write briefly :
  - Name two class-I anti-arrhythmic drugs.
  - Name two angiotensin receptors blockers used as anti-hypertensives.
  - How aspirin is useful as anti-platelet agent?
  - What is Ritodrine?
  - What are leukotrienes? Give examples.
  - What are Oxytocics? Give two examples.
  - What are anabolic steroids? Give two examples.
  - What are quantal and graded bio-assays?
  - What is nitrate tolerance?
  - What is finasteride?



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**SECTION-B**

- Write an exhaustive note on pharmacology of anti-anginal drugs.
- Classify oral hypoglycemic agents and discuss mechanism of action and side effects of sulphonyl ureas.
- Discuss pharmacology of fibrinolytics.

**SECTION-C**

- What is congestive heart failure? Discuss mechanism of action of digitalis in congestive heart failure.
- Add a note on HMG-CoA reductase inhibitors as anti-hyperlipidemic agents.
- Write a note on plasma volume expanders.
- Write a note on loop diuretics.
- Add a note on prostaglandins.
- Write a note on thioureas as anti-thyroid drugs.
- Add a brief note on anti-platelet drugs.
- Explain side effects of oral contraceptives.
- Add a note on bioassay of Insulin.

**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 : 10

B. Pharma (2012 to 2016) (Sem.-5)

PHARMACOLOGY-I

Subject Code : BPHM-503

M. Code : 70429

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. Write in brief the following :

- a) Define Prodrug with the help of example.
- b) Give two factors modifying drug absorption.
- c) Differentiate between tolerance and dependence.
- d) What is the significance of bioassay?
- e) Give two clinical uses of norepinephrine.
- f) Differentiate between synergism and antagonism.
- g) Define Clearance and give its formula.
- h) What is the clinical use of disulfiram?
- i) Give two disadvantages of intravenous route.
- j) Why Rofecoxib was withdrawn from the market?

k) Give two ideal properties of general anesthetics.

- l) Name two atypical antipsychotics.
- m) Why Dopamine is given in combination with carbidopa?
- n) Define Pharmacogenetics.
- o) Give two adverse effects of tricyclic antidepressants.

**SECTION-B**

2. Explain in detail the neurohumoral transmission in central nervous system.

3. Give the mechanism of action of :

- a) Lidocaine
  - b) Tubocurarine
4. Explain the following drug interactions :
- a) NSAIDs and high ceiling diuretics
  - b) MAO inhibitors and tyramine
5. Describe various factors modifying drug action.
6. Discuss general management of a poisoned patient.

**SECTION-C**

7. Classify antiparkinsonian drugs. Explain mechanism of action and adverse effects of each category.

8. Write a note on following :

- a) Atypical antipsychotics
  - b) Newer antiepileptics
9. Define Bioassay. Describe different types of bioassays.
10. Explain the mechanism of action, pharmacological actions, adverse effects and clinical uses of morphine.

**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-19*  
*2019*

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Roll No. \_\_\_\_\_

Total No. of Questions : 13

Total No. of Pages : 02

**B. Pharma (2017 Batch) (Sem.-5)  
INDUSTRIAL PHARMACY-I (THEORY)  
Subject Code : BP-502T  
M. Code : 76787**

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. Define :
  - a) Partition coefficient
  - b) Difference between Capping and lamination
  - c) Diagrammatic representation of BCS classification
  - d) Elixirs
  - e) Base adsorption
  - f) Pellets
  - g) Difference between SVP and LVP
  - h) Difference between vanishing cream and cold cream
  - i) Propellants
  - j) Rubber as a packaging material

**SECTION-B**

2. Explain the objectives of pre formulation studies. Describe the effect of drug excipient interaction, solubility and surface area in preformulation studies.
3. Discuss the additives and formulation of tablets by wet granulation method.
4. Enumerate different procedures of production of soft elatin capsules and discuss in detail the rotary die process with diagram.

**SECTION-C**

5. Discuss the significance of polymorphism in preformulation.
6. Enumerate quality control tests of tablets and discuss any one in detail.
7. Discuss the evaluation of any one official liquid orals.
8. Discuss the process of shell production of hard gelatin capsules.
9. Explain the formulation considerations with respect to ophthalmics.
10. How lipsticks are formulated?
11. Enumerate quality control tests of aerosols and discuss any two of them.
12. Discuss the factors that influence the choice of containers in pharmaceuticals.
13. Briefly discuss lyophilized parenterals.

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Roll No.

Total No. of Questions : 10

Total No. of Pages : 02

B.Pharma (2012 to 2016) (Sem.-5)  
**PHARMACEUTICAL CHEMISTRY-V**  
(Biochemistry)

Subject Code : BPHM-501  
M.Code : 70427

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**

- Explain in brief :
  - Define Isoenzyme and give suitable examples
  - Name and structure of two pyrimidine bases
  - Explain Entropy
  - What are amphibolic pathways?
  - Structure and functions of Cell membrane
  - Define Glycolysis
  - Give the name and structure of two sphingolipids.
  - Define reducing sugars and give examples.
  - Metabolic products of galactose.
  - Structure and Significance of thromboxanes

k. Name and structure of saturated fatty acids

- What is Glucogenolysis?
- What are Ketone bodies?
- Give Michaelis-Menten equation
- Difference between nucleotides and nucleosides.

**SECTION-B**

- Describe the biosynthesis of prostaglandins.
- Explain urea cycle and its significance.
- Write short note on ligand gated ion channels.
- Give porphyrin biosynthesis.
- Comment on "Oxidation of fatty acids".

**SECTION-C**

- Draw, explain and significance of citric acid cycle.
- Discuss the various transport phenomena across the cell membrane.
- Explain different type of protein structures in detail. Give the process of protein synthesis.
- Detail account on polymerase chain reactions.

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Roll No.

Total No. of Questions : 13

Total No. of Pages : 02

B.Pharma (2017 Batch) (Sem.-5)  
**MEDICINAL CHEMISTRY II- THEORY**  
Subject Code : BP-501T  
M.Code : 76786

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. Write briefly :

- Give the structure and chemical name of site II diuretic agent.
- What are the therapeutic uses of Buclizine hydrochloride?
- Give the name and structure of any one ACE inhibitor.
- Why nitro vasodilators are used in angina pectoris?
- What is the role of glucosidase enzyme? Give name of any one inhibitor.
- Give the structure of any two sex hormones.
- Give the structure of any one hydantoin derivative used as antiepileptic agent.
- What is the moa and use of lansoprazole?
- Outline the synthesis of benzocaine.
- Write the structure and chemical name of anticoagulant which is phenindione derivative.



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**SECTION-B**

- Classify Antimutagenic agents giving the structure of atleast one drug belonging to each category.
- Elaborate on the usage of plant products in treatment of cancers.
- Give the chemical name, moa, the synthetic procedure and uses of the following drugs:
  - Methyldopate hydrochloride
  - Furosemide
- Discuss in detail the chemistry of:
  - Corticosteroids
  - Drugs used in CHF

**SECTION-C**

- Explain the role of alpha and beta blockers in hypertension.
- Write a note on Second generation H1 antagonists.
- Write a short note on HMG coenzyme reductase inhibitors.
- Give the moa and synthesis of methotrexate.
- Comment upon "stereochemistry and nomenclature of steroids".
- Comment upon "the thiazolidine derivatives acting as antidiabetic agents".
- Discuss the chemistry of carbonic anhydrase inhibitors in detail.
- Classify Antiarrhythmic agents giving examples of each class.
- Give the SAR of benzoic acid derivatives acting as anaesthetic agents.

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Total No. of Pages : 02

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Total No. of Questions : 10

B.Pharma (2011 to 2016) (Sem.-5)  
**PHARMACEUTICAL CHEMISTRY-V**  
 (Biochemistry)  
 Subject Code : BPHM-501  
 M.Code : 70427

Max. Marks : 80

Time : 3 Hrs.

**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 has to attempt any FOUR questions.
- SECTION-C contains FOUR questions carrying TEN marks each and students has to attempt any THREE questions.

**SECTION-A**

- Explain in brief :
  - Passive diffusion.
  - Exocytosis
  - Reversible enzyme inhibitors
  - Holoenzymes
  - Gluconeogenesis
  - Endergonic reaction
  - General structure of phospholipids.
  - Structure of FAD and FADH<sub>2</sub>.
  - Hydrogen bonding base pairs in DNA.

**SECTION-B**

- Enumerate coenzyme of riboflavin. Write one reaction for each of them to illustrate their action.
- Write note on Michaelis-Menten equation.
- Describe various steps of ketogenesis.
- Describe structure and function of respiratory chain.
- Describe reactions of Urea cycle.

**SECTION-C**

- Describe metabolism of galactose and its inherited disorder.
- Discuss significance of ATP production.
- Diagrammatically describe De novo synthesis of long chain fatty acid.
- Describe biosynthesis of pyrimidine nucleotide.
- Write short notes on Any Two :
  - Recombined DNA technique
  - Genetic code
  - Formation of bile pigments



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May-2016