Roll No. | | | | | | | | | | |

Total No. of Pages : 02

Total No. of Questions : 13

B. Pharma (Sem.-6)

QUALITY ASSURANCE-THEORY

Subject Code : BP-606T

M.Code : 77991

Date of Examination : 16-05-23

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 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

1. **Define briefly :**

   a) Define TQM.

   b) Differentiate between ISO 9000 and ISO 14000.

   c) Define calibration and validation.

   d) What are the four quadrants of GLP?

   e) Write down **any two** parameters used for analytical method validation.

   f) What are SOPs?

   g) What is Batch formula record?

   h) Give the structure and uses of tartaric acid.

   i) What are the materials used for secondary packaging?

   j) Give the importance of quality control.

SECTION-B

2. Write a detailed note on design, plant layout, maintenance, sanitation and environmental control of manufacturing unit.

3. Discuss the role of Quality assurance department in equipment selection, framing purchase specifications, maintenance of stores and raw material.

4. Account for the following :

   a) Qualification of UV- Visible spectrophotometer

   b) Good warehousing practises.

SECTION-C

5. Comment upon general principles of calibration.

6. What should be the purchase specifications of any equipment?

7. Write upon the role of SOP in manufacturing unit.

8. Discuss about the handling of return good, recalling and waste disposal.

9. Enlist various quality control tests on containers. Explain hydrolytic resistance tests on glass.

10. Give the brief note on procedures of NABL accreditation.

11. Comment upon the importance of record keeping and reporting in GLP.

12. Write a brief note on various elements of Qbd program.

13. Comment upon the protocol for the conduct of non-clinical laboratory study.

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July-2023

Roll No. | | | | | | | | | | | | | Total No. of Pages : 02

Total No. of Questions : 13

B. Pharmacy (Sem.-6)

HERBAL DRUG TECHNOLOGY-THEORY

Subject Code : BP-603T

M.Code : 77988

Date of Examination : 18-05-2023

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 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

1. **Answer the following :**

   a. What are crude drugs and herbal medicines?

   b. What is GACP? What are biopesticides?

   c. What are churna and bhasma formulations?

   d. Give 2 examples of herb-drug interactions.

   e. What is the role of dietary fibres?

   f. What is the importance of schedule T and Z?

   g. Give 2 reasons for growth and 2 challenges faced by the Herbal drug industry.

   h. Can you get a patent for a plant which is studied for the first time? Give reasons for your answer.

   i. Give 2 examples of herbal colourants and herbal sweeteners.

   j. According to you what properties are essential for herbal drugs?

SECTION-B

2. Give a detailed account on the ideal conditions and requirements for cultivation and collection of medicinal plants.

3. What are nutraceuticals? How are they classified? What are the advantages and limitations of commercially available nutraceuticals?

4. Describe the GMP requirements and regulations for ASU drugs.

SECTION-C

5. Design a herbal skin care product which contains active ingredient and excipients of natural origin.

6. Write a note on the Indian herbal drug industry.

7. Discuss what can be patented and what cannot be patented while studying plants.

8. Compare conventional and novel herbal formulations.

9. Give a detailed account on use Ginger or Amla as nutraceutical.

10. Describe the process of preparation and standardization of Asavas and Arishthas.

11. Describe the process of developing a drug from herbs.

12. What is the role of herbal antioxidants in cosmetics?

13. Compare the WHO and ICH requirements for quality and stability assessment of herbal drugs.

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July-2023

Roll No. | | | | | | | | | | |

Total No. of Questions : 13

Total No. of Pages : 02

B.Pharmacy (Sem.-6)

MEDICINAL CHEMISTRY-III (THEORY)

Subject Code : BP-601T

M.Code : 77986

Date of Examination : 20-05-2023

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 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

1. **Answer Briefly :**

a) Give the mechanism of action and uses of ofloxacin.

b) Write down various steps involved in the synthesis of Isoniazid.

c) Name two Anthelmintic drugs obtained from natural origin.

d) Mention any two approaches used in drug design.

e) Give any two advantages of Prodrug approach.

f) Name the drugs used as first line therapy against tuberculosis.

g) Give the structure and moa of Trimethoprim.

h) Draw structure, give IUPAC name and use of chloroquine.

i) What is Hammet electronic parameter?

j) Write any two limitations of QSAR approach.

SECTION-B

2. Write the synthetic procedures for the following drugs

a) Chloramphenicol

b) Metronidazole

c) Sulphamethoxazole

d) Dapsone.

3. **Comment upon**

a) Moleculer docking techniques

b) Solid phase synthesis.

4. Classify Antiviral agents. Give examples of drugs belonging to each category. Elaborate anyone class of antiviral agents.

SECTION-C

5. Write the structure activity relationship of various tetracyclins.
6. Write a note on life cycle of malaria parasite.
7. Give structure, IUPAC name, moa and use of Tinidazole.
8. Write a short note on Beta lactamase inhibitors.
9. Discuss about chemical degradation of cephalosporins.
10. Comment upon the SAR of Quinolones as urinary tract Anti-infective agents.
11. Write structure of any five synthetic Antifungal agents.
12. Write a detailed note on folate reductase inhibitors.
13. Discuss about Macrolide class of antibiotics.

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July-2023

Roll No.

Total No. of Questions : 13

Total No. of Pages : 02

B.Pharma (Sem.-6)

PHARMACOLOGY-III-THEORY

Subject Code : BP-602T

M.Code : 77987

Date o Examination: 25-05-23

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 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

1. **Write briefly :**

   a. How expectorants are different from anti tussive agents.

   b. Name monoclonal antibodies used in bronchial asthma.

   c. Enlist anti-helicobacter pylori drugs.

   d. Define super-infection. Give examples.

   e. Cotrimoxazole is combination of what?

   f. Define biological clock.

   g. Enlist drugs used to treat post operative vomiting.

   h. Enlist third generation Cephalosporins.

   i. Define immunomodulators.

   j. Highlight management of antibiotic drug resistant.

(529)-1129

SECTION-B

2. Define peptic ulcers. Classify drugs used to treat peptic ulcer. Write therapeutic used, mechanism of action and adverse effect of ranitidine and omeprazole.

3. Define acute and sub acute toxicity. Write clinical symptoms and treatment of morphine and barbiturate poisoning.

4. What are anti microbial agents? Classify anti microbial agents. Give a note on drugs inhibiting protein synthesis.

SECTION-C

5. Write mechanism of action and adverse effects of Chloramphenicol.

6. Write life cycle of malaria parasite and drugs acting on different stages of cycle.

7. Write pharmacology of nitroimidazole.

8. What is COPD? Write clinical managements for COPD.

9. What are ORSs? Write formula of ORS according to WHO.

10. Write factors affecting choice of anti-microbial agents.

11. Differentiate concentration depending killing and time depending killing of bactericidal agents.

12. Classify sulfonamides and write their uses.

13. Write about the opioid and octreotide uses in diarrhea.

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July-2023

Roll No. | | | | | | | | | | |

Total No. of Questions : 13

Total No. of Pages : 02

B.Pharma (Sem.-6)

PHARMACEUTICAL BIOTECHNOLOGY-THEORY

Subject Code : BP-605T

M.Code : 77990

Date of Examination : 27-05-2023

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. **Explain the following terms in brief :**

   a. Biotechnology

   b. Genetic Engineering

   c. Enzymes

   d. Lipase

   e. Cloning

   f. ELISA

   g. Plasma

   Distinguish between :

   h. Vaccine and antibiotics

   i. Active and Passive immunity

   j. Toxin and Toxoid.

(529)-134

SECTION-B

2. Enumerate general methods for the production of enzymes.

3. Explain production of :

   a. Toxoid

   b. Serum immune blood derivatives.

4. Write short note on

   a. Hepatitis B vaccine

   b. Vitamine B12

SECTION-C

5. Explain the methods of enzyme immobilization.

6. What are biosensors. Explain its working.

7. Brief the application of recombinant DNA technology for the production of interferons.

8. Enumerate designing of biotransformation processes.

9. Give construction and working including controlling of parameters of a large scale fermenter.

10. Enumerate the method of collection, processing and storage of whole human blood.

11. Name various immune blotting techniques. Explain any one with example.

12. What is PCR? Give its applications.

13. Write short note on :

    a. Hybridoma technology

    b. Types of mutation.

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July-2023

Roll No. | | | | | | | | | | |

Total No. of Questions : 13

Total No. of Pages : 02

B.Pharmacy (Sem.-6)

BIOPHARMACEUTICS AND PHARMACOKINETICS-THEORY

Subject Code : BP-604T

M.Code : 77989

Date of Examination : 10-06-23

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 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

1. Write briefly :

a) What do you meant by renal clearance.

b) Name plasma protein involved in drug-protein binding of basic drugs.

c) What is absolute bioavailability.

d) What do you mean by rate of drug excretion?

e) What is MRT and what does it represent?

f) What are therapeutic equivalents?

g) What is active secretion in renal tubules?

h) Mention the formula for calculating $T_{1/2}$ of drug for first order kinetics.

i) What is pinocytosis?

j) What is facilitated transport?

SECTION-B

2. What is bioequivalence? Mention the criteria for declaring two products bioequivalent and discuss the regulatory considerations pertaining to bioequivalence studies in India.

3. A dose of 100 mg was given to a patient by IV bolus injection. After 30 days the serum drug concentration was found to be 75 mg/ml. Calculate K and T1/2 of the drug assuming first order kinetics.

4. Discus physicochemical factors influencing drug absorption after oral administration.

SECTION-C

5. How do the pKa of drug and the pH of the site influence the absorption of drugs?

6. Briefly discuss the in vitro-in vivo correlation methods.

7. Give a brief introduction of two-compartment model and explain the difference with one-compartment model.

8. What is the drug concentration in plasma at 4 hr after IV infusion at 5 mg/hr with DL of 10 mg. The T1/2 of the is 3 hr and Vd is 10L

9. Write briefly about hepatic extraction ratio.

10. Discuss the phase-I reactions for drug metabolism.

11. Discuss the calculation used to determine elimination rate constant from urinary excretion data.

12. Discuss the Wagner Nelson method with suitable equations.

13. Considering a IV bolus dose and simultaneous IV infusion, prove that for instantaneously achieving steady state a loading dose of R/K (infusion rate/elimination half-life) is necessary.

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July 2023

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Total No. of Pages : 02

Total No. of Questions : 13

B.Pharmacy (Sem.-6)

PHARMACOLOGY-III-THEORY

Subject Code : BP-602T

M.Code : 77987

Date of Examination : 07-01-23

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 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

1. **Answer the following :**

   a. Highlight management of antibiotic drug resistant.

   b. What is MDR in TB?

   c. Clotrimoxazole is a combination of?

   d. What are the adverse effects of sulfonamides?

   e. Name the drug of choice for aspirin induced asthma.

   f. Name the drug combination recently approved for maintenance treatment of COPD.

   g. Write monoclonal antibodies for Crohn's disease.

   h. Name the beta lactam antibiotic that can be used in patients having severe allergy to penicillins.

   i. Name the anti-cancer drugs act on G2 phase.

   j. What are macrolide antibiotics?

SECTION-B

2. Write a note on drugs decreasing acid secretions.

3. What are the different drugs inhibits cell wall synthesis? Write the mechanism of action, uses and adverse affects.

4. What is TB? Give a detail note on Anti-TB drugs. What is DOT?

SECTION-C

5. What are Immuno-suppressants? Write about proliferation signal inhibitors and calcineurin inhibitors.

6. Give a detail note on biosimilars.

7. Write about clinical management of morphine and arsenic poisoning.

8. Classify anti-emetic drugs and briefly explain about it.

9. Write about the drugs used for diarrhea.

10. What are cephalosporins? Write about their clinical uses and there side effects.

11. What is biological clock? Define rhythm, cycle and circadian rhythm.

12. Write a note on UTI.

13. Classify anti-asthmatic drugs.

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DEC-2022

Roll No. | | | | | | | | | | | | |

Total No. of Questions : 13

Total No. of Pages : 02

B.Pharm (Sem.-6)

HERBAL DRUG TECHNOLOGY-THEORY

Subject Code : BP-603T

M.Code : 77988

Date of Examination : 09-01-23

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 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

1. **Answer the following :**

   a) Write the functions of ASUDCC.

   b) What are the provisions of Breeder's Right?

   c) What are the objectives of Schedule T?

   d) Write about challenges in stability testing of herbal drugs.

   e) Write basic principles of Homoeopathic System of Medicine.

   f) Write two examples of Natural flavouring agents.

   g) Differentiate between Traditional and Non-traditional Nutraceutical products.

   h) Mention health benefits of Ginseng.

   i) What is the role of DNA in authentication of herbal material?

   j) Distinguish between Pharmacodynamic and Pharmacokinetic interactions.

SECTION-B

2. Explain briefly the process of patent filing. Discuss patenting aspects of traditional knowledge and natural products.

3. What are the advantages of novel dosage forms over conventional dosage forms? Discuss the method of preparation and applications of Phytosomes.

4. Discuss the role of nutraceuticals in management of Diabetes and Cancer.

SECTION-C

5. Discuss various components of Schedule T.

6. Give an account on plant based industries involved in work on medicinal and aromatic plants in India.

7. Explain interactions and side effects of Garlic.

8. Explain the role of herbs in skin care with special emphasis on Fixed oils and Antioxidants.

9. Give an overview about WHO guidelines for the assessment of herbal drugs.

10 Discuss the role of gums and mucilages as herbal excipients.

11. Mention steps involved in preparation of Arishtas and Asavas.

12. Define the term '*Herb*' as per WHO guidelines. Explain various sources of Herbs.

13. Write techniques used in Organic Farming.

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Total No. of Pages : 02

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B.Pharma (Sem.-6)

BIOPHARMACEUTICS AND PHARMACOKINETICS-THEORY

Subject Code : BP-604T

M.Code : 77989

Date of Examination : 10-01-23

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 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

1. **Write briefly :**

a) What do you mean by hepatic first pass metabolism.

b) What is active secretion?

c) What is absolute bioavailability?

d) Mention the formula for calculating T1/2 of drug for first order kinetics.

e) What is extraction ratio?

f) What is inulin clearance?

g) Give two examples of plasma proteins.

h) Define the properties of drugs belonging to BCS Class I & II.

i) What is the unit of Ka?

j) Mention the formula for calculating Vd from dose and Cp.

SECTION-B

2. Give a detailed account of the physiological factors influencing drug absorption.

3. IV bolus dose (4 mg / Kg) was administered to a patient of 75 kg weight. Following equation represented the drug kinetics:

$C_p = 78\ e^{-0.46t}$ Calculate: (a) T1/2; (b) Vd; (c) Plasma concentration after 4 hr.

4. What is meant by non-linear pharmacokinetics? Discuss the factors responsible for non-linear pharmacokinetics of drugs.

SECTION-C

5. Write briefly about facilitated and active transport of drugs.

6. Explain with the help of suitably equations the pharmacokinetics of a drug in plasma after IV administration that follows one compartment open model.

7. Discuss the regulatory considerations pertaining to bioequivalence studies in India.

8. Write briefly about protein binding of drugs.

9. What is Sigma-Minus method? Explain the method of calculating elimination rate constant by this method with the help of suitable equations.

10. Discuss the role of pKa of drug and pH of biological fluid in drug absorption.

11. Discuss the phase -1 reactions for drug metabolism.

12. Write a note on the approaches used for enhancing solubility and dissolution rates of poorly water soluble drugs.

13. Comment on in vitro - in vivo correlations.

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Total No. of Questions : 13

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B.Pharm (Sem.-6)

QUALITY ASSURANCE-THEORY

Subject Code : BP-606T

M.Code : 77991

Date of Examination : 03-01-23

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 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

1. **Define briefly :**

   a) TQM

   b) Quality by Design.

   c) Quality Audit.

   d) Accreditation

   e) Installation Qualification (IQ).

   f) Batch Formula Record.

   g) Performance Qualification (PQ).

   h) NABL.

   i) ISO 14000

   j) Contamination control in Sterile Area.

SECTION-B

2. What is ICH? What is the purpose of ICH guidelines? Explain briefly the various categories of ICH guidelines. Enlist various ICH Quality guidelines. Discuss the ICH stability testing guidelines.

3. Define Good Laboratory Practices (GLP). What are the objectives of GLP? Discuss the GLP provisions regarding the Organization and Personnel, Facilities, Equipment and testing facilities.

4. Discuss the role of quality assurance department in equipment selection, framing purchase specifications, maintenance of stores and raw materials.

SECTION-C

5. Differentiate between quality control and quality assurance.

6. Write an account on TQM.

7. What is GMP and cGMP? Discuss the benefits of GMP in pharmaceuticals.

8. Define calibration. Discuss the characteristics of calibration.

9. What is Master Formula Record? Give its contents.

10. What is product recall? Explain procedure of product recall.

11. Write an account on general principles of analytical method validation.

12. Discuss good warehousing practices.

13. Enlist various quality control tests on containers. Explain hydrolytic resistance test on glass.

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Roll No. ☐☐☐☐☐☐☐☐☐☐

Total No. of Questions : 13 Total No. of Pages : 02

B.Pharmacy (Sem.-6)

PHARMACEUTICAL BIOTECHNOLOGY-THEORY

Subject Code : BP605T

M.Code : 77990

Date of Examination : 11-01-23

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

I. Write briefly :

a. Applications of rDNA technology

b. Enzyme immobilization

c. Hypersensitivity reactions

d. Toxoids

e. Transposons

f. Role of aerator in fermentation

g. Dried plasma

h. Microbial biotransformation

i. Antigen

j. Immunization.

SECTION-B

2. Write a descriptive note on structure and functions of MHC.

3. Discuss in detail the applications of genetic engineering in the production of hepatitis C vaccine and hormones.

4. Write an explanatory note on variables that need to be controlled in a fermentation process.

SECTION-C

5. Illustrate the map of cloning vector.

6. Describe the applications of enzyme immobilization.

7. Differentiate between cell mediated and humoral immunity.

8. Write a note on the storage conditions of vaccines.

9. Differentiate between western blotting and Southern blotting.

10. Write a brief note on PCR.

11. Explain point mutations.

12. Describe the process of protein engineering.

13. Describe the production of bacterial vaccines.

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Roll No. | | | | | | | | | | | Total No. of Pages : 02

Total No. of Questions : 13

B.Pharmacy (Sem.-6)

MEDICINAL CHEMISTRY-III-THEORY

Subject Code : BP-601T

M.Code : 77986

Date of Examination : 05-01-23

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 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

1. Write briefly :

a) Give chemical structure and uses of acid resistant penicillin.

b) Write chemical structure and biological target of Clavulanic acid.

c) Write name and chemical structure of beta-lactamase resistant penicillin.

d) Write synthesis of Chloramphenicol.

e) Mention the electronic parameters used in QSAR.

f) Write the structure and uses of Niclosamide.

g) Write chemical structure and uses of Dapsone.

h) Give the synthesis of Isoniazid.

i) Draw structure and give mechanism of Rifampin.

j) Write the structure and uses of Clindamycin.

SECTION-B

2. What are aminoglycosides antibiotics? Write mode of action, structure, uses of streptomycin.

3. What are anti-protozoal agents? Give the structures of Iodoquinol and Metronidazole.

4. Write detailed note on HIV protease inhibitors by giving suitable examples.

SECTION-C

5. Explain prodrug concept and combinational chemistry in drug discovery.

6. Write tile SAR of sulpha drugs. Write the synthesis of Trimethoprim.

7. What are Antifungal drugs? Discuss in detail Clotrimazole and Ketoconazole.

8. Define and classify penicillins? Write the degradation products of penicillin.

9. Write SAR of quinolines? Write synthesis of Chloroquine.

10. Write SAR of Tetracyclins. Mention therapeutic uses, mode of action of Chloteracyclin.

11. Classify the Anthilmintics. Write the structure and uses of Mebendazole.

12. Define Macrolides? Give structure, mode of action and medicinal uses of azythromycin.

13. Define and classify Cephalosporins. Write the structures of cephalexin and cephalothin.

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Roll No. | | | | | | | | | | |

Total No. of Questions : 13 Total No. of Pages :02

B.Pharma (Sem.-6)

QUALITY ASSURANCE-THEORY

Subject Code :BP606T

M.Code : 77991

Date of Examination : 02-07-22

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 carryingTEN 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) Relation between QA, QC and GMP.

b) Batch Formula Record

c) Disqualification of testing facilities

d) Types of validation

e) Fish Bone diagram

f) Calibration of pH meter.

g) Quality documentation

h) Secondary Packaging material

i) Line clearance

j) Goodwarehousing practice

SECTION-B

2. ICHguidelines are divided into which major categories, enumerate them with codes andexplain guidelines for stability testing.
3. Define TQM. Discuss different components of TQM.
4. Discus general principle and scope of validation, its types and validation master plan.

SECTION-C

5. Define QBD. What are the different elements of QBD?
6. Enumerate different quality management tools and explain Pareto Analysis.
7. Explain Brackett design.
8. Briefly discuss ISO 9000.
9. What is the procedure of NABL Accreditation?
10. Discuss the significance of Environmental control.
11. What is the procedure of purchase of raw materials?
12. Discuss in brief QSEM.
13. Discuss quality control tests of rubber closures.

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.

June 2022

Roll No. | | | | | | | | | | |

Total No. of Questions : 13

Total No. of Pages : 02

B.Pharma (Sem.-6)

PHARMACOLOGY-III-THEORY

Subject Code : BP602T

M.Code : 77987

Date of Examination : 06-07-22

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 bulk laxatives? Give examples.

   b. What are nasal decongestants? Give examples.

   c. Highlight side effects of aminoglycosides.

   d. What is acute and sub-acute toxicity?

   e. What are biosimilars?

   f. What is chronotherapy?

   g. What is tamoxifen?

   h. Name two third generation cephalosporins.

   i. Name two drugs for urinary tract infections.

   j. What is amphotericin B? Indicate therapeutic uses of amphotericin B.

SECTION-B

2. Write an exhaustive note on anti-asthmatic drugs.

3. Classify fluoroquinolones and discuss pharmacology of ciprofloxacin.

4. Outline general principles of treatment of poisoning.

SECTION-C

5. Add a note on first line drugs for Tuberculosis.

6. Write a note on mechanism of action and side effects of sulfonamides.

7. Explain mechanism of action and side effects of aminoglycosides.

8. Write a note on proton pump inhibitors as anti-ulcer agents.

9. Write a brief note on anti-viral drugs.

10. Write a note on extended spectrum penicillins.

11. Add a note on symptoms and management of heavy metal poisoning.

12. What is biological clock? Describe various biological rhythms.

13. What are sexually transmitted diseases? Explain drug therapy of *Gonorrhea*.

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Jun-2022

Roll No. | | | | | | | | | | |

Total No. of Questions : 13

Total No. of Pages : 02

B.Pharma (Sem.-6)

HERBAL DRUG TECHNOLOGY-THEORY

Subject Code : BP603T

M.Code : 77988

Date of Examination : 08-07-22

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) Define the term Herbal Medicinal Product.

   (b) What are BIOPESTICIDES?

   (c) Describe method of preparation of CHURNA.

   (d) Write biological source and health benefits of ASHWAGANDHA.

   (e) Give biological source and side effects of GINKGO.

   (f) Describe method of preparation of PHYTOSOME.

   (g) Discuss patent issue of NEEM.

   (h) Distinguish between copyright and trademark.

   (i) Give biological source of any two herbal raw material used as colours in herbal cosmetics.

   (j) Name any two plant based industries involved in the production of standardized extracts in India.

SECTION-B

2. (a) Discuss the role of nutraceuticals in the management of CVS diseases.

   (b) Give pharmacokinetic and pharmacodynamic interactions of Hypericum with drugs.

3. Describe purpose of processing of herbal raw materials. Explain various primary and secondary processing procedures.

4. Describe WHO and ICH guidelines for the assessment of herbal drugs.

SECTION-C

5. Write a detailed note on Organic farming.

6. Describe method of preparation and standardization of Ghutika.

7. Write biological source and health benefits of :

   (a) AMLA

   (b) FENUGREEK

8. Describe various herbal substances used as BINDERS.

9. Give sources of herbal raw material used as antioxidants in skin care products.

10. Write a detailed note on stability testing of herbal drugs.

11. Give roles and responsibilities of ASU DTAB and ASU DCC.

12. What are the infrastructural requirements in herbal drug industry as per Schedule T?

13. Discuss present scope and future prospects of herbal drug industry.

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Roll No. | | | | | | | | | | | | Total No. of Pages :02

Total No. of Questions : 13

B.Pharma (Sem.-6)

BIOPHARMACEUTICS AND PHARMACOKINETICS THEORY

Subject Code :BP604T

M.Code : 77989

Date of Examination : 12-07-22

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 carryingTEN 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 is the importance of "Biopharmaceutical Studies"?

b) What is meant by hepatic first pass?

c) Why is volume of distribution called "apparent" and what is the unit of Vd?

d) Mention two examples of drugs that undergo extensive protein binding.

e) Enumerate the parameters indicative of rate of drug absorption and elimination.

f) Draw a typical two compartment plasma drug concentration - time curve after oral administration and label the pharmacokinetic parameters.

g) Differentiate between relative and absolute availability.

h) What is inulin clearance?

i) What are bioequivalent products?

j) What does creatinine clearance indicate?

June-2022

SECTION-B

2. Whatare the objectives of a bioequivalence trial? Discuss the protocol of a bioequivalence trial.

3. What is Non-Linear pharmacokinetics? Enumerate the reasons for non-linear pharmacokinetics and discuss its implications.

4. Discuss the different absorption processes and mention their limitations.

SECTION-C

5. Enumerate pharmaceutical factors influencing drug absorption and discuss any one in detail.

6. Write a note on protein binding and its clinical implications.

7. What are Phase - II reactions for drug metabolism? Give examples.

8. Differentiate between relative and absolute bioavailability.

9. Discuss the Wagner Nelson method with suitable equations.

10. Considering a IV bolus dose and simultaneous IV infusion, prove that for instantaneously achieving steady state a loading dose of R/K (infusion rate/elimination half-life) isnecessary.

11. Explain the MM Kinetics with the help of suitable equations. Mention the influence of MM kinetics on drug pharmacokinetics.

12. What is the drug concentration in plasma at 6 hr after IV infusion at 2 mg/hr with DL of 10 mg. The $T_{1/2}$ is 3 hr and V_d is 10L.

13. Comment on the methods employed for enhancing the dissolution rate of poorlysoluble drugs.

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Roll No. | | | | | | | | | | |

Total No. of Questions : 13

Total No. of Pages : 02

B.Pharma (Sem.-6)

PHARMACEUTICAL BIOTECHNOLOGY-THEORY

Subject Code : BP605T

M.Code : 77990

Date of Examination : 14-07-22

Time : 3 Hrs.

Max. Marks : 75

INSTRUCTIONS TO CANDIDATES :

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

SECTION-A

1. **Write briefly :**

   (a) Enzyme Biotechnology

   (b) Protein engineering

   (c) PCR

   (d) Cloning vectors

   (e) MHC

   (f) Bacterial vaccines

   (g) ELISA

   (h) Microbial conjugation

   (i) Griseofulvin

   (j) Plasma substitutes

June-2022

SECTION-B

2. Define the term Biotechnology. Explain basic principles and applications of genetic engineering.

3. What do you understand by immunity? Comparatively illustrate features of humoral and cellular immunity.

4. Explain principle, methodology and applications of Southern Blotting. Also, provide a well illustrated diagram of the Southern Blotting technique.

SECTION-C

5. Explain working and applications of Biosensors in Pharmaceutics.

6. Discuss potential applications of microbes in Pharmaceutical industry.

7. Write down the detailed notes on restriction endonucleases and DNA ligases.

8. What is hypersensitivity? Differentiate between immune stimulation and immune suppressions using suitable examples.

9. Give principle, methods and applications of PCR.

10. Explain briefly the microbial biotransformation processes and their applications in pharmaceutical product synthesis.

11. Compare genetic features of prokaryotes and eukaryotes using suitable examples.

12. What is fermentation technology? Give an overview of the fermentation methods and general requirements for synthesis of pharmaceutical ingredients.

13. How do you collect, process and store dried human plasma?

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Roll No. | | | | | | | | | | |

Total No. of Questions : 13

Total No. of Pages : 03

B.Pharma (Sem.-6)

MEDICINAL CHEMISTRY III-THEORY

Subject Code : BP601T

M.Code : 77986

Date of Examination : 04-07-22

Time : 3 Hrs.

Max. Marks : 75

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN objective type 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. Choose correct answer of the following objective type questions :

a) ..... bind to the 30s ribosomal subunit and alter protein synthesis.

A. Aminoglycoside
B. Penicillin
C. Tetracycline
D. Cephalosporin

b) ..... is a pyrimidine nucleoside based antiviral drug.

A. Acyclovir
B. Iodoxuridine
C. Rimantadine
D. Loviride

c) ..... is an imidazole derivative used as antifungal agent.

A. Clotrimazole
B. Fluconazole
C. Itraconzole
D. Terconazole

d) Isoniazid is a prodrug that is activated on the surface of *M. tuberculosis* by ..... enzyme

A. katG
B. RNA polymerase
C. inhA
D. None of these

e) ..... is a nonfluorinated quinolone anti-infective

A. Nalidixic acid,
B. Norfloxacin,
C. Ciprofloxacin,
D. Ofloxacin

f) Cinchonine and cinchonidine are .....

A. Optical isomers
B. Geometrical isomers
C. Conformational isomers
D. Anomers

g) Prontosil is .....

A. Bacteriostatic
B. Prodrug
C. Bioprecursor
D. All of the above

h) Docking is a ..... drug designing technique.

A. Structure based
B. Ligand Based
C. Mechanism Based
D. Both A & C

i) Negative value of Hammett's substituent constant indicates ..... nature of the substituent.

A. Electron withdrawing
B. Election releasing
C. Lipophilic
D. Hydrophobic

j) Hansch QSAR model for *in vivo* data is .....

A. Linear
B. Parabolic
C. A & B both
D. Hyperbolic

SECTION-B

2. Give an account of third-generation Cephalosporins. Discuss SAR of 7-acylamino substitution of cephalosphorin antibiotics.

3. a. Give synthesis of Chloroquine and Pamaquine.

   b. Write a note on artemisinin derivatives used as antimalarials.

4. What is prodrug? Describe various applications of prodrug with suitable examples.

SECTION-C

5. Discuss acid and alkaline degradation of penicillin class of antibiotics.

6. Write short note on anti-tubercular antibiotics.

7. Give synthesis and mechanism of action of Metronidazole.

8. Give synthesis and mode of action of acyclovir.

9. Discuss the SAR of quinalones and give an outline for synthesis of Ciprofloxacin.

10. Discuss detailed mechanism of action of antibacterial sulphonamide. Comment on its synergistic effect with folate reductase inhibitors.

11. Give important therapeutic uses and synthesis of Sulphamethoxazole and Dapsone.

12. What is pharmacophore modeling? Give its applications in drug designing.

13. Describe Hansch QSAR models and its merits.

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Roll No. | | | | | | | | | | |

Total No. of Questions : 22

Total No. of Pages : 02

B.Pharm (2017 Batch) (Sem.-6)

QUALITY ASSURANCE-THEORY

Subject Code : BP-606T

M.Code : 77991

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 briefly :

1. Difference between QA and QC
2. Master Formula Record
3. Quality audit
4. Validation
5. SOP
6. Material Management
7. Control Articles
8. Difference between primary and secondary packaging material
9. Line clearance
10. Pareto analysis

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SECTION-B

11. ICH guidelines are divided into which major categories, enumerate them with code and explain guidelines for stability testing.
12. Define QBD. What are different components of QBD? Discuss in brief.
13. Discuss the general principle of calibration. Also brief about Analytical method Validation.

SECTION-C

14. Define TQM. Enumerate components of TQM. Explain in detail any one of them.
15. Enumerate different quality management tools and explain fish bone diagram.
16. Explain Matrix design.
17. Briefly discuss ISO 14000
18. What are the principals of NABL Accreditation?
19. Discuss the significance of personnel responsibilities.
20. What is the procedure of purchase of equipments?
21. What is the protocol for conduct of A Non clinical Laboratory Study?
22. What is significance of SOP? Discuss the significance of reports and documents.

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Roll No.

Total No. of Questions : 22 Total No. of Pages : 02

B.Pharma (2017 Batch) (Sem.-6)

PHARMACEUTICAL BIOTECHNOLOGY-THEORY

Subject Code : BP-605T

M.Code : 77990

Time : 3 Hrs. Max. Marks : 75

INSTRUCTIONS TO CANDIDATES :

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SECTION-A

Explain the following terms in brief :

1. Genetic engineering
2. Biosensors
3. Recombinant DNA technology
4. Cloning vectors
5. Hypersensitivity
6. Immunoglobulins
7. Microbial transduction
8. Southern blotting
9. Penicillins
10. Human plasma

SCCTION-B

11. Define Enzyme Biotechnology. Give methods of enzyme immobilization and their applications with reference to Pharmaceutical sciences.
12. Explain principle and technique of recombinant DNA technology and its applications for the production of Hepatitis vaccine and Insulin hormone.
13. Explain principle, methodology and applications of ELISA. Also provide a well illustrated diagram showing different types of ELISA technique.

SECTION-C

14. Explain method of production and usage of amylases and Penicillinases for pharmaceutical product development.
15. Draw well illustrated diagram showing different parts and working of a Biosensor. Briefly explain potential applications of Biosensors in Pharmaceutical sciences.
16. What are Cloning Vectors? Highlight their features and applications in r-DNA technology.
17. Explain briefly the structure and functions of Major Histocompatibility Complex (MHC).
18. Differentiate between cellular and humoral immune responses using supporting examples.
19. Define the term Mutagenesis. Explain different types of mutations and utility of mutant organisms in Pharmaceutical industries.
20. Draw well labeled diagrams showing genetic features of plasmids and transposons. Compare genetic features of prokaryotes and eukaryotes using suitable examples.
21. Provide detailed note on design and working of a large scale fermenter. What are general requirements and methods used in fermentation technology?
22. How do you collect, process and store whole human blood?

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Roll No. | | | | | | | | | | |

Total No. of Pages : 02

Total No. of Questions : 22

B.Pharma (2017 Batch) (Sem.-6)

BIOPHARMACEUTICS AND PHARMACOKINETICS-THEORY

Subject Code : BP-604T

M.Code : 77989

Time : 3 Hrs.

Max. Marks : 75

INSTRUCTIONS TO CANDIDATES :

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SECTION-A

Write briefly :

1. What is meant by active secretion?
2. What is relative bioavailability?
3. Name plasma proteins responsible for drug - protein binding.
4. How is elimination half-life of a drug calculated from slope of elimination phase?
5. What is renal clearance and how is it calculated?
6. What is meant by very high Vd?
7. Mention four reasons for reduced oral bioavailability of drugs.
8. Mention the non-renal routes of drug elimination.
9. Draw the plasma – time curve for oral administration of drug for one compartment open model kinetics.
10. What is Pinocytosis?

SECTION-B

11. Give a detailed account of the physiological factors influencing drug absorption.
12. Comment on factors affecting renal clearance of drugs.
13. What is meant by non-linear pharmacokinetics? Discuss the factors responsible for non-linear pharmacokinetics of drugs.

SECTION-C

14. Write briefly about facilitated and active transport of drugs.
15. Explain with the help of suitable equations the pharmacokinetics of a drug in plasma after IV administration that follows one compartment open model.
16. Discuss the regulatory considerations pertaining to bioequivalence studies in India.
17. Write briefly about protein binding of drugs.
18. What is Sigma-Minus method? Explain the method of calculating elimination rate constant by this method with the help of suitable equations.
19. Discuss the phase – I reactions for drug metabolism.
20. Write a note on the approaches used for enhancing solubility and dissolution rates of poorly water soluble drugs.
21. Comment on in vitro – in vivo correlations.
22. Discuss the role of pKa of drug and pH of biological fluid in drug absorption.

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Roll No. [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] Total No. of Pages : 02

Total No. of Questions : 22

B.Pharm (2017 Batch) (Sem.-6)

HERBAL DRUG TECHNOLOGY-THEORY

Subject Code : BP-603T

M.Code : 77988

Time : 3 Hrs. Max. Marks : 75

INSTRUCTIONS TO CANDIDATES :

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

SECTION-A

Answer the following :

1. Define the term HERBAL DRUG PREPARATION.
2. Describe the method of preparation of BHASMA.
3. Give biological source and health benefits of GINGER.
4. Write biological source and side effects of GINSENG.
5. Give sources of any two WAXES used as raw material in herbal cosmetics.
6. Write advantages and disadvantages of conventional herbal formulations.
7. Define the terms BIOPIRACY and BIOPROSPECTING.
8. Describe storage conditions for accelerated stability testing of herbal drugs.
9. Write objectives of Schedule T.
10. What are the future prospects of herbal drug industry?

SECTION-B

11. a) Describe the basic principles involved in Siddha system of medicine.

    b) Describe method of preparation and standardization of ASAVA.

12. Discuss the scope and types of nutraceutical products available in the market. Explain the role of nutraceuticals in the management of Gastrointestinal diseases.
13. Describe various components of schedule T.

SECTION-C

14. Discuss the significance of NATURAL SWEETENERS as excipients.
15. Describe method of preparation and evaluation of PHYTOSOMES.
16. Describe raw materials used in oral hygiene products.
17. Explain patenting issues with natural products taking case study of *Curcuma*.
18. Describe schedule Z of Drug and Cosmetics Act for ASU drugs.
19. Describe WHO guidelines for the assessment of herbal drugs.
20. Mention various types of pests and discuss methods of pest management in medicinal plants.
21. Give pharmacokinetic and pharmacodynamic interactions of EPHEDRA with drugs.
22. What are health foods? Give a detailed account of SPIRULINA.

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Total No. of Pages : 02

Total No. of Questions : 22

B.Pharma (2017 Batch) (Sem.-6)

PHARMACOLOGY-III-THEORY

Subject Code : BP-602T

M.Code : 77987

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 the following :

1. What are respiratory stimulants? Give two examples.
2. What are emetics? Give two examples.
3. What is superinfection?
4. What is cotrimoxazole?
5. What is fancony syndrome?
6. Highlight therapeutic implications of chloroquine.
7. Highlight main side effects of chloramphenicol.
8. What is an antidote? Mention antidotes of morphine poisoning.
9. What are immunosuppressants? Give two examples.
10. What is chronotherapy?

SECTION-B

11. Classify anti-ulcer drugs and discuss pharmacology of H2 receptor antagonists.
12. Classify penicillins and discuss mechanism of action and side effects of penicillins.
13. Write an exhaustive note on anti-tuberculostic drugs.

SECTION-C

14. Give an account of prokinetic drugs as anti-emetic agents.
15. Add a note on mechanism and side effects of tetracyclines.
16. Explain clinical symptoms and management of organophosphorus compounds poisoning.
17. Add a note on mast cell stabilizers for asthma.
18. Write a note on cotrimoxazole.
19. Describe various types of biological rhythms.
20. Write a brief note on alkylating agents used in malignancy.
21. Write a note on antitussives.
22. Add a note on amphotericin-B as antifungal agent.

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Roll No. | | | | | | | | | | |

Total No. of Questions : 22

Total No. of Pages : 03

B.Pharmacy (2017 Batch) (Sem.-6)

MEDICINAL CHEMISTRY-III-THEORY

Subject Code : BP-601T

M.Code : 77986

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.**
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SECTION-A

Multiple Choice Question :

1. ..... inhibit the synthesis of bacterial cell wall.

   A. Penicillin B. Cephalosporin

   C. Tetracycline D. A & B both

2. ..... is a purine nucleoside based antiviral drug.

   A. Acyclovir B. Iodoxuridine

   C. Rimantadine D. Loviride

3. ..... is a triazole derivative used as antifungal agent.

   A. Fluconazole B. Ketoconazole

   C. Miconazole D. Clotrimazole

4. ..... is a prodrug used in the treatment of tuberculosis.

   A. Isoniazid B. Pyrazinamide

   C. Ethionamide D. A & B both

5. .....is a 1,8-naphthyridine-3-carboxylic acid used as urinary anti-infective.

   A. Nalidixic acid B. Ciprofloxacin

   C. Ofloxacin D. None of these

6. Quinine and quinidine are .....

   A. Optical isomers B. Geometrical isomers

   C. Conformational isomers D. Anomers

7. Sulphonamides are competitive antagonists of .....

   A. *p*-Amino benzoic acid B. Tetrahydrofolic acid

   C. Dihydrofolic acid D. Glutamic acid

8. Docking is a ..... drug designing technique.

   A. Direct B. Indirect

   C. Ligand Based D. A & C both

9. Positive value of Hammett's substituent constant indicates nature of the substituent.

   A. Electron withdrawing B. Electron releasing

   C. Lipophilic D. Hydrophobic

10. Hansch is also known as .....

    A. Extrathermodynamic approach B. Additivity Model

    C. Mixed model D. *de novo* model

SECTION-B

11. Discuss structural manipulation in acyl group at 6th position in penicillin to improve potency. Discuss chemical degradation of these class of antibiotics.

12. Classify anti-malarials with suitable examples. Discuss SAR of quinolines for anti-malarial activity.

13. What is combinatorial chemistry? Describe the solid phase and solution phase synthesis with one examples of each.

SECTION-C

14. Discuss ring and numbering systems of clinically available β-lactam antibiotic types.

15. Draw the structures of any two prodrugs used in the treatments of tuberculosis. Give synthesis of any one of them.

16. Write short note on reverse transcriptase inhibitors as antiviral agents.

17. Give synthesis and mechanism of action of Miconazole.

18. Draw the structures of any four antiprotozoal agents. Give mechanism of action of ornindazole.

19. Discuss SAR of Sulphonamide class of antibacterial.

20. What are folate reductase inhibitors? Give synthesis of Trimethoprim.

21. What is docking analysis? Describe its advantages over other CADD techniques.

22. Describe substituent constants of Hansch QSAR model with mathematical expression of each.

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Total No. of Questions : 22

Total No. of Pages : 03

B.Pharmacy (2017 Batch) (Sem.-6)

MEDICINAL CHEMISTRY-III-THEORY

Subject Code : BP-601T

M.Code : 77986

Time : 3 Hrs.

Max. Marks : 75

INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A** is COMPULSORY consisting of TEN questions carrying TWO marks each.
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   A. Acyclovir B. Iodoxuridine

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3. ..... is a triazole derivative used as antifungal agent.

   A. Fluconazole B. Ketoconazole

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4. ..... is a prodrug used in the treatment of tuberculosis.

   A. Isoniazid B. Pyrazinamide

   C. Ethionamide D. A & B both

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5. .....is a 1,8-naphthyridine-3-carboxylic acid used as urinary anti-infective.

A. Nalidixic acid B. Ciprofloxacin

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6. Quinine and quinidine are .....

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15. Draw the structures of any two prodrugs used in the treatments of tuberculosis. Give synthesis of any one of them.

16. Write short note on reverse transcriptase inhibitors as antiviral agents.

17. Give synthesis and mechanism of action of Miconazole.

18. Draw the structures of any four antiprotozoal agents. Give mechanism of action of ornidazole.

19. Discuss SAR of Sulphonamide class of antibacterial.

20. What are folate reductase inhibitors? Give synthesis of Trimethoprim.

21. What is docking analysis? Describe its advantages over other CADD techniques.

22. Describe substituent constants of Hansch QSAR model with mathematical expression of each.

NOTE : Disclosure of identity by writing mobile number or making 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 Batch) (Sem.-6)

PHARMACOLOGY-III-THEORY

Subject Code : BP-602T

M.Code : 77987

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 the following :

1. What are respiratory stimulants? Give two examples.
2. What are emetics? Give two examples.
3. What is superinfection?
4. What is cotrimoxazole?
5. What is fancony syndrome?
6. Highlight therapeutic implications of chloroquine.
7. Highlight main side effects of chloramphenicol.
8. What is an antidote? Mention antidotes of morphine poisoning.
9. What are immunosuppressants? Give two examples.
10. What is chronotherapy?

2020

SECTION-B

11. Classify anti-ulcer drugs and discuss pharmacology of H2 receptor antagonists.

12. Classify penicillins and discuss mechanism of action and side effects of penicillins.

13. Write an exhaustive note on anti-tuberculostic drugs.

SECTION-C

14. Give an account of prokinetic drugs as anti-emetic agents.

15. Add a note on mechanism and side effects of tetracyclines.

16. Explain clinical symptoms and management of organophosphorus compounds poisoning.

17. Add a note on mast cell stabilizers for asthma.

18. Write a note on cotrimoxazole.

19. Describe various types of biological rhythms.

20. Write a brief note on alkylating agents used in malignancy.

21. Write a note on antitussives.

22. Add a note on amphotericin-B as antifungal agent.

NOTE : Disclosure of identity by writing mobile number or making passing request on any page of Answer sheet will lead to UMC against the Student.

2020

Roll No. Total No. of Pages : 02

Total No. of Questions : 22

B.Pharm (2017 Batch) (Sem.-6)

HERBAL DRUG TECHNOLOGY-THEORY

Subject Code : BP-603T

M.Code : 77988

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 the following :

1. Define the term HERBAL DRUG PREPARATION.
2. Describe the method of preparation of BHASMA.
3. Give biological source and health benefits of GINGER.
4. Write biological source and side effects of GINSENG.
5. Give sources of any two WAXES used as raw material in herbal cosmetics.
6. Write advantages and disadvantages of conventional herbal formulations.
7. Define the terms BIOPIRACY and BIOPROSPECTING.
8. Describe storage conditions for accelerated stability testing of herbal drugs.
9. Write objectives of Schedule T.
10. What are the future prospects of herbal drug industry?

2020

SECTION-B

11. a) Describe the basic principles involved in Siddha system of medicine.

    b) Describe method of preparation and standardization of ASAVA.

12. Discuss the scope and types of nutraceutical products available in the market. Explain the role of nutraceuticals in the management of Gastrointestinal diseases.

13. Describe various components of schedule T.

SECTION-C

14. Discuss the significance of NATURAL SWEETENERS as excipients.

15. Describe method of preparation and evaluation of PHYTOSOMES.

16. Describe raw materials used in oral hygiene products.

17. Explain patenting issues with natural products taking case study of *Curcuma*.

18. Describe schedule Z of Drug and Cosmetics Act for ASU drugs.

19. Describe WHO guidelines for the assessment of herbal drugs.

20. Mention various types of pests and discuss methods of pest management in medicinal plants.

21. Give pharmacokinetic and pharmacodynamic interactions of EPHEDRA with drugs.

22. What are health foods? Give a detailed account of SPIRULINA.

NOTE : Disclosure of identity by writing mobile number or making passing request on any page of Answer sheet will lead to UMC against the Student.

2020

Total No. of Pages : 02

Roll No.

Total No. of Questions : 22

B.Pharma (2017 Batch) (Sem.-6)

PHARMACEUTICAL BIOTECHNOLOGY-THEORY

Subject Code : BP-605T

M.Code : 77990

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

Explain the following terms in brief :

1. Genetic engineering
2. Biosensors
3. Recombinant DNA technology
4. Cloning vectors
5. Hypersensitivity
6. Immunoglobulins
7. Microbial transduction
8. Southern blotting
9. Penicillins
10. Human plasma

2020

SCCTION-B

11. Define Enzyme Biotechnology. Give methods of enzyme immobilization and their applications with reference to Pharmaceutical sciences.

12. Explain principle and technique of recombinant DNA technology and its applications for the production of Hepatitis vaccine and Insulin hormone.

13. Explain principle, methodology and applications of ELISA. Also provide a well illustrated diagram showing different types of ELISA technique.

SECTION-C

14. Explain method of production and usage of amylases and Penicillinases for pharmaceutical product development.

15. Draw well illustrated diagram showing different parts and working of a Biosensor. Briefly explain potential applications of Biosensors in Pharmaceutical sciences.

16. What are Cloning Vectors? Highlight their features and applications in r-DNA technology.

17. Explain briefly the structure and functions of Major Histocompatibility Complex (MHC).

18. Differentiate between cellular and humoral immune responses using supporting examples.

19. Define the term Mutagenesis. Explain different types of mutations and utility of mutant organisms in Pharmaceutical industries.

20. Draw well labeled diagrams showing genetic features of plasmids and transposons. Compare genetic features of prokaryotes and eukaryotes using suitable examples.

21. Provide detailed note on design and working of a large scale fermenter. What are general requirements and methods used in fermentation technology?

22. How do you collect, process and store whole human blood?

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Roll No. Total No. of Pages : 02

Total No. of Questions : 22

B.Pharma (2017 Batch) (Sem.-6)

BIOPHARMACEUTICS AND PHARMACOKINETICS-THEORY

Subject Code : BP-604T

M.Code : 77989

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

Write briefly :

1. What is meant by active secretion?
2. What is relative bioavailability?
3. Name plasma proteins responsible for drug - protein binding.
4. How is elimination half-life of a drug calculated from slope of elimination phase?
5. What is renal clearance and how is it calculated?
6. What is meant by very high Vd?
7. Mention four reasons for reduced oral bioavailability of drugs.
8. Mention the non-renal routes of drug elimination.
9. Draw the plasma – time curve for oral administration of drug for one compartment open model kinetics.
10. What is Pinocytosis?

2020

SECTION-B

11. Give a detailed account of the physiological factors influencing drug absorption.

12. Comment on factors affecting renal clearance of drugs.

13. What is meant by non-linear pharmacokinetics? Discuss the factors responsible for non-linear pharmacokinetics of drugs.

SECTION-C

14. Write briefly about facilitated and active transport of drugs.

15. Explain with the help of suitable equations the pharmacokinetics of a drug in plasma after IV administration that follows one compartment open model.

16. Discuss the regulatory considerations pertaining to bioequivalence studies in India.

17. Write briefly about protein binding of drugs.

18. What is Sigma-Minus method? Explain the method of calculating elimination rate constant by this method with the help of suitable equations.

19. Discuss the phase – I reactions for drug metabolism.

20. Write a note on the approaches used for enhancing solubility and dissolution rates of poorly water soluble drugs.

21. Comment on in vitro – in vivo correlations.

22. Discuss the role of pKa of drug and pH of biological fluid in drug absorption.

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Roll No.

Total No. of Questions : 10 **Total No. of Pages : 02**

B.Pharma (2012 to 2016) (Sem.–6)
PHARMACOGNOSY-V
Subject Code : BPHM-604
M.Code : 71036

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 the following :**

a) What are Lignans?

b) Give chemical constituents and uses of Ergot.

c) Classify Glycosides.

d) What are uses of Monoterpenoids?

e) Give structure and uses of Camphor.

f) Name the product formed after reacting Menthol with 2% sulphuric acid.

g) What are Apo-carotenoids?

h) Describe Optical isomerism.

i) What is relationship between Quinine and Quinidine?

j) Give pharmacological actions of Flavonoids.

k) How will you identify methoxy group in Terpenoids?

l) Discuss isomerism of Citral.

m) Classify Monoterpenoids

n) Give pharmacological actions of Quassinoids.

o) Discuss isoprene rule

SECTION-B

2. Explain the concept of stereoisomerism in relation to natural products.
3. Describe chemistry and pharmacological activity of Ephedrine.
4. Describe chemistry of Xanthophylls.
5. Explain chemistry of Flavonoids.
6. Describe chemistry of Menthol.

SECTION-C

7. Describe chemistry and pharmacological activity of Atropine.
8. Describe chemistry and pharmacological activity of Digitoxin.
9. Write notes on chemistry of :
   a) Zingiberene
   b) Sennosides
10. Explain chemistry and therapeutic activity of Streptomycin.

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Roll No.

Total No. of Pages : 02

Total No. of Questions : 10

B.Pharma (2012 to 2016) (Sem.–6)

PHARMACOLOGY-II

Subject Code : BPHM-603

M.Code : 71035

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) What are central sympatholytics?

   b) What are the adverse effects of ACE inhibitors?

   c) What are the adverse effects of calcium channel blockers as antihypertensive agents?

   d) What is RAS?

   e) Name two antianginal drugs.

   f) What is pentagastrin?

   g) What are thromboxanes?

   h) Which drugs are employed for deep vein thrombosis?

   i) What are antiplatelet drugs?

   j) Discuss the pharmacological use of leukotriene antagonists.

   k) Name two drugs used in the therapy of shock.

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l) What are selective COX-2 inhibitors?

m) Discuss pharmacological role of substance P

n) Discuss potential of xanthines as antiasthmatic drug

o) Discuss role of [illegible]

SECTION-B

2. How Angiotensin ATI receptor antagonists are better than ACE inhibitors?

3. Discuss the potential of Calcium channel blockers as antiarrhythmic drugs

4. Write a note on potassium sparing diuretics.

5. What are NSAIDs? Explain the mechanism of aspirin as antiplatelet drug.

6. What are low molecular weight heparins?

SECTION-C

7. Discuss the role of renin-angiotensin-aldosterone system (RAAS) in the regulation of blood pressure and give an account of anti-hypertensive drugs affecting RAAS.

8. What are antiasthmatic drugs? Explain the role methylxanthines as antiasthmatic drugs.

9. Explain the mechanism and pharmacological action of :

   a) Bradykinin

   b) Substance P

10. Write a note on platelet activating factor and discuss pharmacological implications of PAF antagonists.

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Total No. of Questions : 10

Total No. of Pages : 02

B.Pharma (2012 to 2016) (Sem.–6)

PHARMACEUTICAL JURISPRUDENCE & ETHICS

Subject Code : BPHM-602

M.Code : 71034

Time : 3 Hrs.

Max. Marks : 80

INSTRUCTION TO CANDIDATES :

1. **SECTION-A is COMPULSORY consisting THIRTY Marks.**
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. **Define the following :**

   a) Drug as per Drug and cosmetic Act 1940

   b) Misbranded drugs

   c) Advertisements as per Drugs and Magic Remedies Act 1954

   d) Council and Registered pharmacists as per Pharmacy Act 1948

   e) Differentiate between prescription and non prescription products.

   f) Coca derivatives

   g) Toilet preparation as per medicinal and toilet preparations (Excise Duties) Act 1955.

   h) Patents

   i) Ethics as per Code of Pharmaceutical ethical

   j) Name two administration agencies under Insecticides Act 1968.

   k) Give the formula for retail price.

   l) Schedule M

   m) Offense for sale of adulterated drugs

   n) Loan licensing

   o) Drug inspections

SECTION-B

2. Describe the constitution of Pharmacy Council of India and its role in Pharmacy profession.

3. Discuss briefly the circumstances under which prohibited advertisements are allowed to be made.

4. What are the labeling requirements of sample of drugs meant for free distribution to doctors?

5. Describe the Import, Export and Transhipment of Psychotropic substance under the Act 1985.

6. Explain the circumstances under which pregnancy may be terminated by medical practitioners.

SECTION-C

7. a) Write a short note on factories act 1948.

   b) What are the labeling requirements for :

      i) Schedule X drugs.

      ii) Ophthalmic solutions and suspensions.

8. Describe the layout & construction of bonded laboratories. Describe the procedure for exporting alcoholic preparations under the bond.

9. What are the qualification, powers and duties of a Drug Analyst?

10. How many types of licenses can be issued for sale of drugs? Discuss the general requirements and conditions of grant of restricted license.

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Roll No. Total No. of Pages : 02

Total No. of Questions : 10

B.Pharma (2012 to 2016) (Sem.–6)
PHARMACEUTICAL CHEMISTRY-VI
(Medicinal Chemistry-I)
Subject Code : BPHM-601
M.Code : 71033

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) Define the term bioisosterism.

(b) What is meant by lead optimization?

(c) Write the chemical structure and uses of Salbutamol.

(d) What is catecholamine?

(e) Explain cholinergic.

(f) What are anticholinesterases?

(g) Give chemical structure and uses of Pyridostigmine Bromide.

(h) Outline the synthesis of Apomorphine.

(i) What are antispasmodic drugs?

(j) Outline the synthesis of Succinylcholine chloride.

(k) What are eicosanoids?

(l) Give structure and uses of Sodium Cromoglycate.

(m) What are Antihistamines?

(n) Give structure and uses of Indomethacin.

(o) What are Analgesic-antipyretics?

SECTION-B

2. Discuss physicochemical aspects of drugs in relation to biological activity.
3. Write a short note on conventional methods of drug design.
4. What are adrenergic drugs? Discuss their Structure Activity Relationship.
5. What is acetylcholine? Write short note on neostigmine bromide.
6. Write a short note on Antiulcer drugs.

SECTION-C

7. Discuss in details the drug receptor interactions. What are fat soluble vitamins?
8. Give detailed account on nomenclature and biosynthesis of prostaglandins.
9. Discuss mode of action of antihistamines. Write in detail about chlorpheniramine.
10. What are Non-steroidal Anti-inflammatory agents? Discuss phenylbutazone in detail.

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Total No. of Questions : 10

Total No. of Pages : 02

B.Pharma (2012 to 2016) (Sem.–6)

ENVIRONMENTAL SCIENCE

Subject Code : EVSC-101

M.Code : 71032

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. Answer briefly :

a) What are natural resources? Give the classification on the basis of origin.

b) Differentiate between Deforestation and desertification.

c) What do you understand by ozone layer?

d) Overgrazing

e) Ecology

f) Thermo cline

g) Red Data Book

h) Differentiate between Sound & Noise

i) What is water logging?

j) What is In-situ conservation?

k) What are Human Rights?

l) What is value education?

m) Define Food Chain.

n) *"Fresh water is the biggest crisis facing the world today."* Comment.

o) Write the uses of forest.

SECTION-B

Q2. In what way the culture as well as the biological diversity can be conserved in a country like India?

Q3. What are the values of biodiversity?

Q4 *"Ozone is a life saviour, if present in stratosphere: but is a pollutant, if present in troposphere."* Justify.

Q5. Differentiate between BOD & COD.

Q6. How do agro-chemicals contribute to soil pollution? What control measures are to be taken to minimize soil pollution from this source?

SECTION-C

Q7. Discuss in detail The Environmental Protection Act.

Q8. Discuss briefly :

a) Water shed management.

b) Environmental ethics.

Q9 *"Population, consumerism and waste production are interrelated"*. Comment.

Q10. *"Environmental ethics effectively change the role of human from conqueror of the land to citizen and protector of environment."* Comment.

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Total No. of Questions : 10

Total No. of Pages : 02

B.Pharma (2011 to 2016) (Sem.–6)
PHARMACEUTICAL MICROBIOLOGY
Subject Code : BPHM-605
M.Code : 71037

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. Define the following :

a. Antiseptic

b. Disinfectants

c. Grams Staining

d. Sterilization

e. Sterility testing

Differentiate between

f. Actinomycetes and Rickettsiae

g. Toxin and Toxoid

h. Vitamins and antibiotics

i. Transcription and Translation

j. catguts and eye drops

Answer Briefly :

k. How following materials tested for sterility :

0.9% w/v, 500ml Sodium chloride injection and WFI

l. What is the significance of D value?

m. What are culture media and how they are sterilized?

n. Why it is necessary to wrapped brown paper before autoclaving?

o. What are the precautions to be taken while autoclaving empty test tubes or petriplates?

SECTION-B

Q2. Give principle and procedure for staining techniques.

Q3. Give different methods for the evaluation of disinfectants and explain any two.

Q4. What is electron microscopy? Give its applications.

Q5. What is microbial assay? Give method for the assay of vitamins.

Q6. Write short note on :

a. Diagnostic preparations

b. Structure of Bacterial cell

SECTION-C

Q7. Explain construction, working, principle and validation of horizontal Autoclave.

Q8. How Dephtheria toxoid vaccine and staphylococcus vaccine prepared?

Q9. Explain method for the testing of sterility.

Q10 Write short note on :

a. Monitoring of sterilization process

b. BCG vaccine

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May-2019

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Total No. of Questions : 10

Total No. of Pages : 02

B.Pharma (2011 to 2016) (Sem.–6)

PHARMACOGNOSY-V

Subject Code : BPHM-604

M.Code : 71036

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. **Answer the following :**

(a) Draw structure of reserpine and morphine.

(b) Name a primary glycoside of digitalis and its hydrolytic product.

(c) Give two examples with complete biological source of atypical alkaloids.

(d) Differentiate between terpenes and terpenoids.

(e) Define stereoisomerism?

(f) Give structure and uses of squalene.

(g) What is isoprene and special isoprene rule?

(h) Write important uses of streptomycin.

(i) Give structure and uses of diosgenin.

(j) Draw the basic nucleus of a flavonol and a flavanol.

(k) Draw structure of sennoside A and B.

(l) Why xanthophylls are important?

(m) How will you detect presence of Flavonoids in a given plant?

(n) Draw the structure of papaverine and also write the alkaloidal class to which it belongs.

(o) Write constitution of menthol.

SECTION-B

Q2. Write an informative note on quassinoides.

Q3. Discuss the chemistry, semisynthetic derivatives and pharmacological activity of vincristine and vinblastine.

Q4. Explain the structure of menthol.

Q5. Hofmann exhaustive methylation is useful in structural elucidation of alkaloids. Justify.

Q6. Write note on cardiac glycosides.

SECTION-C

Q7. Elaborate on the pharmacological importance and development of penicillin and tetracycline. (10)

Q8. Discuss the chemistry of citral and quinine. (10)

Q9. Write an informative note on the spectral approaches involved in structure determination of phytocompounds. (10)

Q10. (a) Classify terpenoids with example from each class. Also throw light on their medicinal importance. (6)

(b) Explain the medicinal importance of carotenoids. (4)

May-2019

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Total No. of Pages : 02

Total No. of Questions : 10

B.Pharma (2011 to 2016) (Sem.–6)
PHARMACOLOGY-II
Subject Code : BPHM-603
M.Code : 71035

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) Give contra-indications of cardiac glycosides.

b) What is reflex tachycardia?

c) Define TIA.

d) How type I dyslipidemia is different from type IIa and IIb?

e) Explain different phases of cardiac action potential.

f) Outline mechanism of action of class Ic agents.

g) Explain toxicities caused by warfarin.

h) Give clinical use of heparin.

i) What is Spironolactone? Mention its adverse effects.

j) Give indications of thiazides.

k) Classify serotonin Receptors.

l) How COX-1 is different from COC-2 and COX-3?

m) How first generation and second generation anti-histaminic are different?

n) Classify anti-asthmatic drugs.

o) What is methylxanthine? Give examples and indications.

SECTION-B

2. Discuss pharmacology of digitails in detail.
3. Outline treatment of acute attack of asthma.
4. Write a detailed note on Vitamin K.
5. Discuss anti-platelet drugs in detail.
6. Write a detailed note on drugs action on RAAS.

SECTION-C

7. Write a detailed note on anti-hypertensive drugs.
8. Discuss antiarrhythmic drugs in detail.
9. Outline process of hematopoiesis. Discuss hematinic in detail.
10. Write a detailed note on autacoids.

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B.Pharma (2011 to 2016) (Sem.–6)

PHARMACEUTICAL CHEMISTRY-VI

(Medicinal Chemistry-I)

Subject Code : BPHM-601

M.Code : 71033

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) Non-classical bioisosterism

b) Lead optimization

c) Nicotinic action of Acetylcholine

d) Enzymes involved in the metabolism of Catecholamines

e) Oxicam

f) F-type prostaglandins

g) Parkinsonism

h) Thromboxane

i) Structure of histamine

j) H_2-receptor

k) Role of nicotinamide

l) Biotin

m) Calciferol

n) Conformational isomers of Acetylcholine

o) Serendipitous way of drug designing.

SECTION-B

2) Comment on storage and release of Acetylcholine hydrochloride.

3) What are antispasmodics? Give synthesis and mode of action of Dicyclomine hydrochloride.

4) Give synthesis, mode of action and uses of Gallamine triethiodide.

5) Give synthesis, mode of action and uses of Pyrodigostigmine

6) Name water soluble vitamins. Discuss chemistry of vitamin C.

SECTION-C

7) Describe factors affecting drug receptor interactions.

8) Discuss general SAR of H_1 receptor antagonist.

9) Describe conjunction and disjunction methods of drug designing by citing at least one example of each.

10) Discuss SAR of 3,5-Pyrazolidinedione derivatives for their anti-inflammatory activity. Give synthesis, mode of action of phenylhydrazone.

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May-2019

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B.Pharma (2011 to 2016) (Sem.–6)

ENVIRONMENTAL SCIENCE

Subject Code : EVSC-101

M.Code : 71032

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) Name components of eco-system.

   (b) What is BOD?

   (c) Name two major air pollutants.

   (d) What is water logging?

   (e) What is Ecological Pyramid?

   (f) What is watershed management?

   (g) What is cyclone?

   (h) Write negative effects (two) of deforestation.

   (i) Define Food Chain.

   (j) What is Population Explosion?

   (k) What is Global Warming?

   (l) Define HIV/AIDS.

   (m) What are decomposers?

   (n) What is ozone layer depletion?

   (o) Define value education.

SECTION-B

2. Write in detail about multi-disciplinary nature of environmental science.

3. Describe major types of natural resource and their associated problems.

4. Give an account on hotspots of biodiversity.

5. Briefly describe about the disaster management principles for floods and landslides hazards.

6. Discuss Environment Protection Act.

SECTION-C

7. What is rain water harvesting? Discuss various urban problems related to energy.

8. Discuss the causes, effects and control measures of soil pollution.

9. Write in detail about "Wildlife Protection Act".

10. Describe the-factors that affect human population growth rate.

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.

May-2019

6Roll No. [ ] [ ] [ ] [ ] [ ] [ ] [ ]

Total No. of Questions : 10 Total No. of Pages : 02

B.Pharma (2011 to 2016) (Sem.–6)

ENVIRONMENTAL SCIENCE

Subject Code : EVSC-101

Paper ID : [A2263]

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 Answer briefly :

a) Explain the significance of 'interaction of systems' in environmental studies.

b) What is an ecological pyramid?

c) Define biodiversity hot spots.

d) What is soil erosion? How is it checked?

e) How does the phenomenon of 'Eutrophication' occur?

f) Explain the First law of thermodynamics as applied to ecological energy flows.

g) What is meant by thermal pollution?

h) Consider 'rain water harvesting' as a water conservation measure.

i) List the mitigation measures of natural disasters.

j) What is meant by Urban Heat Island?

k) Why is value education important in environmental management?

l) How are disasters classified? Give one example to each.

m) What are bio-fertilizers?

n) List any four air pollutants emitted from automobiles.

o) What is meant by population explosion?

SECTION-B

Q2 How does soil pollution differ from water pollution in effects and control?

Q3 What is meant by waste land reclamation? Discuss the possible methodology

Q4 Consider the Hydrological Cycle and establish water as a natural resource

Q5 *"Population, consumerism and pollution are interrelated"* comment

Q6 Explain the phenomenon of Global warming. What are its major causes?

SECTION-C

Q7 *"The implementation of environmental laws is yet to mature in India"* Comment on the statement pointing out the problems in implementing the various environmental laws. (10)

Q8 Identify the major environmental problems in your region. Suggest strategies to combat the problems. Also, specify the role of you as an individual in solving the issue (3+3+4)

Q9 Write notes on

a) Ozone depletion (5)

b) Non-conventional sources of energy (5)

Q10 Critically evaluate

a) The National policy/efforts to control AIDS/HIV and its implementation (5)

b) The National Family Welfare programmes and its effectiveness (5)

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Total No. of Questions : 10

Total No. of Pages : 02

B.Pharma (2011 to 2016) (Sem.–6)

PHARMACEUTICAL CHEMISTRY-VI

(Medicinal Chemistry-I)

Subject Code : BPHM-601

Paper ID : [A2264]

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. Give chemical structure and name of any one H_1 receptor antagonist.

   b What is riboflavine? What is its importance?

   c. Give structure of a drug where stereochemistry changes biological activity.

   d. Give the structures of two adrenergic neurotransmitters.

   e. What are organophosphates? Give their general structure.

   f. Name four direct acting cholinergic agents.

   g. Give chemical structure of anticholinergics from natural sources.

   h What are anticoagulants? Give examples.

   i. Give the chemical structure of one prostaglandin used as uterine stimulant.

   j Name the enzymes for metabolism of norepinephrine. What is its primary metabolite?

   k What are the various classes of antiparkinsonian drugs?

   l Give chemical structure of acetylcholine. What is its disadvantage for use in therapy?

   m Give the structure of a β_2- selective adrenergic agent with its use.

n. What is logP? How does it affect biological activity of drugs?

o Classify eicosanoids.

SECTION-B

2. Give the chemical structure, chemical name, therapeutic uses, mechanism of action and synthesis of salbutamol.

3. Discuss NSAIDs from the class of propionic acid derivatives.

4. Discuss structure activity relationships of H_2 receptor antagonists.

5. Discuss the biosynthesis, release and metabolism of acetylcholine.

6. Give the nomenclature, uses and mechanism of action of tropane alkaloids.

SECTION-C

7. What are sympathomimetics? Discuss giving relevant examples, the structural features of sympathomimetic agents contributing towards their potency and receptor selectivity.

8. What are anticholinesterases? What is their mechanism of action? Give an account of the chemistry of reversible anticholinesterases used in therapy.

9. Give chemical structure, chemical name and uses of the following :

   a. Chlorpheniramine

   b. Indomethacin

   c. Isoprenaline

   d. Dicyclomine

10. Discuss the chemistry of any one synthetic class of antimuscarinic agents with relevant examples.

Dec 2018

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Total No. of Questions: 10

Total No. of Pages: 02

B.Pharma (2011 Onwards) (Sem. – 6)

PHARMACEUTICAL CHEMISTRY-VI (Medicinal Chemistry-I)

M Code: 71033

Subject Code: BPHM-601

Paper ID: [A2264]

Time: 3 Hrs.

Max. Marks: 80

INSTRUCTIONS 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. Explain the terms:

a) Define lead

b) Classification of antiulcer drugs

c) Therapeutic class and MOA of Phenylbutazone

d) Fat soluble Vitamins

e) Synthesis of Hydralazine

f) Biosynthesis of Prostaglandins

g) Bioisosterism

h) Name two irreversible gastric proton pump inhibitors.

i) Give the therapeutic classes of the drugs i) Indomethacin ii) Chloropheniramine

j) Name two drugs used in Parkinson's disease.

k) Metabolism of acetyl choline

l) Stereochemistry of Neostigmine bromide

m) Cholinergic receptors.

n) Eicosanoids

o) Adrenergic hormones

SECTION B

2. Give the mechanism of action of prostaglandins.
3. How bio-isosterism effects the biological activity of drugs?
4. Mechanism of action and synthesis of Antiulcer drugs.
5. Classify non-steroidal anti-inflammatory agents on the basis of chemistry with one each example. Explain its mode of action.
6. Discuss SAR of Antiulcer drugs.

SECTION C

7. What do understand by Lead? Explain the various methods to obtain the lead along with its Optimization.
8. Discuss in detail about drug receptor interaction.
9. Classify Antispasmodic drugs with examples. Give the mechanism of action and synthesis of one drug form two different classes.
10. Discuss the SAR of drugs used for analgesic and antipyretic. Give the synthesis of any two drugs.

APRIL 2018

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Total No. of Pages: 02

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B.Pharma (2009 & 2010 Batch) (Sem. – 6)

PHARMACEUTICAL CHEMISTRY-VI (Medicinal Chemistry-I)

M Code: 46149

Subject Code: PHM-361

Paper ID: [D0171]

Time: 3 Hrs. **Max. Marks: 80**

INSTRUCTIONS TO CANDIDATES:

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

SECTION A

1. a) Define Bioisosterism.

   b) Define Lead.

   c) Define E and Z isomers with examples.

   d) Write the name of MAO-B inhibitors.

Give the structure and uses of followings:

   e) PGE_1

   f) Pentoprazole

   g) Salbutamol

   h) Oxyphenbutazone

   i) Salsalate

   j) Pyridostigmine

   k) Paracetamol

   l) Tripolidine Hcl

   m) Citerizine

   n) Phenylbutazone

   o) Flubiprofen

SECTION B

2. What are H1-receptor blockers? Give the mechanism of action, SAR and structures of this class.

3. What are antispasmodic drugs? Classify with structures. Give the mechanism of action of antispasmodics and synthesis of any one drug.

4. Write a short note on:

   a) Vitamins

   b) Lead optimization

5. Define Prostaglandins. Write down its biosynthesis.

6. Give the synthesis of followings:

   a) Adrenaline

   b) Neostigmine bromide

SECTION C

7. What are antihistamins? Give the MOA, SAR of antihistamins. Classify them with structures.

8. What do you understand by Cholinergics and anticholinergics drugs? Write down the SAR of anticholinergics drugs. Give the synthesis of any one drug.

9. Write a note on:

   a) Antiulcer drugs

   b) Anticholinesterase

10. What are NSAIDs. Give classification with structures. MOA and SAR of NSAIDs.