This question paper contains **3** printed pages]

SP—03—2024

FACULTY OF SCIENCES AND TECHNOLOGY

B. Pharm. (Sixth Semester) EXAMINATION

APRIL/MAY, 2024

MEDICINAL CHEMISTRY-III

Paper BP-601-T

(Wednesday, 15-05-2024) **Time : 10.00 a.m. to 1.00 p.m.**

Time—Three Hours *Maximum Marks*—75

Note :— (*i*) *All* questions are compulsory.

(*ii*) Figures to the right hand margin indicate full marks.

1. Answer the following : 2×10=20

(*a*) Give outline synthesis of chloramphenicol.

(*b*) Give MOA of β-lactum antibiotic.

(*c*) Give ideal requirements of prodrug.

(*d*) Draw the structure and IUPAC name of Pamaquine.

(*e*) Give the synthetic pathway for Acyclovir.

(*f*) Classify Quinolones with chemical structure of one drug of each category.

P.T.O.

(*g*) Write a note on azole as antifungal agents.

(*h*) Give the structure and uses of ornidazole.

(*i*) Draw the structure and IUPAC name of Niclosamide.

(*j*) Enlist N_1 and N_4 substituted sulphonamide and draw any *one* drug from it.

2. Answer any *two* from the following : 2×10=20

(*a*) (*i*) Explain in detail about SAR and MOA of Sulphonamide.

(*ii*) Classify penicillin on the basis of chemical moiety.

(*b*) (*i*) Discuss about SAR, MOA, biotransformation and synthesis of INH.

(*ii*) Discuss about SAR of Quinolone as antibacterial agent.

(*c*) Classify antimalarial agent on the basis of chemical moiety. Explain SAR of Quinolones as antimalarial agents.

3. Answer any *seven* from the following : 7×5=35

(*a*) Discuss in detail about SAR of tetracycline class of antibiotic.

(*b*) Explain in detail about pharmaceutical and pharmacokinetic applications of prodrug.

(*c*) Briefly discuss about :

(*i*) Carrier linked prodrug

(*ii*) Synthetic pathway of PAS.

(*d*) What are antiviral agents ? Classify them with at least *one* example from each class.

(*e*) Explain in short :

(*i*) Partition coefficient

(*ii*) Parallel synthesis.

(*f*) Draw the structure, IUPA name, MOA and synthesis of Dapsone.

(*g*) Draw the structure of the following :

(*i*) Norfloxacin

(*ii*) Mebendazole

(*iii*) Ethambutol

(*iv*) Sulphapyridine

(*v*) Ketoconazole.

(*h*) Give the synthesis of Miconazole and Metronidazole.

(*i*) How would you classify Anthelmintics on the basis of chemical structure ? Give synthesis of DEC.

This question paper contains **3** printed pages]

SP—07—2024

FACULTY OF SCIENCES AND TECHNOLOGY

B.Pharm. (Sixth Semester) EXAMINATION

APRIL/MAY, 2024

PHARMACOLOGY-III

(Friday, 17-05-2024) **Time : 10.00 a.m. to 1.00 p.m.**

Time—Three Hours *Maximum Marks*—75

Note :— (*i*) *All* questions are compulsory.

(*ii*) Answer to the point only.

(*iii*) Illustrate your answer with neat sketch wherever necessary.

1. Answer the following : 10×2=20

(*a*) What are the adverse effects of Tetracyclines ?

(*b*) What are antiemetics ?

(*c*) How to carminatives act ?

(*d*) What are fluoroqunolones ? Give examples.

(*e*) Enumerate various antidotes available.

(*f*) Differentiate between expectorants and antitussives.

P.T.O.

(*g*) Define chronotherapy and write their applications.

(*h*) What is amoebiasis ? Mention any *four* drugs used in the treatment of it.

(*i*) Write about the treatment for organophosphorous poisoning.

(*j*) Mention *four* classes of antibiotics acting by inhibiting cell wall synthesis.

(*k*) What are nasal decongestants ? Give examples.

2. Solve any *two* of the following : 2×10=20

(*a*) Classify anti-ulcer agents with examples. Write mechanism of action and therapeutic uses of PPIs.

(*b*) Classify penicillin. Write mechanism of action, adverse effects and uses of Penicillin-G.

(*c*) Classify antitubercular agents. Explain mechanism of action of INH and Rifampicin.

3. Solve any *seven* of the following : 5×7=35

(*a*) What is bronchial asthma ? Classify drugs used in its treatment.

(*b*) Outline the steps involved in the elimination of orally ingested poisons.

(*c*) Classify antiviral and antiretroviral agents with examples.

(*d*) Write mechanism of action, adverse effects and uses of corticosteroids.

(*e*) Write clinical symptoms of heavy metals poisoning. Add a note on their antidotes.

(*f*) Classify antileprotic drugs with examples. Write about Dapsone.

(*g*) Write about drugs used in treatment of urinary tract infection.

(*h*) What are prokinetic drugs ? Write pharmacology of Metaclopramide.

(*i*) What is biological clock ? With some example explain chronothera .

This question paper contains **3** printed pages]

SP—11—2024

FACULTY OF PHARMACEUTICAL SCIENCE

B.Pharm. (Sixth Semester) EXAMINATION

APRIL/MAY, 2024

HERBAL DRUG TECHNOLOGY

Paper BP-603-T

(Monday, 20-05-2024) **Time : 10.00 a.m. to 1.00 p.m.**

Time—Three Hours *Maximum Marks*—75

Note :— (*i*) *All* questions are compulsory.

(*ii*) Answer to the point only.

(*iii*) Figures to the right indicate full marks.

1. Solve *all* of the following : 10×2=20

(*a*) Define herb and herbal medicine.

(*b*) Write characteristics of herbal dyes.

(*c*) Give role of honey as health food.

(*d*) Give the significance of herbarium.

(*e*) Enlist *four* dietary supplements under neutraceuticals.

P.T.O.

(*f*) Write advantages of bioinsecticides.

(*g*) Define Patent.

(*h*) Give the biological source of any *one* herb used as perfume.

(*i*) What are hair tonics ?

(*j*) What are probiotics ? Give example.

2. Solve any *two* of the following : 2×10=20

(*a*) Define and classify herbal excipients with example. Describe the role of herbal excipient in cosmetics.

(*b*) Explain the WHO and ICH guidelines for assessment of herbal drugs.

(*c*) Describe in detail the morphological and microscopical methods of identification and authentication of herbal material.

3. Solve any *seven* of the following : 7×5=35

(*a*) What are neutraceuticals ? Discuss on the present market scenario and scope of neutraceuticals.

(*b*) Give the ideal characteristics of leha and churna.

(*c*) Enlist various bioinsecticies and explain any *two* in detail.

(*d*) Write the possible side effects of Ginseng and Ephedra.

(*e*) Discuss Garlic as a neutraceutical.

(*f*) Write the side effects and possible interactions of Kava-Kava.

(*g*) Write in detail about organic farming.

(*h*) Write a note on stability testing of herbal drug.

(*i*) Explain the regulation of manufacture of ASU drugs in India.

This question paper contains **2** printed pages]

SP—15—2024

FACULTY OF SCIENCE AND TECHNOLOGY

B.Pharm (Third Year) (Sixth Semester) EXAMINATION

APRIL/MAY, 2024

BIOPHARMACEUTICS AND PHARMACOKINETICS

Paper BP604-T

(Wednesday, 22-05-2024) **Time : 10.00 a.m. to 1.00 p.m.**

Time—Three Hours *Maximum Marks*—75

Note :— (*i*) *All* questions are compulsory.

(*ii*) Answer to the point only

(*iii*) Figures to the right indicate full marks.

(*iv*) Illustrate your answer with neat sketch wherever necessary.

1. Solve the following : 10×2=20

(*a*) Give Michaelis-Menten equation for non-linearity.

(*b*) What is sink condition ?

(*c*) Define total body clearance.

(*d*) What do you mean by bioequivalence ?

(*e*) Mention the objectives of bioavailability studies.

(*f*) Define biotransformation. Give drug metabolizing enzymes.

(*g*) Define gastric emptying.

P.T.O.

(*h*) Enlist pharmacokinetic and pharmacodynamic parameter.

(*i*) Give the factors affecting protein binding of drugs.

(*j*) Define absorption and distribution of drug.

2. Solve any *two* of the following : 2×10=20

(*a*) Explain non-renal of drug excretion of drugs.

(*b*) Explain any *five* methods for enhancement of bioavailability.

(*c*) Explain factors affecting absorption of drugs.

3. Solve any *seven* of the following : 7×5=35

(*a*) Give phase-I and phase-II reactions.

(*b*) What is pH partition hypothesis ?

(*c*) Give causes for non-linearity.

(*d*) What is loading dose and maintenance dose ?

(*e*) Explain one compartment open model for intravenous bolus administration.

(*f*) Give factors affecting distribution of drugs.

(*g*) Explain binding of drugs to HSA.

(*h*) What is first pass effect metabolism ?

(*i*) Explain blood brain barrier.

This question paper contains 2 printed pages]

SP—19—2024

FACULTY OF PHARMACEUTICAL SCIENCE AND TECHNOLOGY

B.Pharma. (Sixth Semester) EXAMINATION

APRIL/MAY, 2024

PHARMACEUTICAL BIOTECHNOLOGY

Paper BP-605 T

(Saturday, 25-05-2024) **Time : 10.00 a.m. to 1.00 p.m.**

Time—Three Hours *Maximum Marks—75*

Note :— (*i*) *All* questions are compulsory.

(*ii*) Figures to the right indicate full marks.

1. *All* questions are compulsory : 10×2=20

(*a*) Define plasmid with example.

(*b*) Differentiate between vaccine and serum.

(*c*) What is PCR ? Give *two* examples.

(*d*) Define immunity. List types of it.

(*e*) Give different types of ELISA.

(*f*) Give application of enzyme in medicine.

(*g*) What is cosmid vector ?

P.T.O.

(*h*) Define Toxoids. Give an example.

(*i*) What is biotechnology ?

(*j*) Define immunoglobulins.

2. Solve any *two* : 2×10=20

(*a*) Describe the production of hepatitis B vaccine.

(*b*) Describe the general method of recombinant DNA technology.

(*c*) Explain in detail PCR.

3. Solve any *seven* : 7×5=35

(*a*) What is mutation ? Describe different types of mutation.

(*b*) Outline general method for production of peniciline.

(*c*) What is vaccine ? Give application of microbial biotransformation.

(*d*) Write production of monoclonal antibodies.

(*e*) Write a note on storage and stability of vaccine.

(*f*) Write in detail different types of fermenter.

(*g*) Define prokaryotic and eukaryotic enzyme.

(*h*) Describe principle involved in hydrid technology.

This question paper contains **3** printed pages]

SP—26—2024

FACULTY OF PHARMACEUTICAL SCIENCE AND TECHNOLOGY

B. Pharm. (Sixth Semester) EXAMINATION

APRIL/MAY, 2024

PHARMACEUTICAL QUALITY ASSURANCE

(Tuesday, 28-05-2024) **Time : 10.00 a.m. to 1.00 p.m.**

Time—Three Hours *Maximum Marks—75*

Note :— (*i*) *All* questions are compulsory.

(*ii*) Answer to the point only

(*iii*) Figures to the right indicate full marks.

1. Answer the following questions : 10×2=20

(*a*) Define :

(*i*) Quality assurance

(*ii*) Quality control.

(*b*) What is TQM ?

(*c*) Enlist any *four* Q-series guidelines.

P.T.O.

(*d*) What is ISO 9000 ?

(*e*) Mention objectives of NABL.

(*f*) Write a note on personnel hygiene.

(*g*) Discuss the importance of packaging in pharmaceutical industry.

(*h*) Give the objectives of GLP.

(*i*) What do you mean by product recall ?

(*j*) Define calibration and validation.

2. Solve any *two* of the following : 2×10=20

(*a*) Explain in detail batch formula record and master formula record.

(*b*) Describe in detail quality control test for glass container.

(*c*) Write about equipment selection in Pharmaceutical Industry.

3. Solve any *seven* of the following : 7×5=35

(*a*) Explain in brief components of GMP.

(*b*) Describe the process of harmonization.

(*c*) Write responsibilities of personnel in pharmaceutical industry.

(*d*) What is study director ? Give its responsibilities in detail.

(*e*) Give the steps of registration for ISO 1400.

(*f*) Explain the qualification of UV-visible spectrophotometer.

(*g*) What is quality audit ? Write its different in detail.

(*h*) Explain in detail elements of QbD.

(*i*) Describe philosophies of TQM.

This question paper contains **3** printed pages]

PP—03—2023

FACULTY OF SCIENCE AND TECHNOLOGY

B. Pharm. (Third Year) (Six Semester) EXAMINATION

NOVEMBER/DECEMBER, 2023

MEDICINAL CHEMISTRY-III

(Wednesday, 27-12-2023) **Time : 10.00 a.m. to 1.00 p.m.**

Time—3 *Hours* *Maximum Marks*—75

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Draw structure, reactions wherever necessary.

1. Solve the following : 10×2=20

(*a*) What are tetracycline antibiotics ?

(*b*) Enlist the steps involved in preparation and purification in antibiotics.

(*c*) What are N1 and N4 substituted sulphonamides ?

(*d*) Name and draw heterocyclic ring present in :

(*i*) Nitrofurantoin

(*ii*) Pyrimethamine.

(*e*) Write a note on macrolide antibiotics.

(*f*) Define lead molecule and pharmacophore.

P.T.O.

(*g*) Name the target receptor for quinolone and chloroquine.

(*h*) Give structure and IUPAC name of dapsone.

(*i*) Enlist any *four* drugs that bind to ribosomal cell wall.

(*j*) Write chemical category of.

(*i*) Amphoterecin B.

(*ii*) Proguanil.

2. Solve any *two* of the following : 2×10=20

(*a*) What are β–lactum antibiotics ? Write chemical classification of β–lactums with at least *one* structure from each class. Explain the SAR of penicillin.

(*b*) Write chemical classification of antifungal drugs. write synthesis of tolnaftate.

(*c*) Explain chemistry , SAR and MOA of quinolones .

3. Solve any *seven* of the following : 7×5=35

(*a*) Write structure, IUPAC name and MOA of metronidazole.

(*b*) Enlist different physico-chemical parameters related to QSAR. Explain any *two*.

(*c*) Write chemical classification of antiviral drugs with at least *one* structure from each class.

(*d*) What are anthemintic drugs ? Write syntheris of Mebendazole.

(*e*) Write chemical classification of antimalarial drugs with suitabe structure.

(*f*) Write a note on combinational chemistry.

(*g*) Write a note on macrolide antibiotics.

(*h*) Explain the SAR of tetracycline.

(*i*) Write classification of Anti-TB drugs. Enlist target receptor for each category.

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This question paper contains **2** printed pages]

PP—07—2023

FACULTY OF SCIENCE AND TECHNOLOGY

B.Pharm. (Third Year) (Sixth Semester) EXAMINATION

NOVEMBER/DECEMBER, 2023

PHARMACOLOGY

Paper–III (BP-602T)

(Friday, 29-12-2023) **Time : 10.00 a.m. to 1.00 p.m.**

Time—3 *Hours* *Maximum Marks*—75

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Answer to the point only.

(*iii*) Illustrate your answer with neat sketch wherever necessary.

1. Answer the following : 10×2=20

(*a*) Define Asthma. Give its types.

(*b*) What are anti-diarrheal drug ? Give its examples.

(*c*) Write cases in which emetics are contraindicated.

(*d*) Define peptic ulcer. Write its types.

(*e*) What is respiratory stimulants ? Give its examples.

(*f*) What are emetics and anti-emetics ? Give its examples.

(*g*) What is drug resistance ?

(*h*) Write therapeutics uses of Ranitidine.

(*i*) Write mechanism of action and uses of Sulphonamides.

(*j*) What is the source of penicillin and streptomycin ?

P.T.O.

WT

2. Solve any *two* of the following : 2×10=20

(*a*) Define antibiotics. Classify antibiotics on the basis of mechanism of action. Discuss pharmacology of penicillin.

(*b*) What are antitubercular agents ? Classify it with suitable example. Write pharmacology of INH (Isoniazide).

(*c*) What are anti-leprotic agents ? Classify it with suitable example. Explain pharmacology of dapsone.

3. Solve any *seven* of the following : 7×5=35

(*a*) Define and classify anti-asthmatic drugs. Write pharmacology of Salbutamol.

(*b*) Define and classify purgatives. Write therapeutic uses of purgatives.

(*c*) What are antitussive drugs ? Write pharmacology of Codeine.

(*d*) Explain in detail pharmacology of Sulphonamides.

(*e*) Discuss pharmacology of chloramphenicol.

(*f*) What are antiviral agents ? Explain pharmacology of Zidovudine.

(*g*) Explain the pharmacology of tetracycline.

(*h*) Discuss various general principles of treatment of poisoning.

(*i*) Write pharmacotherapy of tuberculosis.

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This question paper contains **2** printed pages]

PP—11—2023

FACULTY OF SCIENCE AND TECHNOLOGY

B.Pharm. (Sixth Semester) EXAMINATION

JANUARY, 2024

HERBAL DRUG TECHNOLOGY

Paper–(BP-603T)

(Monday, 01-01-2024) **Time : 10.00 a.m. to 1.00 p.m.**

Time—3 *Hours* *Maximum Marks*—75

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Answer to the point only.

(*iii*) Draw neat labelled diagrams wherever necessary.

(*iv*) Figures to the right indicate full marks.

1. Solve the following : 10×2=20

(*a*) Define herb and herbal medicine.

(*b*) Define biopesticide with example.

(*c*) Define bhasma. Enlist *four* characteristics of bhasma.

(*d*) Write the biological source and uses of Ginseng.

(*e*) What is drug interaction ? Classify it.

(*f*) What are antioxidants ? Give examples.

(*g*) Define patent. Enlist the conditions for patent grant.

(*h*) Enlist any *four* industries involved in herbal medicine manufacturing.

(*i*) Write the biological source and marketed formulations of fenugreek.

(*j*) Enlist *four* herbal drugs used in hair care preparations.

P.T.O.

2. Solve any *two* of the following : 2×10=20

(*a*) Discuss the role of neutraceuticals used in prevention of Diabetes and Cancer.

(*b*) Discuss general requirements, infrastructural requirements, working space, storage area, equipments, SOP, health and hygiene for manufacturing of ASU drugs.

(*c*) Discuss WHO guidelines for assessment and stability testing of herbal drugs.

3. Solve any *seven* of the following : 7×5=35

(*a*) Discuss method of preparation, evaluation and storage for Asava.

(*b*) Discuss primary and secondary processing of raw herbal material.

(*c*) Write chemical constituents and uses of Ginger, Fenugreek and Ashwagandha.

(*d*) Discuss the possible herb-drug and herb-food interactions of Ginkobiloba.

(*e*) Write the principle of Ayurveda and Unani system of medicine.

(*f*) Discuss the case study of Neem.

(*g*) Discuss the present and future scope of herbal drug industry.

(*h*) What are natural excipients ? Classify it with example.

(*i*) Describe process of preparation of phytosomes.

This question paper contains **2** printed pages]

PP—15—2023

FACULTY OF PHARMACEUTICAL SCIENCES AND TECHNOLOGY

B.Pharm. (Third Year) (Sixth Semester) EXAMINATION

JANUARY, 2024

BIOPHARMACEUTICS AND PHARMACOKINETICS

(BP-604T)

(Wednesday, 03-01-2024) **Time : 10.00 a.m. to 1.00 p.m.**

Time—3 *Hours* *Maximum Marks*—75

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Answer to the point only.

1. Answer the following : 10×2=20

(*i*) Define Bioavailability and Bioequivalence.

(*ii*) Enlist *three* methods which are used to define the K_{max} and V_{max}.

(*iii*) What is dosage regimen ?

(*iv*) Define Biopharmaceutics and Pharmacokinetics.

(*v*) Give applications of bioequivalence study.

(*vi*) Differentiate between active and passive form of drug absorption.

(*vii*) What is meant by therapeutic equivalence ?

(*viii*) What is Glomerular filtration rate ?

(*ix*) Enlist factors affecting protein drug binding.

(*x*) Enlist any *three* major factors which affect tissue permeability.

P.T.O.

2. Solve any *two* of the following : 2×10=20

(*a*) What are compartment model ? Give its advantages and disadvantages.

(*b*) Explain physicochemical factors affecting drug absorption.

(*c*) Discuss methods of measuring bioavailiability.

3. Solve any *seven* of the following : 7×5=35

(*i*) Explain caternary model along with its advantages and disadvantages.

(*ii*) What are applications of Renal clearance ?

(*iii*) Describe physiological modelling in detail.

(*iv*) Explain apparent volume of drug distribution in detail.

(*v*) Write a note on in vitro drug disolution model.

(*vi*) Explain one compartment open model extravascular administration.

(*vii*) Explain various factors causing non-linearity.

(*viii*) Explain open and closed models.

(*ix*) Elaborate loading and maintenance dose in detail.

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This question paper contains **2** printed pages]

PP—19—2023

FACULTY OF PHARMACEUTICAL SCIENCE AND TECHNOLOGY

B.Pharm. (VI Semester) EXAMINATION

JANUARY, 2024

PHARMACEUTICAL BIOTECHNOLOGY

Paper BP605T

(Friday, 5-1-2024) **Time : 10.00 a.m. to 1.00 p.m.**

Time—Three Hours *Maximum Marks*—75

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Figures to the right indicate full marks.

1. *All* questions are compulsory : 10×2=20

(*a*) Define Biotechnology.

(*b*) What is enzyme immobilisation ?

(*c*) Define protein engineering.

(*d*) Give applications of Biosensor.

(*e*) Define vectors.

(*f*) What is meant by vaccine ?

(*g*) Define humoral and cellular immunity.

(*h*) Give structure of MHC.

(*i*) Define hypersensitivity reactions.

(*j*) Give types of mutation.

P.T.O.

2. Solve any *two* of the following : 2×10=20

(*a*) Describe in detail fermentors of large scale with its diagrams.

(*b*) Describe in detail hybridoma technology and its applications.

(*c*) Describe in detail R-DNA technology and its applications.

3. Solve any *seven* : 7×5=35

(*a*) Give basic principles of genetic engineering.

(*b*) Give a brief introduction of PCR.

(*c*) Draw a neat labelled diagram of immunoglobulin.

(*d*) Describe in detail storage condition and stability of official vaccine.

(*e*) Describe in brief about blood products and plasma substitutes.

(*f*) Define Microbial Biotransformation and give its applications.

(*g*) Explain difference between Eukaryotes and Prokaryotes.

(*h*) Explain in detail production of penicillin.

(*i*) Explain in brief immune suppression.

This question paper contains **2** printed pages]

PP—26—2023

FACULTY OF SCIENCE AND TECHNOLOGY

B.Pharm. (Third Year) (Sixth Semester) EXAMINATION

JANUARY, 2024

PHARMACEUTICAL QUALITY ASSURANCE

Paper BP606T

(Monday, 8-1-2024) **Time : 10.00 a.m. to 1.00 p.m.**

Time—Three Hours *Maximum Marks—75*

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Answer to the point only.

(*iii*) Figures to the right indicate full marks.

1. Answer the following questions : 10×2=20

(*a*) What do you mean by IPQC ?

(*b*) Write the responsibilities of head of quality assurance.

(*c*) What are the objectives of ICH ?

(*d*) Write vision and mission of NABL.

(*e*) What do you mean by HVAC System ?

(*f*) Write the functions of packaging.

(*g*) Write in detail product recall procedure.

(*h*) Write importance of documentation in Pharmaceutical Industry.

(*i*) Write contents of Reports and Documents.

(*j*) What is Installation Qualification ?

P.T.O.

2. Solve any *two* of the following : 2×10=20

(*a*) Explain importance and general principles of Analytical Method Validation.

(*b*) Discuss in detail subpart D, F and G of good laboratory practices.

(*c*) Explain steps in ISO 14000 registration process.

3. Solve any seven of the following : 7×5=35

(*a*) Write full process of NABL accreditation.

(*b*) Describe elements of Total Quality Management.

(*c*) Describe in detail utilities and maintenance of sterile areas.

(*d*) Write in detail about 'Handling of return good and waste disposal'.

(*e*) Describe in detail "Good Warehousing Practice".

(*f*) Comment on 'Batch Formula Record' and 'Standard Operating Procedure'.

(*g*) Describe principle, scope and types of validation.

(*h*) Explain design, construction and plant layout of premises of pharmaceutical industry.

(*i*) Describe quality control test of rubber closure.

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IP—03—2023

FACULTY OF SCIENCE AND TECHNOLOGY (PHARMACEUTICAL SCIENCES)

B. Pharmacy (Sixth Semester) EXAMINATION

APRIL/MAY 2023

MEDICINAL CHEMISTRY-III

(Thursday, 04-05-2023) **Time : 10.00 a.m. to 1.00 p.m.**

Time— Three Hours *Maximum Marks*—75

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Draw structure, write examples/reactions whereever necessary.

1. Write answers for the following questions : 10×2=20

(*a*) What are aminoglycoside antibiotics ? Write example.

(*b*) Write chemistry of N_1 and N_4 substituted sulphonamides.

(*c*) Name and draw the heterocyclic ring present in :

(*i*) Pyrimethamine.

(*ii*) Nitrofurantoin.

(*d*) Enlist important macrolide antibiotics. Add a note on number of carbon present in its structural backbone or skeleton.

(*e*) Define terms with example :

(*i*) Lead molecule.

(*ii*) Pharmacophore.

P.T.O.

(*f*) What are bioprecursor portray ?

(*g*) Draw structure and write IUPAC name of dapson.

(*h*) What are USP and Oxford unit of antibiotic potency measurement ?

(*i*) Draw structure and write IUPAC name of any *one* anti-protozoa agent.

(*j*) What is chemical category of the following drugs :

(*i*) Amphotericin-B.

(*ii*) Proguanil.

2. Write answers of the following in detail :

(*a*) Write in detail about B-lactam antibiotics in terms of :

(*i*) Chemistry and stereochemistry.

(*ii*) Classification.

(*iii*) SAR.

(*b*) What are urinary tract anti-infective drugs ? Write SAR of quinolones and synthesis reaction of ciprofloxacin.

(*c*) Write chemical classification of anti-fungal drugs. Add a note on receptor target for each category. Write reaction for synthesis of tolnaftate.

3. Write answers of the following questions in brief (any **7**) : 7×5=35

(*a*) Enlist important physico-chemical parameters and respective equations used in QSAR. Explain any *one* with suitable example.

(*b*) What are folate reducates inhibitors ? Add a note on synergistic effects of sulphonamides and trimethoprim.

(*c*) Write IUPAC name and mode of action for Metronidazole.

(*d*) Write SAR of 4 amino quinolones as an antibacterial drugs.

(*e*) Write chemical classification of antiviral drugs. Add a note on challenges in development of newer antiviral drugs.

(*f*) What is effect of pH, pKa and ionization on :

(*i*) Sulphonamides.

(*ii*) Quinolones.

(*iii*) Tetracyclines.

(*g*) Write pharmaceutical importance of combinatorial chemistry.

(*h*) Write chemical classification of anti-TB drugs. Enlist target receptors for each category.

(*i*) Enlist different categories of anthelmentic drugs with example. Add a note on synthesis of mebendazole.

This question paper contains **2** printed pages]

IP—07—2023

FACULTY OF SCIENCE AND TECHNOLOGY

B.Pharm. (Sixth Semester) EXAMINATION

APRIL/MAY, 2023

PHARMACOLOGY

Paper III (BP-602T)

(Monday, 8-5-2023) **Time : 10.00 a.m. to 1.00 p.m.**

Time—Three Hours *Maximum Marks*—75

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) . Answer to the point only.

(*iii*) Illustrate your answer with neat sketch wherever necessary.

1. Answer the following : 10×2=20

(*a*) Define Antibiotics. Give its example.

(*b*) What are nasal decongestant drugs ? Give its examples.

(*c*) Define Chemotherapy.

(*d*) What is the source of streptomycin ?

(*e*) Write therapeutic uses of INH (Isoniazide).

(*f*) Define Mutagenicity.

(*g*) Write therapeutic uses of Salbutamol.

(*h*) Enlist the drugs used in the treatment of constipation.

(*i*) Define carminatives.

(*j*) What is the source of cephalosporins.

P.T.O.

2. Solve *two* of the following : 2×10=20

(*a*) What are anti-leprotic agents ? Classify it with suitable example. Explain pharmacology of dapsone.

(*b*) Write clinical symptoms and management of morphine compound poisoning.

(*c*) Define and classify anti-asthmatic drugs. Write pharmacology of Salbutamol.

3. Solve any *seven* of the following : 5×7=35

(*a*) Define and classify antiulcer drugs. Write mode of action of Omeprazole.

(*b*) What are antacids ? Write pharmacology of sodium bicarbonate.

(*c*) What are prokinetic drugs ? Write pharmacology of Metaclopramide.

(*d*) Discuss pharmacology of tetracycline.

(*e*) Explain pharmacotherapy of tuberculosis.

(*f*) What are antiviral agents ? Explain pharmacology of Zidovudine.

(*g*) Discuss various general principles of treatment of poisoning.

(*h*) Define and classify anti-asthmatic drugs. Write pharmacology of Salbutamol.

(*i*) Write pharmacology of Sulphonamides.

This question paper contains **2** printed pages]

IP—11—2023

FACULTY OF SCIENCE AND TECHNOLOGY

B. Pharm. (Sixth Semester) EXAMINATION

APRIL/MAY, 2023

HERBAL DRUG TECHNOLOGY

Paper–BP-603-T

(Wednesday, 10-5-2023) **Time : 10.00 a.m. to 1.00 p.m.**

Time— Three Hours *Maximum Marks*—75

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Answer to the point only.

(*iii*) Draw neat labelled diagrams wherever necessary.

(*iv*) Figures to right indicate full marks.

1. Solve the following : 10×2=20

(*a*) Define herbal medicine and herbal preparation.

(*b*) Define organic farming.

(*c*) Define Vati and Gutika.

(*d*) Write the biological source and uses of Ginger.

(*e*) What is herb-food interaction ? Give an example.

(*f*) Define excipients. Give any *two* examples of herbal excipients.

(*g*) What is Farmer's right and Breeder's right ?

(*h*) Enlist any *four* industries involved in production of herbal preparations.

(*i*) Write the biological source and marketed formulations of Amla.

(*j*) Enlist *four* herbal drugs used in skincare preparations.

P.T.O.

2. Solve any *two* of the following : 2×10=20

(*a*) Discuss stability testing of herbal drugs using ICH guidelines.

(*b*) Discuss role and health benefits of neutraceuticals used in CVS and diabetes.

(*c*) Discuss WHO guidelines for assessment and stability testing of herbal drugs.

3. Solve any *seven* of the following : 7×5=35

(*a*) Discuss method of preparation, evaluation and storage of bhasma.

(*b*) Describe process of selection, identification and authentication of herbal drug.

(*c*) Write the chemical constituents and user of Garlic, Honey and Ashwagandha.

(*d*) Discuss the possible herb-drug and herb-food interactions of hypericum.

(*e*) Write the basic principle of Ayurveda and Homeopathy system of medicine.

(*f*) Discuss the case study of curcuma.

(*g*) Discuss the present and future scope of herbal drug industry.

(*h*) Describe the process of preparation of phytosomes.

(*i*) What are binders ? Discuss role of binders from herbal origin with suitable example.

This question paper contains 2 printed pages]

IP—15—2023

FACULTY OF PHARMACEUTICAL SCIENCES

B. Pharm. (Third Year) (Sixth Semester) EXAMINATION

APRIL/MAY, 2023

BIOPHARMACEUTICS AND PHARMACOKINETIS

Paper BP604T

(Friday, 12-5-2023) **Time : 10.00 a.m. to 1.00 p.m.**

Time—Three Hours *Maximum Marks—75*

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Figures to the right indicate full marks.

(*iii*) Draw the diagrams wherever necessary.

1. Solve the following : 2×10=20

(*a*) Give Michaelis-Menten equation for non-linearity.

(*b*) What is sink condition ?

(*c*) Define total body clearance.

(*d*) What do you mean by bioequivalence ?

(*e*) Mention the objectives of bioavailability studies.

(*f*) Define biotransformation. Give drug metabolizing enzymes.

(*g*) Define gastric emptying.

P.T.O.

(*h*) Enlist pharmacokinetics and pharmacodynamic parameter.

(*i*) Give the factors affecting protein binding of drugs.

(*j*) Define absorption and distribution of drug.

2. Solve any *two* of the following : 2×10=20

(*a*) Explain non-renal of drug excretion of drugs.

(*b*) Explain any *five* methods for enhancement of bioavailability.

(*c*) Explain factors affecting absorption of drugs.

3. Solve any *seven* of the following : 7×5=35

(*a*) Give phase-I and phase-II reactions.

(*b*) What is pH partition hypothesis ?

(*c*) Give causes for non-linearity.

(*d*) What is loading dose and maintenance dose ?

(*e*) Explain one compartment open model intravenous bolus administration.

(*f*) Give factors affecting distribution of drugs.

(*g*) Explain binding of drugs to HSA.

(*h*) What is first pass effect metabolism ?

(*i*) Explain blood brain barrier.

This question paper contains 2 printed pages]

IP—19—2023

FACULTY OF SCIENCE AND TECHNOLOGY

B.Pharm. (VI Semester) EXAMINATION

APRIL/MAY, 2023

PHARMACEUTICAL BIOTECHNOLOGY

Paper (BP-605T)

(Monday, 15-5-2023) **Time : 10.00 a.m. to 1.00 p.m.**

Time—Three Hours *Maximum Marks*—75

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Figures to the right indicate full marks.

1. All questions are compulsory : 10×2=20

(*a*) Define vectors.

(*b*) Enlist types of vaccines.

(*c*) Define immunity.

(*d*) What do you mean by immobilization ?

(*e*) Draw well labelled diagram of immunoglobulines.

(*f*) Give stages involved in PCR.

(*g*) Give principle involved in piezoelectric biosensors.

(*h*) Give properties of Hybridoma cells.

(*i*) Give different types of ELISA.

(*j*) What do you understand by Biotechnology ?

P.T.O.

2. Solve any *two* : 10×2=20

(*a*) Give an account on *r*-DNA technology and its applications.

(*b*) Describe different methods of immobilization.

(*c*) Explain in detail PCR and its applications.

3. Solve any *seven* : 7×5=35

(*a*) Enlist different fermenters and its designs.

(*b*) How will you prepare viral vaccines ?

(*c*) Write a detailed note on humoral immunity.

(*d*) Define mutations. Explain with suitable example.

(*e*) Explain in detail difference between prokaryotes and eukaryotes.

(*f*) Describe in detail storage condition for official vaccines.

(*g*) Give a note on Blood and Blood Products.

(*h*) Explain different types of Immunoglobulines.

(*i*) Describe principle involved in Hybridoma Technology.

This question paper contains **2** printed pages]

IP—26—2023

FACULTY OF SCIENCE AND TECHNOLOGY

B.Pharma (Third Year) (Sixth Semester) EXAMINATION

APRIL/MAY, 2023

PHARMACEUTICAL QUALITY ASSURANCE

Paper BP606T

(Monday, 22-5-2023) **Time : 10.00 a.m. to 1.00 p.m.**

Time—Three Hours *Maximum Marks—75*

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Answer to the point only.

(*iii*) Figures to the right indicate full marks.

1. Answer the following questions : 10×2=20

(*a*) Write responsibilities of quality control department.

(*b*) Enlist the members of ICH organisation.

(*c*) What are critical quality attributes ?

(*d*) What is international organization for standardization ?

(*e*) What are objectives of NABL ?

(*f*) Write a note on 'Personnel Hygiene'

(*g*) What are contents of the labels of the materials in storage area ?

P.T.O.

(*h*) Enlist any *four* quality control test of secondary packaging material.

(*i*) What are reference materials as per GLP ?

(*j*) What are the objectives of product recall ?

2. Solve any *two* of the following : 2×10=20

(*a*) Explain philosophies of total Quality Management.

(*b*) Explain quality control test of glass containers.

(*c*) Discuss in detail qualifications of uv-visible spectrophotometer.

3. Solve any *seven* of the following : 7×5=35

(*a*) Describe steps of performing quality audit.

(*b*) Describe different types of validation.

(*c*) Describe purpose and principles of material management.

(*d*) Describe *four* phases of qualification of instruments.

(*e*) Write in detail about design and construction features of laboratory as per GLP.

(*f*) Describe process of NABL accreditation.

(*g*) Discuss the elements of ISO 9000.

(*h*) Give a brief overview of QSEM guidelines.

(*i*) Write the guidelines for evaluation of complaints.

This question paper contains **3** printed pages]

DP—03—2022

FACULTY OF SCIENCE AND TECHNOLOGY

B. Pharm (VI Semester) EXAMINATION

NOVEMBER/DECEMBER, 2022

MEDICINAL CHEMISTRY–III

(Tuesday, 27-12-2022) **Time : 10.00 a.m. to 1.00 p.m.**

Time—Three Hours *Maximum Marks*—75

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Draw structures and write chemical reactions wherever necessary.

(*iii*) Write examples wherever necessary.

1. Write answers of the following questions : 10×2=20

(*i*) Write important steps for the preparation and purification of antibiotics.

(*ii*) Draw structure and write IUPAC name of ethambutol.

(*iii*) Draw structure of Diethyl carbamazine.

(*iv*) Write reaction for synthesis of Dapsone.

(*v*) Write importance of pKa in terms of sulphonamides.

(*vi*) What is target receptor for quinolones and chloroquine.

(*vii*) Enlist the 4 drugs which bind to ribosomal subunits.

(*viii*) Write a note on β-cactamase (Beta).

(*ix*) Enlist the important steps involved in drug design.

(*x*) Sketch the malaria life cycle. Highlight the stages where drugs act.

P.T.O.

2. Write answers of the following in detail (any *two*) : 2×10=20

(*i*) Write in detail about chemistry, SAR and resistance in terms of Aminoglycosides.

(*ii*) Write classification of anti-viral drugs based on its chemistry. Add a note on SAR and mode of action of nucleoside and non-nucleoside anti-viral drugs.

(*iii*) Write in detail about chemical classification, chemistry and SAR of quinolones.

3. Answer the following questions in brief (any *seven*) : 7×5=35

(*i*) Write chemical classification of anti-malarial drugs. Add a note on chemistry of non-quinolone drugs.

(*ii*) Write a note on chemistry of different anthelmentic drugs with suitable example.

(*iii*) Write a note on QSAR and its importance in drug discovery with suitable example.

(*iv*) Draw structure, write IUPAC name and reaction of synthesis for tolnaftate.

(*v*) Write the name of heterocyclic ring present and target receptor for following drugs :

(*a*) Cloxacillin

(*b*) Cefpodoxin

(*c*) Metronidazole

(*d*) Isoniazide

(*e*) Amantidine.

(*vi*) Write a note on combinational chemistry in terms of drug design with suitable example.

(*vii*) Write chemical classification of antifungal drugs with examples. Add a note on chemistry of antifungal azoles.

(*viii*) Write a note on chemistry of macrocide antibiotics.

(*ix*) Enlist different category of anti-protozoal agents with suitable examples. Add a note on receptor targets for each category.

This question paper contains **2** printed pages]

DP—07—2022

FACULTY OF SCIENCE AND TECHNOLOGY

B. Pharm (VI Semester) EXAMINATION

NOVEMBER/DECEMBER, 2022

PHARMACOLOGY–III

Paper-BP602T

(Thursday, 29-12-2022) **Time : 10.00 a.m. to 1.00 p.m.**

Time—Three Hours *Maximum Marks*—75

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Answer to the point only.

(*iii*) Illustrate your answer with neat sketch wherever necessary.

1. Answer the following : 10×2=20

(*a*) Define analeptics with examples.

(*b*) What are nasal decongestant drugs ? Give its examples.

(*c*) Define acute and chronic toxicity.

(*d*) What is the source of Aminoglycosides ?

(*e*) Write therapeutics uses of omeprazole.

(*f*) Define circadian rhythm.

(*g*) What are anthelminitics ?

(*h*) Mention *four* classes of antibiotics acting by inhibiting protein synthesis.

(*i*) What are the differences between bronchial asthma and COPD ?

(*j*) Write adverse effect of cyclosporin.

P.T.O.

2. Solve any *two* of the following : 2×10=20

(*a*) What are laxative and purgatives ? Classify them with examples. Write the mechanism of action and uses of saline cathartics.

(*b*) Classify Antifungal agent with examples. Write the mechanism of action, adverse reactions and therapeutic uses of amphotericin B.

(*c*) What are aminoglycoside antibiotics ? Write the antimicrobial spectrum MOA, adverse reaction and therapeutic uses of streptomycin.

3. Solve any *seven* of the following : 7×5=35

(*a*) What are respiratory stimulant ? Explain pharmacology of any *one*.

(*b*) Explain the term Carcinogenicity and mutagenicity with examples.

(*c*) Write mechanism of action, adverse effect and uses of Methotrexate.

(*d*) What are sulfunamides ? Classify them with examples.

(*e*) Write signs, symptoms and treatment of morphine poisoning.

(*f*) Classify alkylating agents and write their mechanism of action.

(*g*) Write a note on causes and prevention of antimicrobial resistance.

(*h*) What are Immunosuppressant and Immunostimulant ? Give examples. Write their applications.

(*i*) Define and classify antiulcer drugs and write therapeutic uses of Lanciprazole.

This question paper contains **2** printed pages]

DP—11—2022

FACULTY OF SCIENCE AND TECHNOLOGY

B. Pharm (VI Semester) EXAMINATION

NOVEMBER/DECEMBER, 2022

HERBAL DRUG TECHNOLOGY

Paper-BP603T

(Saturday, 31-12-2022) **Time : 10.00 a.m. to 1.00 p.m.**

Time—Three Hours *Maximum Marks—75*

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Answer to the point only.

(*iii*) Draw neat labelled diagrams wherever necessary.

(*iv*) Figures to the right indicate full marks.

1. Solve the following : 10×2=20

(*a*) Define herbal drug and herbal drug preparation.

(*b*) Define Good agricultural practices.

(*c*) Define Churna. Enlist *four* characteristics of churna.

(*d*) Write the biological source and uses of garlic.

(*e*) What is herb-drug interaction ? Give an example.

(*f*) Define natural sweetners and colorants with example.

(*g*) What are antioxidants ? Give examples.

(*h*) Define Biopiracy.

(*i*) Enlist any *four* herbal cosmetic industries.

(*j*) Write the biological source and marketed formulations of Ashwagandha.

P.T.O.

2. Solve any *two* of the following : 2×10=20

(*a*) Discuss in detail Schedule-T.

(*b*) Discuss stability testing of herbal drugs using ICH guidelines.

(*c*) Discuss role and health benefits of neutraceuticals used in prevention of Cancer and CVS.

3. Solve any *seven* of the following : 7×5=35

(*a*) Discuss method of preparation, evaluation and storage of Arista.

(*b*) Describe authentication of herbal material by suitable example.

(*c*) Write the chemical constituents and uses of Honey, Ginseng and Amla.

(*d*) Discuss the possible herb-drug and herb-food interactions of Ephedra.

(*e*) Write the basic principle of Sidha and Homeopathy System of medicine.

(*f*) Discuss the case study of curcuma.

(*g*) Discuss the present and future scope of herbal drug industry.

(*h*) Write the method of preparation, evaluation, storage of herbal syrup with suitable example.

(*i*) Describe process of preparation of phytosomes.

This question paper contains **2** printed pages]

DP—15—2022

FACULTY OF PHARMACEUTICAL SCIENCE

B. Pharm. (Third Year) (Sixth Semester) EXAMINATION

JANUARY, 2023

BIOPHARMACEUTICS AND PHARMACOKINETICS

Paper (BP-604T)

(Thursday, 05-01-2023) **Time : 10.00 a.m. to 01.00 p.m.**

Time—Three Hours *Maximum Marks*—75

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Figures to the right indicate full marks.

(*iii*) Draw diagrams wherever necessary.

1. Solve the following : 10×2=20

(*a*) Define Phagocytosis and Pinocytosis.

(*b*) Define renal clearance.

(*c*) Define the term Bioequivalence.

(*d*) Give the pharmacokinetic parameters.

(*e*) Give the examples of drug-drug interaction.

(*f*) Define optimum dosage regimen.

(*g*) Give the advantages and disadvantages of non-compartmental models.

(*h*) Give the examples of drug excreting in saliva.

P.T.O.

(*i*) Enlist theories of drug dissolution.

(*j*) Define apparent volume of distribution.

2. Solve any *two* of the following : 2×10=20

(*a*) Enlist factors affecting protein drug binding and explain in detail drug related factors.

(*b*) Discuss in detail factors affecting drug distribution.

(*c*) Explain in brief about pH-partition hypothesis.

3. Solve any *seven* of the following : 7×5=35

(*a*) Explain factors affecting Gastric emptying.

(*b*) Give the significance of protein drug binding.

(*c*) Explain Michaelis-Menten equation.

(*d*) Write about phase-I and phase-II reactions.

(*e*) Explain biliary excretion of drugs.

(*f*) Explain causes of non-linearity.

(*g*) Explain factors affecting biotransformation of drugs.

(*h*) Define gastric emptying. Give its parameters.

(*i*) Explain different sites of HSA Binding.

This question paper contains **2** printed pages]

DP—19—2022

FACULTY OF SCIENCE & TECHNOLOGY

B. Pharm. (Sixth Semester) EXAMINATION

JANUARY, 2023

PHARMACEUTICAL BIOTECHNOLOGY

(Saturday, 07-01-2023) **Time : 10.00 a.m. to 01.00 p.m.**

Time—Three Hours *Maximum Marks—75*

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Figures to the right indicate full marks.

1. Solve the following : 10×2=20

(*a*) Define pharmaceutical biotechnology.

(*b*) What are Enzymes ?

(*c*) Define Biosensors.

(*d*) Enlist stages of genetic engineering.

(*e*) Enlist different types of PCR.

(*f*) Define Immunoglobulines.

(*g*) What is ELIZA ?

(*h*) Differentiate between Prokaryotes & Eukaryotes.

(*i*) Differentiate between culture media and production media.

(*j*) Define hybridoma cells.

P.T.O.

2. Solve any *two* : 10×2=20

(*a*) Explain in detail production of mono clonal and antibodies.

(*b*) Write in detail on Industrial production of :

(*i*) Protease

(*ii*) Interferon

(*c*) Give an account of Industrial Production of Penicilline.

3. Solve any *seven* of the following : 7×5=35

(*a*) Write any *two* methods of Enzyme Immobilization.

(*b*) Explain basic principle of genetic engineering.

(*c*) Write detailed note on cellular immunity.

(*d*) What are various storage conditions for vaccines ?

(*e*) What are mutations ? Give their types. Explain any *one*.

(*f*) Give an account on fermenter and its designs.

(*g*) How will you produce Vitamin D12 ?

(*h*) Give different reactions involved in microbial biotransformations.

(*i*) How will you prepare viral vaccines ?

This question paper contains **2** printed pages]

DP—26—2022

FACULTY OF SCIENCE & TECHNOLOGY

B. Pharm. (Third Year) (Sixth Semester) EXAMINATION

JANUARY, 2023

PHARMACEUTICAL QUALITY ASSURANCE

Paper (BP-606T)

(Saturday, 14-01-2023) **Time : 10.00 a.m. to 1.00 p.m.**

Time—Three Hours *Maximum Marks*—75

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Answer to the point only.

(*iii*) Figures to the right indicates full marks.

1. Answer the following : 10×2=20

(*a*) Define :

(*i*) Quality assurance

(*ii*) Concept paper.

(*b*) What is meant by QbD ?

(*c*) Write benefits of ISO 9000.

(*d*) What are the purchase specification of equipments ?

(*e*) Comment on 'secondary packing materials'.

(*f*) What is quality audit ?

P.T.O.

(*g*) Write importance of validation.

(*h*) Write a note on 'Waste disposal'.

(*i*) What is subpart A of GLP ?

(*j*) What are the Ancillary areas ?

2. Solve any *two* of the following : 2×10=20

(*a*) Explain the components of GMP.

(*b*) Discuss in detail qualifications of UV-visible spectrophotometer.

(*c*) Describe quality control test of rubber closure.

3. Solve any *seven* of the following : 7×5=35

(*a*) Describe the process of harmonization.

(*b*) Write principle and procedures of NABL accreditation.

(*c*) Write in detail about maintenance of stores for raw materials.

(*d*) Describe Animal Care facilities as per GLP.

(*e*) Describe procedure for calibration of pH meter.

(*f*) Describe the elements of TQM.

(*g*) Write in detail about Master formula record.

(*h*) Write purpose, need and principles of Material Management.

(*i*) Comment on 'Disqualification of Testing Facilities'.

This question paper contains 3 printed pages]

VO—07—2022

FACULTY OF SCIENCE AND TECHNOLOGY

B.Pharm. (VI Sem.) EXAMINATION

JUNE/JULY, 2022

MEDICINAL CHEMISTRY–III

Paper BP601T

(Wednesday, 29-6-2022) **Time : 9.30 a.m. to 1.15 p.m.**

Time—3.45 *Hours* *Maximum Marks*—75

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Draw structure wherever necessary.

1. Solve the following : 10×2=20

(1) Keto-enol tautomerism is observed in :

(*a*) Macrolide antibiotics

(*b*) Penicillins

(*c*) Tetracycline

(*d*) Chloramphenicol.

(2) Which one of the following is not a first line drug for treating tuberculosis ?

(*a*) Isoniazide

(*b*) Rifampin

(*c*) Cycloserine

(*d*) Pyrazinamide

(3) Which isomer of chloramphenicol is active ?

P.T.O.

(4) Fluoroquinolones are indicated for all of the following *except*.

(*a*) Urinary tract infections

(*b*) Tuberculosis

(*c*) Bone infections

(*d*) Bronchial asthma

(5) Which one of the following is an antifungal antibiotic ?

(*a*) Naftifine

(*b*) S. fluocytosine

(*c*) Nystatin

(*d*) Nafimidone

(6) What do you mean by mutual prodrugs ?

(7) QSAR method involves :

(*a*) Target structure

(*b*) Target properties

(*c*) Ligand X-ray structure

(*d*) Ligand properties

(8) Name the ring presents in metronidazole and diloxanide.

(9) Give structure and physicochemical properties of mebendazole.

(10) What is co-trimoxazole ?

2. Solve the following (any *two*) : 2×10=20

(*a*) Define antibiotic. Classify antibiotics on the basis of mechanism of action. Discuss SAR of streptomycin.

(*b*) Discuss SAR and mode of action of benzimidazole based anhelmintic agents.

(*c*) What are antiamoebic agents ? Classify them with suitable examples. Sketch down synthesis and mechanism of action of metronidazole.

3. Solve the following (any *seven*) : 7×5=35

(*a*) Explain the effect of strong acid and strong base on tetracycline.

(*b*) Discuss in brief degradation of penicillins.

(*c*) Discuss in brief chemistry of beta lactum antibiotics.

(*d*) How will you synthesize ciprofloxacin ? Give its mode of action.

(*e*) Sketch out synthesis of metronidazole. Give its category and IUPAC name.

(*f*) Explain mode of action of sulfonamides.

(*g*) Sulfonamides and trimethoprim shows synergestic action. Explain.

(*h*) What is the importance of substituents of 6th position of beta lactum ring in development of penicillinase resistant penicillins.

(*i*) How will you classify different prodrugs ? Explain bipartate prodrugs.

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This question paper contains **2** printed pages]

VO—15—2022

FACULTY OF SCIENCE AND TECHNOLOGY

B. Pharm. (III Year) (VI Sem.) EXAMINATION

JUNE/JULY, 2022

PHARMACOLOGY–III

(Friday, 1-7-2022) **Time : 9.30 a.m. to 1.15 p.m.**

Time—3.45 *Hours* *Maximum Marks*—75

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Draw a neat labelled diagram whenever necessary.

(*iii*) Answer to the point only.

1. Answer the following : 10×2=20

(*a*) Enlist the drugs used in management of COPD.

(*b*) Define antibiotic and chemotherapy.

(*c*) Classify antifungal agent with examples.

(*d*) Give the treatment of syphillis.

(*e*) Define Genotoxicity and teratogenecity with examples.

(*f*) Give treatment of organophospherous poisoning.

(*g*) Define biological clock and Rhythm.

(*h*) What are appetite stimulant and suppresant ?

(*i*) Give adverse effects of chloramphinicol.

(*j*) Why penecillin and probencid used in combination in vineral diseases.

P.T.O.

2. Long answer questions (any *two*) : 2×10=20

(*i*) Classify antimicrotrial agents on the basis of mechanism of action. Give mechanism, adverse effect and uses of penecillins.

(*ii*) Explain in detail pharmacology of chloroquineland explain malaria cycle.

(*iii*) (*a*) Explain pharmacotherapy of Asthma.

(*b*) Classify antiulcer drugs with examples. Give mechanism of action and side effect of cimetidine.

3. Short answer questions (any *seven) :* 7×5=35

(*i*) Write drugs used in treatment of diarrhoea. Give mechanism of action and uses of any *one*.

(*ii*) Give mechanism, adverse effect and uses of sulphadoxim.

(*iii*) Write pharmacological account of quinolones.

(*iv*) Classify antileprotic agents with example. Give mechanism and side effect of clofazamine.

(*v*) Classify anti-cancer agents with examples.

(*vi*) Explain the role of glucocorticoid as immunosuppressive agents.

(*vii*) Write a note on chronotherapy.

(*viii*) Give clinical symptoms and management of Barbiturates and lead poisoning.

(*ix*) Explain in detail pharmacology of Zudovudin.

This question paper contains **2** printed pages]

VO—23—2022

FACULTY OF SCIENCE AND TECHNOLOGY

B. Pharm. (Third Year) (Sixth Semester) EXAMINATION

MAY/JUNE, 2022

HERBAL DRUG TECHNOLOGY

Paper–BP 603T

(Monday, 4-7-2022) **Time : 9.30 a.m. to 1.15 p.m.**

Time— 3.45 *Hours* *Maximum Marks*—75

N.B. :— (*i*) Write the answer to the point only.

(*ii*) Figures to the right indicate full marks.

1. Answer all the questions : 10×2=20

(*a*) Enlist various methods for pest control.

(*b*) What are the effects of tridoshas on human health ?

(*c*) Give the method of preprartion of Phytosomes. (any *one*)

(*d*) What is primary processing of herbal raw materials ?

(*e*) How will you prepare Lehyas ?

(*f*) Define :

(*i*) Herb

(*ii*) Herbal drug preparation.

(*g*) What are the health benefits of Ginger ?

(*h*) Give the importance of organic farming.

(*i*) What is Bioinsecticides ?

(*j*) Write down the objectives of GMP.

P.T.O.

2. Long answer questions. (Answer *two* out of *three*) : 2×10=20

(*a*) Explain in detailed about the nutraceuticals used in Cancer and Cardiovasculor diseases.

(*b*) Give a brief account of plant based industries and institutions involved in work on medicinal and acromatic plants in India.

(*c*) What are excipients ? Give it's detailed classification.

3. Short answer questions (Answer *seven* out of *nine*) : 7×5=35

(*a*) Write down the general method of preparation and standardization of Churna.

(*b*) What are the possible interactions of :

(*i*) Kava-Kava

(*ii*) Hypercium.

(*c*) Explain good agricultural practices in cultivation of medicinal plant.

(*d*) Discuss raw materials of herbal origin used in skin care product.

(*e*) Make a short note on documentation and record.

(*f*) Explain regulations of manufacture of ASV drug.

(*g*) Discuss syrup as a Conventional Herbal Formulation.

(*h*) Write a note on cse study of Neem.

(*i*) Give the general aspects, market growth and scop[e of nutraceuticals.

This question paper contains **2** printed pages]

VO—31—2022

FACULTY OF SCIENCE AND TECHNOLOGY

B.Pharma. (Third Year) (Sixth Semester) EXAMINATION

JUNE/JULY, 2022

BIOPHARMACEUTICS AND PHARMACOKINETICS

(Wednesday, 6-7-2022) **Time : 9.30 a.m. to 1.15 p.m.**

Time— 3.45 *Hours* *Maximum Marks*—75

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Figures to the right indicate full marks.

(*iii*) Draw neat labelled diagram wherever necessary.

1. Answer *all* the questions : 10×2=20

(*a*) Define the term absorption of drug. Enlist any *two* mechanisms of the same.

(*b*) What is volume of distribution ? Give its significance.

(*c*) Enlist the names of various drug binding sites on HSA.

(*d*) What are Xeobiotics ?

(*e*) Define the terms :

(*i*) Bioavailability and

(*ii*) Bioequivalance.

(*f*) What is C_{max} and t_{max} ?

(*g*) What is the flip-flop phenomenon and when it is observed ?

(*h*) State Michaelis Menten equation.

(*i*) What are the limitations of pH partition Hypothesis ?

(*j*) Why is the placental barrier not as effective as BBB ?

P.T.O.

2. Long answer questions (Answer any *two* out of the of three) : 2×10=20

(*a*) Explain patient related factors affecting drug absorption.

(*b*) Describe one-compartment open model. How the elimination rate constant and half life in determined for a drug follows one compartment model kinetics ?

(*c*) Explain various methods to enhance dissolution rate of poorly soluble drugs ?

3. Short answer questions (Anwer 7 out of 9) : 7×5=35

(*a*) Explain in short the factors causing Non-linearity.

(*b*) Explain Inavitro-Invivo Correlation in bioavailability study.

(*c*) What is two compartments model ? Explain the same for Intravenous infusion.

(*d*) Explain the following physicochemical parameters affecing drug absorption :

(*i*) Particle size of surface are a

(*ii*) Polymorphism.

(*e*) Note on following physiologic barriers :

(*i*) Simple cell membrane barriers

(*ii*) Blood brain barrier.

(*f*) Explain significance of protein binding of drugs.

(*g*) Write about oxidative reactions of phase I metabolism.

(*h*) Define the process Dissolution. Write a note on diffusion layer model theory.

(*i*) Discuss chemical factors affecting biotransformation of drugs.

This question paper contains **2** printed pages]

VO—36—2022

FACULTY OF SCIENCE & TECHNOLOGY

B. Pharma (Sixth Semester) EXAMINATION

MAY/JUNE, 2022

PHARMACEUTICAL BIOTECHNOLOGY

(BP605T)

(Friday, 8-7-2022) **Time : 09.30 a.m. to 01.15 p.m.**

Time— 3.45 *Hours* *Maximum Marks*—75

N.B. :— (*i*) Q. No. **1** is compulsory.

(*ii*) Attempt *all* the questions.

1. Answer *all* the questions : 10×2=20

(*a*) Define antigenecity.

(*b*) Give the sources of protease.

(*c*) Write the properties of IgA.

(*d*) List out pharmaceuticals derived by *r*DNA technology.

(*e*) What is meant by species immunity ?

(*f*) Give the ideal characteristics for vectors.

(*g*) What do you mean by Michaelis-Menten's constant ?

(*h*) Classify MHC with their gene products.

(*i*) Enlist the classes of enzyme with examples.

(*j*) Define mutation. Give the examples of mutogen.

2. Long answer questions (Answer 2 out of 3) : 2×10=20

(*a*) Explain the microbial biotransformation with its applications.

(*b*) Discuss antiviral mechanism, methods of production and applications of interferon.

(*c*) Define biotechnology. Give a note on their major fields.

P.T.O.

3. Short answer questions (Answer 7 out of 9) : 7×5=35

(*a*) Define vaccines. Give their classification with example.

(*b*) Write the principle and procedure involved in ELIZA.

(*c*) What is PCR ? Give their applications.

(*d*) Write about protein engineering with its methods.

(*e*) Give a note on control test for blood products.

(*f*) Explain the production of Hepatitis B vaccines.

(*g*) Give the general requirement for fermentation.

(*h*) Write the advantages and disadvantages of enzyme immobilization.

(*i*) Describe in detail, the production of glutamic acid.

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This question paper contains **2** printed pages]

VO—38—2022

FACULTY OF SCIENCE AND TECHNOLOGY

B.Pharm. (Third Year) (Sixth Semestre) EXAMINATION

JUNE/JULY, 2022

QUALITY ASSURANCE

(Saturday, 16-07-2022) **Time : 9.30 a.m. to 1.15 p.m.**

Time— 3.45 *Hours* *Maximum Marks*—75

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Answer to the point only.

1. Answer *all* the questions : 20

(*a*) What is TQM ?

(*b*) Define calibration.

(*c*) Give the objectives of QBD.

(*d*) Why there is need for material management ?

(*e*) Give the benefits of ISO9000.

(*f*) What is important of documentation ?

(*g*) Define GLP.

(*h*) What do you mean by HVAC system ?

(*i*) Give the importance of packaging.

(*j*) Enlist *five* characteristics that should be present in quality product.

P.T.O.

2. Long answer questions (Answer two out of **3**) : 2×10=20

(*a*) Add a detailed note on process of Harmonization.

(*b*) Explain the concept of GMP in detail.

(*c*) Give the quality control tests for glass containers.

3. Short answer questions (anwer 7 out of 9) : 5×7=35

(*a*) Add a note on principles of Material Management.

(*b*) Give the regulatory guidelines for evaluation of camplaints.

(*c*) Explain different steps in ISO14000 registration process.

(*d*) Give detailed account of NABL accreditation process.

(*e*) Comment on Training and Hygiene in pharmaceutical industry.

(*f*) Add a note on maintenance of stores for raw materials.

(*g*) Give the quality control tests for plastic containers.

(*h*) What are the different elements of QBD programme ?

(*i*) Comment on types of Validation.

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