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IM—03—2025

FACULTY OF SCIENCE AND TECHNOLOGY

B.Pharm. (Sixth Semester) EXAMINATION

NOVEMBER/DECEMBER, 2025

MEDICINAL CHEMISTRY

Paper III (BP601T)

(Wednesday, 12-11-2025) **Time : 10.00 a.m. to 1.00 p.m.**

Time—3 *Hours* *Maximum Marks*—75

N.B. :— (1) *All* questions are compulsory.

(2) Figures to the right indicate full marks.

1. Answer the following : 10×2=20

(*a*) Draw the structure of any *one* drug come under Carboxy Penicillin and Amino Pencillin class of Penicillin.

(*b*) Give ideal requirement of β-lactum antibiotic.

(*c*) Discuss in brief about metabolic activation of Prodrug.

(*d*) Sketch the synthesis of Chloroquine.

(*e*) Define and classify antitubercular agents on the basis of chemical moiety.

P.T.O.

(*f*) Give MOA and uses of Ciprofloxacin.

(*g*) Outline synthesis of Tolnaftate.

(*h*) Write a brief note on life cycle of *Entamoeba histolytica*.

(*i*) Give the composition of Cotrimoxazole.

(*j*) Differentiate the basic concepts of 'analogues' and 'prodrugs' with the help of suitable examples of parent drug molecule.

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

(*a*) Classify Antibiotic with suitable example of each class. Discuss briefly about MOA of β-lactum antibiotics.

(*b*) Discuss in detail about SAR and MOA of quinolones antibacterial agent. Sketch out the synthesis of nitrofurantoin.

(*c*) (*i*) Discuss about life cycle of virus. Write problem faced in development of antiviral agent.

(*ii*) Discuss about malarial life cycle.

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

(*a*) Discuss about various degradation products of penicillin.

(*b*) Discuss chemistry of macrolide class of antibiotic. Give outline synthesis of chloramphenicol.

(*c*) Explain SAR of Quinolones as antimalarial agents.

(*d*) Explain the synergetic effect of cotrimoxazole in detail. Give the outline synthesis of sulphamethoxazole.

(*e*) (*i*) Differentiate between Solid and Solution phase synthesis.

(*ii*) Molecular modelling.

(*f*) What is the importance of pKa in designing of sulphonamide ?

(*g*) Draw the structure and identify heterocyclic moiety present in the following drugs :

(*i*) Idoxuridine

(*ii*) Ethionamide

(*iii*) Metronidazole

(*iv*) DEC

(*v*) Sparfloxacin.

(*h*) Discuss about concept and applications of combinatorial chemistry.

(*i*) Give the synthesis of ciprofloxacin and chloroquine.

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IM—07—2025

FACULTY OF SCIENCE AND TECHNOLOGY

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

NOVEMBER/DECEMBER, 2025

PHARMACOLOGY

Paper III (BP602T)

(Friday, 14-11-2025) **Time : 10.00 a.m. to 1.00 p.m.**

Time—3 *Hours* *Maximum Marks*—75

N.B. :— (1) *All* questions are compulsory.

(2) Figures to the right indicate full marks.

(3) Answer to the point only.

1. Answer *all* questions : 10×2=20

(*a*) Define expectorants. Give *two* examples.

(*b*) What is Ulcer ? Give *four* examples of drugs used in Ulcer.

(*c*) Enlist the diseases that transmitted sexually.

(*d*) Define the terms Teratogenicity and Mutagenicity.

(*e*) What are drugs used in constipation and diarrhoea ?

P.T.O.

(f) Define the term Respiratory stimulants and write *two* examples of it.

(g) What are Anthelmintics ? Classify it with suitable examples.

(h) Define the terms toxins and toxicology.

(i) Write the uses of Aminoglycosides.

(j) Define and classify expectorants.

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

(a) Write a detailed note on Penicillins.

(b) Classify the agents used in the treatment of peptic ulcer disease. Write about the pharmacological actions and therapeutic actions and therapeutic uses of Ranitidine and Omeprazole.

(c) Classify anticancer agents and explain in detail about mechanism of action, therapeutic uses and adverse effects of antimetabolites.

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

(a) Explain the general principles of treatment of poisoning.

(b) Write a short note on immunosuppresants.

(c) Write about the treatment of urinary tract infections.

(d) Give in detail about the management of COPD.

(e) Define Antimalarial drugs and explain the pharmacology of it.

(f) Define emetics and anti-emetics. Write the pharmacological actions, mechanism of actions and uses of ondansetron.

(g) Give in detail pharmacology of tetracycline.

(h) Define Toxicology and explain the types of toxicity studies.

(i) What is cotrimoxazole ? Write its mechanism of action, uses and advantages.

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IM—11—2025

FACULTY OF SCIENCE AND TECHNOLOGY

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

NOVEMBER/DECEMBER, 2025

HERBAL DRUG TECHNOLOGY

Paper BP603T

(Monday, 17-11-2025) **Time : 10.00 a.m. to 1.00 p.m.**

Time—3 *Hours* *Maximum Marks*—75

N.B. :— (1) Write the answers to the point only.

(2) Figures to the right indicate full marks.

(3) *All* questions are compulsory.

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

(*a*) Define :

(*i*) Organic Farming

(*ii*) Neutraceuticals.

(*b*) Give the characteristics of herbal hair dyes.

(*c*) Enlist antioxidants used in cosmetic formulations.

P.T.O.

(*d*) Write the source, active chemical constituent and uses of alfalfa.

(*e*) Enumerate the significance of estimation of microbial content in herbal drug.

(*f*) Outline advantages of biopesticides.

(*g*) What is master formula record ?

(*h*) Mention the members of ASUDTAB.

(*i*) What do you mean by bioprospecting and biopiracy ?

(*j*) Name any *one* natural sweetner with its biological sources.

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

(*a*) Describe in detail morphological and microscopical methods of identification and authentication of herbal medicine.

(*b*) Explain in detail about patenting of traditional knowledge and natural products with example.

(*c*) Write in brief about concept of Ayurveda system in medicine.

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

(*a*) Write a note on 'Marana' process.

(*b*) Explain the health benefits and role of spirulina and chicory.

(*c*) Discuss the objectives and components of GMP.

(*d*) What is the role of bleaching agents and protective agents from herbs in the preparation of cosmetics ? Explain with example.

(*e*) Give the possible side effects and interaction of ginkobiloloba and ginseng.

(*f*) Define and classify neutraceuticals along with examples.

(*g*) Write short note on Phytosomes.

(*h*) Explain about infrastructural requirements of herbal drugs as per schedule T.

(*i*) Elaborate ICH guidelines for assessment of herbal drugs.

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IM—15—2025

FACULTY OF PHARMACEUTICAL SCIENCES AND TECHNOLOGY

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

NOVEMBER/DECEMBER, 2025

BIOPHARMACEUTICS AND PHARMACOKINETICS

Paper BP604T

(Wednesday, 19-11-2025) **Time : 10.00 a.m. to 1.00 p.m.**

Time—3 *Hours* *Maximum Marks*—75

N.B. :— (1) *All* questions are compulsory.

(2) Answer to the point only.

(3) Draw well labelled diagram wherever necessary.

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

(*a*) Differentiate between protein drug binding and tissue drug binding.

(*b*) Write the modified Noyes Whitney equation.

(*c*) What do you mean by apparent volume of distribution ?

P.T.O.

(*d*) Why does Compartment modelling excretion takes place from central compartment ?

(*e*) Give the example for monoexponential equation and biexpotential equation.

(*f*) What is Multicompartment model ?

(*g*) Write the tests to determine non-linearity.

(*h*) Differentiate between absolute and relative bioavailability.

(*i*) Give the schematic representation of one compartment open model-oral.

(*j*) Write the difference between AUC and AUMC.

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

(*a*) Define absorption and discuss the various doses form related and patient related factors affecting drug absorption.

(*b*) Discuss in detail two compartment open model for IV Bolus administration. Give the schematic representation, graph and equation for the same.

(*c*) Explain in brief various physiological barrier to drug distribution.

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

(*a*) Explain absorption of drug from extravascular route.

(*b*) Explain the factors affecting excretion of drug.

(*c*) Discuss about the binding of drugs to HSA.

(*d*) Write a note on catenary and mammillary models.

(*e*) Give Michaelis-Menten equation. How can K_m and V_{max} be estimated ?

(*f*) Give the schematic representation of plasma drug concentration time profile and explain in brief the different pharmacokinetics parameters.

(*g*) Enlist the various methods of assessment of bioavailability and explain any *two*.

(*h*) Discuss in brief the various non-renal routes of drug excretion.

(*i*) Write a note on statistical moment's theory.

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IM—19—2025

FACULTY OF SCIENCE AND TECHNOLOGY

B.Pharm. (Sixth Semester) EXAMINATION

NOVEMBER/DECEMBER, 2025

PHARMACEUTICAL BIOTECHNOLOGY

Paper BP605T

(Friday, 21-11-2025) **Time : 10.00 a.m. to 1.00 p.m.**

Time—3 *Hours* *Maximum Marks*—75

N.B. :— (1) *All* questions are compulsory.

(2) Figures to the right indicate full marks.

(3) Answer to the point only.

1. Solve the following : 10×2=20

(*a*) Define immunity. List the types of immunity.

(*b*) List any *four* factors that affect fermentation process.

(*c*) Mention any *four* advantages of immobilized enzymes.

(*d*) Enlist the different types of vectors used in genetic of engineering.

(*e*) Name *two* methods of preparation of viral vaccine.

(*f*) What is hypersensitivity ? Write its types.

(*g*) Define plasmids with examples.

P.T.O.

(h) How fermentation equipments are sterilized ?

(i) Give the applications of plasma substitutes.

(j) Write any *four* pharmaceutical applications of Biotechnology.

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

(a) Explain different methods of enzyme immobilization with their advantages and disadvantages.

(b) Explain in detail methods of gene transfer.

(c) Describe in detail production of Human Insulin and Blood Products.

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

(a) Write in detail about PCR.

(b) Explain in detail production of penicillin and glutamic acid.

(c) Write scope, importance and application of biotechnology.

(d) Write a note on plasmid vector.

(e) Explain in detail production of vaccine Hepatitis B.

(f) Which factors are responsible for solid state fermentation ?

(g) How to increase the stability and biological activity of protein ?

(h) Describe in detail about restriction endonucleases.

(i) Explain in detail Immuno-blotting techniques (any *two*).