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NM—03—2026

FACULTY OF SCIENCE AND TECHNOLOGY

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

APRIL/MAY, 2026

MEDICINAL CHEMISTRY—III

Paper BP601T

(Friday, 17-4-2026) **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) Draw neat labelled diagram and reaction wherever necessary.

1. Answer the following : 20

(*a*) Give outline synthesis of PAS.

(*b*) Enlist various physico-chemical and electronic parameter of QSAR.

(*c*) Draw the structure, IUPAC Name and uses of oxamniquine.

(*d*) Draw any *one* structure of carboxy penicillin and aminopenicillin class of drug.

(*e*) Draw any *two* structures of antifungal agent containing Azole moiety.

P.T.O.

(*f*) Give outline synthesis of chloramphenical.

(*g*) Draw structure and name of degradation product of penicillin.

(*h*) Give in brief about rational approach of drug design.

(*i*) Draw the structure and their IUPAC name of Azido-group containing anti-TB agent.

(*j*) Write applications of prodrug design.

2. Solve any *two* of the following : 20

(*a*) Write classification of sulphonamide on the basis of chemical. Explain SAR and MOA of it.

(*b*) (*i*) Write structural requirement and SAR of quinolines as antimalarial agent.

(*ii*) Draw structure and its IUPAC name of the following drugs : Iodoxuridine, Ciprofloxacin, Pyrazinamide, Dapsone and Niclosamide.

(*c*) Classify β-lactum antibiotic and explain its mechanism of action. Discuss about β-lactamase inhibitor with suitable example.

3. Solve any *seven* of the following : 35

(*a*) Discuss structural requirement of tetracycline. Give SAR and its use of Tetracycline.

(*b*) Draw life cycle of Malaria and give dosage regimen for the treatment at different stage of cycle.

(*c*) Outline synthesis of Chloroquine and Metronidazole.

(*d*) Write structure, IUPAC name, SAR and MOA of Ethambutol.

(*e*) Write a note on Azole antifungal agents.

(*f*) Give SAR of quinolone class of anti-infective agents. Draw any *one* structure of second generation quinolones.

(*g*) Write a note on problem faced in development of antiviral agent. Sketch out the synthesis of Acyclovir.

(*h*) What is combinatorial synthesis ? Write a note on solid supported synthesis.

(*i*) Classify antifungal agent on the chemical basis. Give SAR of 5-nitromidazole class.

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NM—07—2026

FACULTY OF SCIENCE AND TECHNOLOGY

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

APRIL/MAY, 2026

PHARMACOLOGY—III

(Monday, 20-4-2026) (BP602T) **Time : 10.00 a.m. to 1.00 p.m.**

Time—3 *Hours* *Maximum Marks*—75

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

(2) Answers to the point only.

(3) Illustrate your answer with neat sketch wherever necessary.

1. Answer the following (any *ten*) : 10×2=20

(*a*) Differentiate between bronchial asthma and COPD.

(*b*) What are the antacids ? Give examples.

(*c*) What is DOTs therapy ?

(*d*) What are immunosupressants and immunostimulants ?

(*e*) Mention common causative organism for UTI.

P.T.O.

(*f*) Explain the term chronopharmacology.

(*g*) Define acute toxicity.

(*h*) What is biological clock ?

(*i*) What are mucolytics ? Give example.

(*j*) Mention *four* antidiarrheals.

(*k*) What are probiotics ? Give examples.

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

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

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

(*c*) Classify anti-fungal agents with examples. Write MOA, adverse effects and uses of triazoles.

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

(*a*) Classify antiviral agents with examples. Write the adverse effects and uses of acyclovir.

(*b*) What are broad spectral antibiotics ? Give examples. Write MOA of chloramphenicol.

(*c*) Classify anti TB drugs with examples. Write the MOA, adverse effects and uses of INH.

(*d*) Classify anticancer agents with examples.

(*e*) Outline the steps involved in the management of acute poisoning.

(*f*) Classify sulphonamides with examples. Write the mechanism of action and uses of co-trimoxazole.

(*g*) Write MOA, adverse effects and uses of amphotericin-B.

(*h*) Write briefly on monoclonal antibodies with example.

(*i*) Write the sign, symptoms and treatment of morphine poisonings.

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NM—11—2026

FACULTY OF SCIENCE AND TECHNOLOGY

B.Pharm. (Sixth Semester) EXAMINATION

APRIL/MAY, 2026

HERBAL DRUG TECHNOLOGY

(Wednesday, 22-4-2026) CBP603T) **Time : 10.00 a.m. to 1.00 p.m.**

Time—3 *Hours* *Maximum Marks*—75

N.B. :— (*i*) Figures to the right indicate full marks.

(*ii*) Write the answers to the point only.

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

(*a*) Define biofertilizers with example.

(*b*) Enlist any *four* plant based industries in India.

(*c*) Write objectives of GMP.

(*d*) How will you prepare Lebyas ?

(*e*) Define marker compound. Give its example.

(*f*) Write source and uses of honey.

P.T.O.

(*g*) Differentiate between Arishta and Asava.

(*h*) What is bioprospecting and biopiracy ?

(*i*) Mention *two* examples of neutraceuticals used in the treatment of cancer.

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

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

(*a*) Define and classify Herbal excipients. Describe the role of Herbal excipients in cosmetics.

(*b*) Enumerate basic concept principle, diagnosis and method of treatment in Ayurveda.

(*c*) Explain in detail about neutraceuticals used in Diabetes and Cardiovascular diseases.

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

(*a*) What are the possible interaction of :

(*i*) Kava-Kava

(*ii*) Hypericum

(*b*) Discuss the machinery and equipment required for herbal drug industry as per GMP.

(*c*) Write the general method of preparation and standardization of churna.

(*d*) Write scope and future prospects of Herbal drug industry.

(*e*) Explain Good Agriculture Practices in cultivation of medicinal plants.

(*f*) Write a short note on case study of Neem.

(*g*) Describe possible side effects and possible interaction of garlic and ephedra.

(*h*) Explain regulation of manufacture of ASV drug.

(*i*) Give the sources of saffron, hibiscus and bhringraj. Explain their role in herbal cosmetics.

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NM—15—2026

FACULTY OF PHARMACEUTICAL SCIENCE

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

APRIL/MAY, 2026

BIOPHARMACEUTICS AND PHARMACOKINETICS

Paper–BP604T

(Friday, 24-4-2026) **Time : 10.00 a.m. to 1.00 p.m.**

Time—3 *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 : 10×2=20

(*a*) Define Biopharmaceutics.

(*b*) Write equation for Fick's first law of diffusion.

(*c*) Define distribution.

(*d*) Enlist sites on Human serum albumin.

(*e*) Give the names of urinary excretion process.

(*f*) Define Therapeutic window.

(*g*) What is tmax ?

P.T.O.

(*h*) What is the term open ?

(*i*) Give the equation for Michaelis-Menten.

(*j*) What is bioavailability ?

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

(*a*) Explain factors affecting on drug distribution.

(*b*) Discuss measurement of Bioavailability.

(*c*) Describe mechanism of Renal excretion.

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

(*a*) Enlist mechanism of drug absorption, explain passive diffusion.

(*b*) How to maintain in vitro-in vivo co-relation.

(*c*) Explain about Solid solution.

(*d*) Discuss causes of non-linearity in absorption.

(*e*) Discuss one compartment open model intravenous infusion administration.

(*f*) What is clearance in excretion of drug ?

(*g*) Describe oxidation Reaction in Metabolism of drug.

(*h*) What is Blood-cerebrospinal fluid barrier ?

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

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NM—19—2026

FACULTY OF PHARMACEUTICAL SCIENCE AND TECHNOLOGY

B. Pharm. (Sixth Semester) EXAMINATION

APRIL/MAY, 2026

PHARMACEUTICAL BIOTECHNOLOGY

Paper-BP605T

(Monday, 27-4-2026) **Time : 10.00 a.m. to 1.00 p.m.**

Time—3 *Hours* *Maximum Marks*—75

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

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

1. Answer the following : 10×2=20

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

(*ii*) Define biotechnology. Give its scope in pharmaceutical technology.

(*iii*) Give uses of microbes in industry.

(*iv*) Define transformation and transduction.

(*v*) Differentiate between cellular and humoral immunity.

(*vi*) What are Mutants ? Give example.

(*vii*) What is humoral immunity ?

(*viii*) Write uses of vitamin B_{12}.

P.T.O.

(*ix*) Write functions of MHC.

(*x*) Write any *four* applications of Southern Blot test.

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

(*i*) Describe production of Hepatitis B vaccine. Write a note on plasmid vectors.

(*ii*) Describe the production of penicillin by fermentation technology with a neat labelled flow chart.

(*iii*) What are biosensors ? Explain working and application of biosensors in pharmaceutical science.

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

(*i*) Explain ELISA technique with neat labelled diagram.

(*ii*) Write a note on PCR.

(*iii*) Explain methods of enzyme immobilization.

(*iv*) Explain collection and storage of human blood.

(*v*) What are vaccines ? Classify the types with example.

(*vi*) Describe production and uses of lipase.

(*vii*) Explain transduction and conjugation.

(*viii*) Describe applications and methods of production of monoclonal antibodies.

(*ix*) Describe Southern Blot Test with its applications.

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NM—26—2026

FACULTY OF SCIENCE AND TECHNOLOGY

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

APRIL/MAY, 2026

PHARMACEUTICAL QUALITY ASSURANCE

(Wednesday, 29-4-2026) (BP606T) **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) Figures to the right indicate full marks.

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

(*a*) Define GMP.

(*b*) State elements of TQM.

(*c*) What do you mean by QSEM ?

(*d*) Differentiate between ISO9000 and ISO14000.

(*e*) Draw a pharmaceutical plant layout.

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

(*g*) Enlist quality control tests for glass containers.

P.T.O.

(*h*) Define test and control articles.

(*i*) Write a short note on waste disposal in pharmaceuticals.

(*j*) What do you mean by Quality Audit ?

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

(*a*) Write in detail about good warehousing practices.

(*b*) Discuss in detail about different types of documents in pharmaceutical industry.

(*c*) Explain about design, construction and plant layout.

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

(*a*) Explain the concept of quality control, quality assurance and GMP.

(*b*) Define TQM. Describe in detail about concept of TQM.

(*c*) Explain ICH stability testing guidelines.

(*d*) Write in detail about training and hygiene.

(*e*) Give in detail steps involved in purchasing procedure.

(*f*) Write quality control tests for rubber closures.

(*g*) Give in detail about protocol for conduct of a non-clinical laboratory study.

(*h*) Discuss in detail about handling of return goods.

(*i*) Write procedure for calibration of pH meter.