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PM—03—2025

FACULTY OF SCIENCE AND TECHNOLOGY

B. Pharm. (Sixth Semester) EXAMINATION

APRIL/MAY, 2025

MEDICINAL CHEMISTRY-III

BP601T

(Thursday, 8-5-2025)

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 structures and write reactions wherever necessary.

1. Solve the following : 10×2=20
- (a) What is combinatorial chemistry ?
 - (b) What are Prodrugs ?
 - (c) Write structure and IUPAC name of Dapsone.
 - (d) Write *two* β -lactamase resistant penicillins.
 - (e) Define and classify antibiotics with examples.
 - (f) Draw structure and give IUPAC name of chloramphenicol.

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- (g) Enlist N1 and N4 substituted sulphonamides.
- (h) Draw general structure with number designation of β -lactam antibiotics.
- (i) What is Molecular Docking ?
- (j) Write name of any *two* drugs which act on :
- (i) Fungal cell wall
 - (ii) Mycobacterium cell wall.
2. Solve any *two* of the following : 2×10=20
- (a) Define and classify Sulphonamides. Give the SAR and chemistry of Sulphonamides.
- (b) Define and classify anti-tubercular agent with suitable examples. Give synthesis of INH and PAS.
- (c) Draw life cycle of malarial parasite. Write the synthesis, mechanism and SAR of chloroquine.
3. Solve any *seven* of the following : 7×5=35
- (a) Define and classify antifungal agent with suitable examples. Give structure and IUPAC name of 5-fluorouracil.
- (b) Explain in detail about SAR of Quinolones.
- (c) Describe in detail about chemistry of Aminoglycoside antibiotics.
- (d) Define and classify antiviral agents with suitable examples. Explain problem faced in development of anti-viral drugs.



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- (e) What are anti-protozoal drugs ? Give synthesis of Metronidazole.
- (f) What is UTI ? Give structure, IUPAC name, MOA and therapeutic uses of Nalidixic acid.
- (g) What are Anthelmintics ? Classify them with suitable examples.
- (h) Explain in detail about SAR and MOA of tetracycline.
- (i) Explain in detail about QSAR.

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FACULTY OF SCIENCE AND TECHNOLOGY

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

APRIL/MAY, 2025

PHARMACOLOGY-III

Paper BP-602-T

(Saturday, 10-5-2025)

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.

(iii) Write answer to the point only.

(iv) Write pathway/MOA wherever necessary.

1. Answer the following questions :

10×2=20

(a) What are the antacid ? Give examples.

(b) Define and mention the types of leprosy.

(c) Mention the common causative organisms for UTI.

(d) What is teratogenicity ? Give two examples.

(e) Enlist the drugs used in COPD.

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- (f) What are superinfection ? Give example.
- (g) What are mucolytics ? Give *two* examples of it.
- (h) Enlist the sexual transmitted diseases and write its symptoms.
- (i) Classify antiamoebics with suitable examples.
- (j) What is appetite stimulants and suppressants ? Give examples.
2. Solve any *two* from the following : 2×10=20
- (a) Classify penicillins. Write mechanism of action, adverse effects and uses of penicillin-G.
- (b) Classify antiemetics with examples. Explain the pharmacology of domperidone.
- (c) Classify antitubercular agents. Explain MOA of INH and Rifampicin.
3. Answer any *seven* questions from the following : 7×5=35
- (a) Outline the general principle of treatment of acute poisoning.
- (b) Write MOA and uses of chloroquine and adverse effects.
- (c) What are broad spectrum antibiotics ? Give example. Write pharmacology of chloramphenicol.
- (d) Classify antiviral agents with example. Write the adverse effects and uses of Acyclovir.



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- (e) Write a note on causes and prevention of antimicrobial resistance.
- (f) What are mucolytics ? Give example of it. Write mechanism of action of bromohexine.
- (g) Write a note on monoclonal antibodies with suitable examples.
- (h) Write the signs, symptoms and treatment of morphine poisoning.
- (i) Classify antileprotic drugs with example. Write the mechanism of action of dapsone.

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FACULTY OF SCIENCE AND TECHNOLOGY

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

APRIL/MAY, 2025

HERBAL DRUG TECHNOLOGY

(BP-603-T)

(Wednesday, 14-5-2025)

Time : 10.00 a.m. to 1.00 p.m

Time—Three Hours

Maximum Marks—75

Note :— (i) Write the answer to the point only.

(ii) Figures to the right indicate full marks.

(iii) All questions are compulsory.

1. Answer the following questions :

10×2=20

(a) Define the following :

(i) Herb

(ii) Herbal drug preparation.

(b) Mention any *four* health benefits of ginger.

(c) Enlist various methods for pest control.

(d) Differentiate between Arishta and Asava.

P.T.O.



- (e) Enumerate the objectives of GMP.
- (f) What is primary processing of herbal drugs ?
- (g) Outline importance of organic farming.
- (h) Name *two* herbs used for dental care and give their biological sources.
- (i) Give any *one* method of preparation of phytosome.
- (j) What do you mean by Breeder's right and Farmer's right ?

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

- (a) Explain in detail about nutraceuticals used in cancer and cardiovascular diseases.
- (b) Define and classify excipients and describe their role in herbal cosmetics.
- (c) Write in brief about basic concept, principle diagnosis and treatment of siddha system of medicine.

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

- (a) Write a short note on case study of Neem.
- (b) Explain possible interaction of :
 - (i) Kava-Kava
 - (ii) Hypericum.



- (c) Discuss the general aspect, market growth and scope of nutraceuticals.
- (d) What is the role of Good Agriculture Practices (GAP) in cultivation of medicinal plants.
- (e) Describe the regulations of manufacture of ASV drugs.
- (f) Explain about documentation and record maintenance as per a schedule Z.
- (g) Give the general method of preparation and standardization of Churna.
- (h) Write a note on patenting and regulatory requirement of natural products.
- (i) Classify biopesticides with examples. What are advantages of biopesticides.



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FACULTY OF SCIENCES AND TECHNOLOGY

B. Pharm. (Sixth Semester) EXAMINATION

APRIL/MAY, 2025

BIOPHARMACEUTICS AND PHARMACOKINETICS

BP-604T

(Friday, 16-5-2025)

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) Draw well labelled diagram wherever necessary.

1. Solve *ten* of the following :

10×2=20

(a) Define extraction ratio and total body clearance.

(b) Mention the significance of protein drug binding.

(c) What do you understand by sink condition ?

(d) What are the *two* major rate limiting step in the distribution of drug ?

P.T.O.



- (e) Give the objectives of bioavailability studies.
- (f) Define elimination rate constant.
- (g) Define Mean Residence Time (MRT). Give the formula for MRT.
- (h) List out the reasons for non-linearity in pharmacokinetics.
- (i) Give the significance of bioequivalence.
- (j) Define pharmacokinetics and therapeutic index.
2. Solve any *two* of the following : 2×10=20
- (a) Explain the various mechanism of drug absorption.
- (b) What do you mean by pharmacokinetics models ? Classify the pharmacokinetics models. Give their salient features with advantage and disadvantage.
- (c) What are the various methods of enhancement of bioavailability ?
3. Solve any *seven* of the following : 7×5=35
- (a) Explain in brief about pH partition theory.
- (b) How do you determine the renal clearance of drugs ?
- (c) Discuss in brief the kinetics of protein drug binding.



- (d) Explain how steady state level of drug achieved through IV infusion.
- (e) Quote examples of zero-order rate processes.
- ~~(f)~~ What is flip-flop phenomenon and when is its observed ?
- (g) What are the merits and demerits of Wagner-Nelson method in computing K_a ?
- ~~(h)~~ Discuss the factors affecting distribution of drugs.
- (i) What is the influence of K_a and K_E on C_{max} , T_{max} and AUC ?



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FACULTY OF PHARMACEUTICAL SCIENCES AND TECHNOLOGY

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

APRIL/MAY, 2025

PHARMACEUTICAL BIOTECHNOLOGY

(BP-605T)

(Monday, 19-5-2025)

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. Answer the following : 10×2=20
- (a) Define biosensor. Enlist its applications.
 - (b) Write about importance of lipases.
 - (c) Write role of restriction endonucleases and ligases.
 - (d) Enlist applications of biotechnology in pharmaceutical sciences.
 - (e) What are interferons ?
 - (f) Write the steps involved in genetic engineering.
 - (g) Define mutation and enlist its types.
 - (h) Write applications of enzyme immobilization.

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- (i) What is hypersensitivity ?
- (j) Write the storage conditions for vaccine.
2. Solve any *two* : 2×10=20
- (a) Explain production of insulin by using *r*DNA technology.
- (b) Give types of immunity and draw a structure of immunoglobulin.
- (c) What are blood products and plasma substitutes ?
3. Solve any *seven* : 7×5=35
- (a) Explain about PCR and give its importance.
- (b) Write about adsorption and polymerisation as enzyme immobilisation technique.
- (c) Explain type II hypersensitivity reaction with *one* example.
- (d) Write production of Vit B₁₂.
- (e) Give genetic comparison between Prokaryotes and Eukaryotes.
- (f) Explain about southern blotting technique.
- (g) What is hybridoma technology ?
- (h) Enlist fermentation methods requirements and media used in fermentation
- (i) Explain fermentation with a well labelled diagram of fermenter.

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PM—26—2025

FACULTY OF SCIENCE AND TECHNOLOGY

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

APRIL/MAY, 2025

PHARMACEUTICAL QUALITY ASSURANCE

BP-606T

(Wednesday, 21-5-2025)

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.

(iii) Draw a well labelled diagram wherever necessary.

1. Answer *all* questions :

20

(a) Differentiate between Quality Control and Quality Assurance.

(b) What do you mean by QSEM ?

(c) Enlist elements of QbD program.

(d) Draw an ideal pharmaceutical plant layout.

(e) What do you mean by HVAC system ?

P.T.O.



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- (f) Elaborate the concept of GLP.
- (g) Write the procedure for calibration of pH meter.
- (h) Enlist the general principles of analytical method validation.
- (i) Explain in short the concept of quality audit.
- (j) Write about distribution records.

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

- (a) Discuss in detail ICH stability testing guidelines.
- (b) Describe quality control tests for secondary packaging materials.
- (c) Explain in detail document maintenance in pharmaceutical industry.

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

- (a) Describe the procedure for calibration of UV-visible spectrophotometer.
- (b) Write in detail about the concept of TQM.
- (c) Write the ICH process of harmonization.
- (d) Discuss in detail about sanitation and environmental control in pharmaceutical plant.
- (e) Describe in detail about personnel responsibilities and training.



- (f) Write the process for purchasing equipments and raw materials.
- (g) Give general provisions involved in GLP.
- (h) Give in detail about evaluation of complaints and handling of return goods.
- (i) Write about importance and scope of validation. Give the contents of validation master plan.