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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) (BP-601-J) Time : 10.00 a.m. to 1.00 p.m.**

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*Time— Three Hours*

*Maximum Marks—75*

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

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

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

(a) What are aminoglycoside antibiotics ? Write example.

(b) Write chemistry of N<sub>1</sub> and N<sub>4</sub> 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) :  $7 \times 5 = 35$

- (a) Enlist important physico-chemical parameters and respective equations used in QSAR. Explain any *one* with suitable example.
- (b) What are folate reductase 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 anthelmintic drugs with example. Add a note on synthesis of mebendazole.

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**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.

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**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 nutraceuticals 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.

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**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.

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**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.

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**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.