

This question paper contains 3 printed pages]

SP—01—2024

FACULTY OF SCIENCE & TECHNOLOGY

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

APRIL/MAY, 2024

MEDICINAL CHEMISTRY-II

(BP501-T)

(Tuesday, 14-05-2024)

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

Time—3 Hours

Maximum Marks—75

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

(ii) Figures to the right indicate full marks.

(iii) Draw structures wherever necessary.

1. Answer the following questions :

10×2=20

- (a) Give the distribution of histamine receptors in human body.**
- (b) Outline the synthesis of nitroglycerine.**
- (c) Enlist different insulin preparations.**
- (d) Draw structure and write uses of Benzocaine.**

P.T.O.

WT

(2)

SP—01—2024

- (e) Write in short about non-steroidal estrogen.
- (f) Differentiate between cardenolides and bufadienolides.
- (g) Write MOA of propylthiouracil.
- (h) Define coagulants with examples and structure of any one drug.
- (i) What is the role of sodium nitroprusside in managing hypertension.
- (j) Give MOA of osmotic diuretics.

2. Answer any *two* of the following :

2×10=20

- (a) Classify antineoplastic agents with examples and structures. Give mode of action of cyclophosphamide as alkylating agents.
- (b) Discuss in detail nomenclature and stereochemistry of steroids.
- (c) Draw the structure of human insulin. Write a brief note on chemistry, biosynthesis, storage and release of insulin.

3. Answer any *seven* of the following :

7×5=35

- (a) Define autocoids. Write the SAR of H_1 antagonist.
- (b) Write the role of renin-angiotensin system in hypertension.
- (c) Classify antianginal drugs with examples and structures.
- (d) Write MOA and uses of different classes of membrane depressant drugs as anti-arrhythmic agents.

WT

(3)

SP—01—2024

- (e) Discuss the chemistry of cardiac glycosides.
- (f) Write a short note on oral contraceptives.
- (g) Discuss in detail biological effect and therapeutic uses of male sex hormone.
- (h) Write the SAR of local anaesthetics.
- (i) Identify the basic nucleus in the following drugs and draw its structure :
 - (i) Cyclizine
 - (ii) Dipyridamole
 - (iii) Chlorothiazide
 - (iv) Benazepril
 - (v) Pioglitazone.

SP—01—2024

3

This question paper contains 2 printed pages]

SP—09—2024

FACULTY OF PHARMACY

B.Pharm. (Fifth Semester) EXAMINATION

APRIL/MAY, 2024

PHARMACOLOGY-II

Paper BP 503-T

(Saturday, 18-05-2024)

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) *Draw a neat labelled diagram wherever necessary.*

1. Answer *all* questions :

10×2=20

- (a) Define atrial flutter and atrial fibrillation.
- (b) Write therapeutic uses of Aspirin.
- (c) What are Autocoids ?
- (d) Give application of Bioassay.
- (e) What are anti-rheumatic agents ? Give example.
- (f) Write mechanism of action of sulfonyl urea.
- (g) Enlist drugs used in the therapy of shock.
- (h) Give the role of calcitonin.

P.T.O.

W

(2)

SP—09—2024

- (i) Write adverse effects of corticosteroids.
- (j) What are plasma volume expanders ? Give its examples.
2. Answer the following (any *two*) : 2×10=20
- (a) What are NSAIDS ? Classify it and write pharmacology of Aspirin.
- (b) Define Antihypertensive agents ? Classify it and write pharmacology of any *one* class.
- (c) What is Bioassay ? Explain in detail principles and types of bioassay.
3. Answer the following (any *seven*) : 7×5=35
- (a) Explain in detail pharmacology of mineralocorticoids.
- (b) Write in brief about bioassay of oxytocin.
- (c) Discuss about Renin-Angiotensin Aldosterone System (RAAS)
- (d) Explain in detail pharmacology of Thiazide diuretics.
- (e) Discuss about the pharmacology of ACTH.
- (f) Write pharmacology of oestrogen.
- (g) What are anticoagulants ? Write pharmacology of warfarin.
- (h) Discuss in brief about pharmacology of Rosuvastatin.
- (i) Write mechanism of action, pharmacological actions and therapeutic uses of biguanides.

SP—09—2024

2

This question paper contains 3 printed pages]

SP—17—2024

FACULTY OF PHARMACEUTICAL SCIENCE AND TECHNOLOGY

B.Pharm. (Fifth Semester) EXAMINATION

APRIL/MAY, 2024

PHARMACEUTICAL JURISPRUDENCE

(Friday, 24-05-2024)

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

Time—Three Hours

Maximum Marks—75

Note :— (i) All questions are compulsory.

(ii) Draw neat labelled diagram wherever necessary.

(iii) Figures to the right indicate full marks.

1. Answer the questions :

10×2=20

(i) Give four examples of psychotropic substance.

(ii) Give the labelling requirements and write the specimen label :
schedule G.

(iii) Differentiate between misbranded and adulterated drug.

(iv) Define drug as per D & C Act.

(v) What is aim and objective of D & C Act ?

P.T.O.

WT

(2)

SP—17—2024

- (vi) Write briefly about schedule Y.
- (vii) Define Medicinal Hemp and Poppy straw.
- (viii) What does schedule M contain ?
- (ix) What is loan licence ?
- (x) What is trademark ?

2. Answer any *two* of the following :

2×10=20

- (i) Explain the constitution and functions of The Drug Technical Advisory Board and its role in the regulation of drugs into India.
- (ii) What are CPCSEA guidelines for breeding and stocking of animals ? Write about the transport and acquisition of animals for experiment.
- (iii) Write the qualification prescribed for appointment power and duties of drug inspector.

3. Answer any *seven* of the following :

7×5=35

- (i) Discuss DPCO in brief.
- (ii) Write a note on Intellectual Property Rights.
- (iii) Give general procedure and conditions for obtaining a license for sale of drugs and cosmetics as per D & C Act, 1940.
- (iv) What is the purpose of code of ethics ? How does it help the profession ?

- (v) What conditions are to be satisfied for obtaining loan licenses and reparation license ? Mention the class of drugs for which such license cannot be issued.
- (vi) Explain the purpose and key provisions of schedule P, U and V.
- (vii) Write in brief about offence and penalties in contravention of Medical Termination of Pregnancy Act.
- (viii) Give the constitution and functions of Institute Animal Ethics (IAE) Committee.
- (ix) Describe the role of pharmacist in relation to his profession.

This question paper contains 3 printed pages]

PP—01—2023

FACULTY OF SCIENCE AND TECHNOLOGY

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

NOVEMBER/DECEMBER, 2023

MEDICINAL CHEMISTRY

Paper-II

(Tuesday, 26-12-2023)

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

Time—3 Hours

Maximum Marks—75

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

(ii) Figures to the right indicate full marks.

(iii) Draw structures wherever necessary.

1. Solve the following questions :

10×2=20

- (a) Draw any *one* structure of purine containing antimetabolite agent.
- (b) What are vasodilators ? Draw the structure of any *one* drug from this class.
- (c) Draw the structure of diphenhydramine and give its IUPAC name.
- (d) Outline the synthesis of ISDN.
- (e) Define local anesthetics. Give the therapeutic uses of lignocaine.
- (f) Explain the chemistry of sulfonylureas.

P.T.O.

309CBE773807C22D23F87371AC4F63BE

WT

(2)

PP—01—2023

- (g) Draw the structure of any *one* drug containing estrane and pregnane nuclei.
- (h) Define anti-thyroid drugs. Classify with a suitable example.
- (i) Write a brief note on Diethylstilbestrol (DES).
- (j) Give the difference between cardenolides and butadienolides.
2. Solve any *two* of the following : 2×10=20
- (a) Explain the nomenclature and stereochemistry of steroids.
- (b) What are antihypertensive agents ? Classify with at least *one* structure from each class.
- (c) Explain antihistaminic agents in detail. Give the SAR of H₁ & H₂ receptor antagonist.
3. Solve any *seven* of the following : 7×5=35
- (a) Discuss the chemistry and SAR of Cardiac Glycosides.
- (b) Outline the schematic synthetic route of :
- (i) Tolbutamide
- (ii) Dibucaine.
- (c) What are antineoplastic agents ? Classify with at least *one* structure from each class.
- (d) Explain the SAR of Diuretics.

309CBE773807C22D23F87371AC4F63BE

WT

(3)

PP—01—2023

- (e) Write a brief note on oral contraceptives. Draw the structure of Norgestrel.
- (f) Outline the synthetic route of :
 - (i) Warfarine
 - (ii) Furosemide.
- (g) Explain the chemistry and SAR of proton pump inhibitors.
- (h) What are arrhythmic drugs ? Explain MOA of each class.
- (i) Draw the structure of the following drugs with its IUPAC name :
 - (i) Procaine
 - (ii) Metformin
 - (iii) Testosterone
 - (iv) Chlorothiazide
 - (v) Nifedipine.

PP—01—2023

3

309CBE773807C22D23F87371AC4F63BE

This question paper contains 2 printed pages]

PP—05—2023

FACULTY OF PHARMACEUTICAL SCIENCE AND TECHNOLOGY

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

NOVEMBER/DECEMBER, 2023

INDUSTRIAL PHARMACY-I

Paper BP502 T

(Thursday, 28-12-2023)

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

Time—3 Hours

Maximum Marks—75

N.B. :— (i) Answer to the point only.

(ii) Draw neat labelled diagram wherever necessary.

1. Answer the following :

10×2=20

- (a) Define preformulation.
- (b) Write objectives of tablet coating.
- (c) What is phase inversion temperature ?
- (d) Write advantages of aerosol dosage form.
- (e) Define ophthalmic preparation.
- (f) Differentiate between flocculated and deflocculated suspension.
- (g) Enlist various pelletization processes.
- (h) Mention essential requirements of parenterals.
- (i) What are cosmetics ?
- (j) Mention types of compute scaling.

P.T.O.

WT

(2)

PP—05—2023

2. Answer any *two* of the following :

2×10=20

- (a) Describe defects of compressed tablets along with remedies.
- (b) Write various quality control tests of capsules.
- (c) Define parenterals. Describe production facilities, controls and aseptic processing.

3. Answer any *seven* of the following :

7×5=35

- (a) Write evaluation test of aerosols.
- (b) Mention about functions and importance of container-closures.
- (c) Describe process of soft capsule manufacturing.
- (d) Describe various quality control tests of parenterals.
- (e) Write importance of zeta potential in stability of suspension.
- (f) Describe BCS classification of drugs.
- (g) Describe stability problems of emulsion.
- (h) Write a note on 'Film-Coating' of tablets.
- (i) Describe various formulation considerations of ophthalmic preparations.

PP—05—2023

2

9AC9C7641A35D8F0396AE4D5E267D1F1

This question paper contains 2 printed pages]

PP—09—2023

FACULTY OF SCIENCE AND TECHNOLOGY

B. Pharm. (Fifth Semester) EXAMINATION

NOVEMBER/DECEMBER, 2023

PHARMACOLOGY

Paper—II

(Saturday, 30-12-2023)

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) Draw a neat labelled diagram wherever necessary.

I. Answer the following :

10×2=20

- (a) Define Fibrinolytics and antiplatelet drugs.
- (b) Write the mechanism of actions of Acetazolamide.
- (c) Define autocoids and mention its *two* examples.
- (d) Write the MOA of Ondansetron.
- (e) Classify the drugs used in the treatment of Gout.
- (f) Write the therapeutic uses and MOA of Vasopressin.
- (g) Mention the hormones secreted by pituitary glands.
- (h) Write the role of Vitamin D and calcitonin.
- (i) Write the therapeutic uses of captopril.
- (j) Write the mechanism of action of Simvastatin.

P.T.O.

WT

(2)

PP—09—2023

2. Answer the following questions (any *two*) :

2×10=20

- (a) Define and classify antihypertensive agents. Write pharmacology of calcium channel blockers.
- (b) Write the principles and applications of Bioassay. Explain the bioassay of Insulin.
- (c) Classify oral hypoglycemic agents and write pharmacology of Insulin.

3. Answer the following :

7×5=35

- (a) Write the pharmacology of estrogen.
- (b) Classify NSAID and write therapeutic uses of Aspirin.
- (c) Write the pharmacological account of Nitroglycerine.
- (d) Define and classify diuretics and write the MOA and therapeutic uses of loop diuretics.
- (e) Write pharmacology of Histamine.
- (f) Write pharmacological account of Digitalis.
- (g) Write a short note on ACE inhibitors.
- (h) Explain the MOA and pharmacological effects of glucocorticoids.
- (i) Classify antirheumatic drugs and write pharmacology of Methotrexate.

PP—09—2023

This question paper contains 2 printed pages]

PP—13—2023

FACULTY OF SCIENCE AND TECHNOLOGY

B.Pharm. (Fifth Semester) EXAMINATION

JANUARY, 2024

PHARMACOGNOSY AND PHYTOCHEMISTRY

Paper—II

(Tuesday, 02-01-2024)

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 a neat labelled diagrams wherever necessary.

(iv) Figures to the right indicate full marks.

1. Answer *all* the questions :

10×2=20

(a) Define Tannins and Carotenoids.

(b) Give the significance of shikmic acid pathway.

(c) Define radioactive isotope with *two* examples.

(d) Define extraction. Enlist any *four* types of extraction techniques.

(e) Write chemical constituents of mentha and pterocarpus.

(f) Write application of TLC.

(g) Write chemical structure of caffeine and reserpine.

(h) Give the biological source and chemical constituents of fennel.

(i) Draw neat labelled diagram of T.S. of coriander.

(j) Write general identification tests for Tannins.

P.T.O.

78E4C929DD15C173EB1DE963A34D9C2B

WT

(2)

PP—13—2023

2. Solve any *two* of the following :

2×10=20

- (a) Explain industrial method of production and estimation of sennoside and vincristine.
- (b) Discuss amino acid pathway in detail.
- (c) Write the pharmacognostical study of Senna.

3. Solve any *seven* of the following :

7×5=35

- (a) Give the botanical source and chemical constituents of aloes and tea.
- (b) Write the method of isolation and estimation of curcumin.
- (c) Write the applications of GC and HPLC in detail.
- (d) Write the morphology and microscopy of Digitalis.
- (e) Describe utilization of radioactive isotope in cardiovascular diseases.
- (f) Write the isolation and estimation of Glycyrrhetic acid.
- (g) Give the biological source, chemical constituents, uses and adulterants of clove.
- (h) Explain the method of isolation and estimation of quinine.
- (i) Explain maceration and percolation technique with suitable example.

PP—13—2023

2

78E4C929DD15C173EB1DE963A34D9C2B

This question paper contains 2 printed pages]

PP—17—2023

FACULTY OF PHARMACEUTICAL SCIENCE

B. Pharm. (Fifth Semester) EXAMINATION

JANUARY, 2024

PHARMACEUTICAL JURISPRUDENCE

(Thursday, 04-01-2024)

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) Figures to the right indicate full marks.

1. Solve the following :

10×2=20

- (a) Define Drug as per D & C Act, 1940.**
- (b) Define manufacture as per D & C Act, 1940.**
- (c) Give objective of Pharmacy Act, 1948.**
- (d) Enlist four narcotic drug and psychotropic substances.**
- (e) Define patent.**
- (f) Give types of patent.**
- (g) Differentiate between law and ethics.**
- (h) Name the places for termination of pregnancies.**
- (i) Define Copyright.**
- (j) What is Public Information officer ?**

P.T.O.

WT

(2)

PP—17—2023

2. Solve any *two* of the following :

2×10=20

- (a) Give offences and penalties under Narcotic drugs and psychotropic substances Act.
- (b) Give the constitution and function of Pharmacy Council of India.
- (c) Explain in brief about schedule M.

3. Solve any *seven* of the following :

7×5=35

- (a) Explain in brief about duties of Drug Inspector.
- (b) Write a note on pharmacist register.
- (c) Give the requirement of non-bonded laboratory.
- (d) Explain in brief about ethics of Pharmacist in relation to his Job.
- (e) Explain opium and coca derivative.
- (f) Give the duty and functions of Govt. analyst.
- (g) Give the pre-independence picture of Pharmacy in India.
- (h) Give the functions of animal welfare board of India.
- (i) Explain in detail about schedule N.

PP—17—2023

2

This question paper contains 3 printed pages]

IP—01—2023

FACULTY OF SCIENCE AND TECHNOLOGY

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

APRIL/MAY, 2023

MEDICINAL CHEMISTRY

Paper-II (BP-501T)

(Wednesday, 03-05-2023)

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. Answer the following questions : 10×2=20

- (a) Explain in detail mechanism of action of gastric proton pump inhibitors.
- (b) Write the structure and uses of any *two* antagonists.
- (c) Discuss the mechanism of action of Acetazolamide.
- (d) Write the structure and uses of any *two* anticoagulants.
- (e) What are potassium sparing diuretics ? Give the structure of triamptere.
- (f) Write briefly about nitro vasodilators.
- (g) Write a note on drugs used in Congestive heart failure.

P.T.O.

- (h) Illustrate the importance of Histamine receptors.
- (i) Explain the mechanism action of anticoagulants.
- (j) Outline synthesis of Benzocaine.

2. Solve any *two* of the following :

2×10=20

- (a) Define and classify diuretics with examples. Explain the mechanism of action of carbonic anhydrase inhibitors and explain the synthesis of Acetazolamide.
- (b) Define and classify local anaesthetics with examples. Explain the SAR of local anaesthetic agent.
- (c) Classify antineoplastic agents with examples. Outline the synthesis of Mercaptopurine and Methotrexate.

3. Answer the following :

7×5=35

- (a) Describe the chemistry of oral contraceptives.
- (b) Write a note on antithyroid drugs and give structure and uses of any *two*.
- (c) What are hypoglycemic agents ? Discuss about Glucosidase inhibitors as antidiabetic agents.
- (d) What are estrogens ? Discuss about synthetic estrogens.
- (e) Define and classify H₁ receptor antagonists with suitable examples. Outline the synthesis of Promethazine and Triprolidine HCl.
- (f) Discuss in brief about vasodilators and outline the synthesis of Nitroglycerine.

WT

(3)

IP—01—2023

- (g) What are anticoagulants ? Give the mechanism of action and synthesis of Warfarin.
- (h) Define and classify antiarrhythmic agents with examples. Give their medicinal uses.
- (i) Write a note on metabolism of steroids.

IP—01—2023

3

This question paper contains 2 printed pages]

IP—05—2023

**FACULTY OF PHARMACY (PHARMACEUTICAL SCIENCE AND
TECHNOLOGY)**

B. Pharm (Fifth Semester) EXAMINATION

APRIL/MAY 2023

INDUSTRIAL PHARMACY-I

(Saturday, 06-05-2023)

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 neat label diagram wherever necessary.

(iii) Answer to the point only.

1. Solve the following questions :

10×2=20

(a) Write advantages of liquid orals.

(b) Write ideal characteristics for Parenteral formulations.

(c) What are ideal requirements of pharmaceutical packaging materials.

(d) Define suspension. Enlist method of preparation of suspension.

(e) Write classification of cosmetics on the basis of their uses.

(f) Define ophthalmic. Enlist evaluation test for ophthalmic preparations.

(g) Define preformulation. Enlist physical properties of it.

(h) Write advantages of P'ceutical aerosol.

(i) Define tablet. Explain any one granulation method.

(j) Enlist various excipients used in emulsion formulation with suitable example.

P.T.O.

WT

(2)

IP—05—2023

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

- (a) Describe various evaluation test for parenterals.
- (b) Explain various quality control test for tablets.
- (c) Define capsule. Explain advantages and disadvantages of capsule.
Explain Rotary Die process of soft capsule manufacturing.

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

- (a) Define emulsion. Explain identification test of emulsion.
- (b) Describe lipstick.
- (c) What are propellants ? Write its functions and classification and container used for aerosol.
- (d) Explain about glass containers used in pharmaceutical preparation.
- (e) Explain tablet coating or Manual capsule filling machine.
- (f) Enlist and explain techniques of pelletisation.
- (g) Explain liquid oral dosage form with example. Explain method of preparation of syrup.
- (h) Explain formulation of parenterals with aseptic technique.
- (i) Describe cold cream.

IP—05—2023

This question paper contains 2 printed pages]

IP—09—2023

FACULTY OF SCIENCE AND TECHNOLOGY

B.Pharm. (Fifth Semester) EXAMINATION

APRIL/MAY, 2023

PHARMACOLOGY-II

(BP503T)

(Tuesday, 9-5-2023)

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

Time—3 Hours

Maximum Marks—75

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

(2) *Draw appropriate diagram/chart wherever necessary.*

(3) *Answer to the point only.*

1. Answer the following :

10×2=20

(a) Define hematinics and coagulants.

(b) Enlist drugs used in angina pectoris.

(c) Write a note on Substance-P.

(d) Enlist various types of Bioassays.

(e) Write down uses of frusemide.

(f) Define antiplatelet drugs and give its uses.

(g) What are anabolic steroids ?

(h) Give a note on corticosteroids.

(i) Define Goitre.

(j) Enlist drugs used to treat toothache.

P.T.O.

WT

(2)

IP—09—2023

2. Solve any *two* of the following :

2×10=20

- (a) Classify antihypertensive drugs. Explain mechanism of action, adverse effects of Atenolol and Nifedipine.
- (b) Classify diuretics and anti-diuretic drugs. Give mechanism of action of high-ceiling diuretics and potassium sparing diuretics.
- (c) Write down principle and applications of bioassays and explain bioassay of insulin.

3. Solve any *seven* of the following :

7×5=35

- (a) Classify Anti-hyperlipidemic drugs. Give pharmacology of Atrovastatin.
- (b) What are prostaglandins and leukotriens ? Explain its clinical significance.
- (c) Explain electrophysiology of heart.
- (d) Write down note on calcitonin and vitamin D. Give its importance in diseases.
- (e) Classify oral hypoglycemic agents.
- (f) Write a short note on oral contraceptives.
- (g) Explain pharmacological accounts of thyroid hormones.
- (h) Explain pharmacology of drugs acting on uterus.
- (i) Classify NSAJDs and give its uses.

IP—09—2023

This question paper contains 3 printed pages]

IP—13—2023

FACULTY OF SCIENCE AND TECHNOLOGY

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

APRIL/MAY, 2023

PHARMACOGNOSY AND PHYTOCHEMISTRY

Paper-II

(Thursday, 11-05-2023)

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

Time—Three Hours

Maximum Marks—75

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

(ii) Answer to the point only.

(iii) Draw neat labelled diagram wherever necessary.

(iv) Figures to the right indicate full marks.

1. Solve the following :

2×10=20

(a) Define metabolic pathway with a suitable example.

(b) Define chromatography and classify it.

(c) Write biological source and uses of fennel.

(d) Write chemical constituents of Belladonna and Bitter Almond.

(e) Draw the chemical structure of Citral.

(f) Enlist modern methods of extraction.

P.T.O.

WT

(2)

IP—13—2023

- (g) Write Killer Killani test for cardiac glycosides.
- (h) What is radio tracer techniques ?
- (i) Write morphological characters of Clove.
- (j) Define the following :

- (i) Flavonoids
- (ii) Tannins.

2. Solve any *two* of the following :

2×10=20

- (a) Write industrial production, estimation and utilization of Atropine.
- (b) Discuss Acetate pathway.
- (c) Give isolation, purification and identification of Reserpine.

3. Solve any *seven* of the following :

7×5=35

- (a) Describe utilization of radioactive isotopes in the investigation of Cancer.
- (b) Write biological source, chemical class and uses of Rauwolfia and Coriander.
- (c) Discuss isolation of Quinine.
- (d) Explain supercritical fluid extraction technique with a suitable example.
- (e) Write industrial production of Sennoside.
- (f) Discuss analysis of podophyllotoxin with suitable technique of Chromatography.
- (g) Write morphology and microscopy of Vinca.

WT

(3)

IP—13—2023

- (h) Write composition, therapeutic uses and commercial application of Opium.
- (i) Justify HPTLC technique for analysis of crude drugs with suitable examples.

IP—13—2023

3

62706F53E23418DE055810FEEAF334B8

This question paper contains 2 printed pages]

IP—17—2023

FACULTY OF SCIENCE AND TECHNOLOGY

B.Pharm. (Fifth Semester) EXAMINATION

APRIL/MAY, 2023

PHARMACEUTICAL JURISPRUDENCE

(BP-505T)

(Saturday, 13-5-2023)

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. Solve the following : 10×2=20

(a) Define magic remedies. Write the offence and penalties in contravention of D & MR Act.

(b) Define spurious drugs as under Drugs and Cosmetic Act.

(c) Define absolute alcohol and denatured alcohol.

(d) Define bonded and non-bonded laboratory.

(e) What is Schedule 'J' ?

(f) Define adulterated drug as per D & C Act, 1940.

(g) Define Coca leaf.

(h) What are the objectives of D & C Act, 1940 ?

(i) Write the full form of CPCSEA & NLEM.

(j) Define advertisement.

P.T.O.

WT

(2)

IP-17-2023

2. Solve any *two* of the following :

2×10=20

- (a) Give the constitution and functions of Drug Technical Advisory Board. (DTAB).
 - (b) Give the offence and penalties under Narcotic Drugs and Psychotropic Substance Act.
 - (c) What are CPCSEA guidelines for breeding and stocking of animals ?
3. Solve any *seven* of the following :
- 7×5=35
- (a) Write in brief about schedule 'M'.
 - (b) Define opium and opium derivative.
 - (c) Enlist the requirements of Bonded laboratory.
 - (d) What is Education Regulation ?
 - (e) Describe schedule 'P' and 'X' under D & C Act, 1940.
 - (f) Define 'cosmetics' as per D & C Act, 1940.
 - (g) What is 1st register ? How is it prepared ?
 - (h) What are the prohibited advertisements ?
 - (i) Write in brief the powers and duties of Drug Inspector.

IP-17-2023

This question paper contains 3 printed pages]

DP—01—2022

FACULTY OF SCIENCE AND TECHNOLOGY

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

NOVEMBER/DECEMBER, 2022

MEDICINAL CHEMISTRY-II

Paper BP501T

(Monday, 26-12-2022)

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

Time—Three Hours

Maximum Marks—75

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

(ii) Figures to the right indicate full marks.

(iii) Draw structures wherever necessary.

1. Solve the following questions :

10×2=20

- (a) Write chemical class of etidocaine and benzocaine.
- (b) Write any two examples of androgens.
- (c) Draw structure and give IUPAC name of progesterone.
- (d) Write synthesis of benzocaine.
- (e) Define Δ^1 steroids with example.
- (f) Match the following pairs :

Basic Steroidal Nucleus

No. of C Atoms

(i) Estrane

(a) 17

(ii) Pregnane

(b) 18

(iii) Androstane

(c) 21

(iv) Gonane

(d) 19

P.T.O.

- (g) Write any *two* examples of anticoagulant agents.
- (h) Write biosynthesis of histamine.
- (i) Define diabetes mellitus.
- (j) Draw structure and write IUPAC name of diphenhydramine.
2. Solve any *two* of the following : 2×10=20
- (a) Discuss SAR of corticosteroids.
- (b) Discuss SAR of estrogens and write its metabolism.
- (c) Classify H₁ antagonists with at least *one* structure from each class.
Write synthesis of cimetidine.
3. Solve any *seven* of the following : 7×5=35
- (a) Write synthesis of tolbutamide and procaine.
- (b) Classify antidiabetic agents with at least *one* structure from each class.
- (c) Differentiate cardenolides and bufadienolides.
- (d) Write synthesis of mercaptopurine and acetazolamide.
- (e) Draw structures of the following :
- (i) Furosemide
- (ii) ISDN
- (iii) Chlorambucil
- (iv) Promethazine
- (v) Levonorgestrel.

- (f) Classify diuretics with structure of at least *one* compound from each class.
- (g) Write a note on oral contraceptives.
- (h) Define and classify anti-algorithmic agents.
- (i) Identify the chemical class of the following drugs :
 - (i) Bleomycin
 - (ii) Fluorouracil
 - (iii) Chlorambucil
 - (iv) Vinblastin
 - (v) Timolol.

This question paper contains 2 printed pages]

DP—05—2022

FACULTY OF PHARMACEUTICAL SCIENCE AND TECHNOLOGY

B. Pharm (Fifth Semester) EXAMINATION

NOVEMBER/DECEMBER, 2022

INDUSTRIAL PHARMACY-I

Paper BP502T

(Wednesday, 28-12-2022)

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 neat labelled diagram wherever necessary.

(iii) Answer to the point only.

1. Answer the following :

10×2=20

- (a) What is partition coefficient ? Write its significance.
- (b) Enlist various excipients used in tablet formulation with suitable example.
- (c) Stokes law is applicable to dilute suspension. Justify.
- (d) Define bloom strength of gelatin.
- (e) Mention basic criteria for parenteral preparations.
- (f) Write various uses of cosmetics.
- (g) What are Aerosols ?
- (h) What are ideal requirement of pharmaceutical packaging material ?
- (i) Define granulation. Mention its reasons.
- (j) Define Pellets.

P.T.O.

WT

(2)

DP—05—2022

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

- (a) Describe various quality control/evaluation tests of tablets.
- (b) Define Preformulation. Describe various physical properties of drug substance study in preformulation.
- (c) Describe various quality control or evaluation tests of parenterals.

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

- (a) Explain 'Glass-Packaging Material'.
- (b) Describe Rotary Die process of soft capsule manufacturing.
- (c) Write about sugar coating process.
- (d) Comment on environmental control followed in parenteral processing.
- (e) Describe ophthalmic inserts (occuserts).
- (f) Write evaluation tests of capsules.
- (g) Explain lipstick.
- (h) What are propellants ? Write its functions and classification.
- (i) Mention Drug-Plastic interactions.

This question paper contains 2 printed pages]

DP—09—2022

FACULTY OF SCIENCE AND TECHNOLOGY

B. Pharm (V Semester) EXAMINATION

NOVEMBER/DECEMBER, 2022

PHARMACOLOGY-II

(Friday, 30-12-2022)

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 appropriate diagram/charts wherever necessary.

(iii) Answer to the point only.

1. Answer the following :

10×2=20

(a) Define bioassay.

(b) Enlist anterior pituitary hormones.

(c) What are coagulants ? Give *two* examples.

(d) What is effective refractory period ?

(e) Define diuretics. Give *two* examples.

(f) Write therapeutic use of methotrexate.

(g) Define Angina. Enlist its symptoms.

(h) What are autocoids ? Give any *two* examples.

(i) Write role of Vitamin D.

(j) What are anabolic steroids ?

P.T.O.

WT

(2)

DP—09—2022

2. Answer the following (any *two*) :

2×10=20

- (a) Explain Renin-angiotensin system. Write pharmacology of Captopril.
- (b) What are antihistaminics ? Classify with example. Write pharmacology of promethazine.
- (c) Discuss principles and applications of bioassay. Write bioassay of digitalis.

3. Answer the following (any *seven*) :

7×5=35

- (a) Discuss oral contraceptives.
- (b) Write pharmacology of sulfonyl ureas.
- (c) Classify antigout drugs. Write mechanism of action of colchicine.
- (d) Explain drugs used in therapy of shock.
- (e) Classify anti-hypertensive drugs. Write mechanism of action of clonidine.
- (f) Write pharmacology of Atorvastation.
- (g) Explain plasma volume expanders.
- (h) Write pharmacology of vasopressin.
- (i) Explain actions of glucocorticoids.

This question paper contains 2 printed pages]

DP—13—2022

FACULTY OF SCIENCE & TECHNOLOGY

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

JANUARY, 2023

PHARMACOGNOSY & PHYTOCHEMISTRY

Paper-II

(Wednesday, 04-01-2023)

Time : 10.00 a.m. to 01.00 p.m.

Time—Three Hours

Maximum Marks—75

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

(ii) 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 extraction. Enlist any *four* types of extraction technique.
- (b) Write biological source and uses of colophony.
- (c) Define metabolic pathway with an example.
- (d) Write chemical constituents of *Mentha* and *Pterocarpus*.
- (e) Write any *four* applications of chromatography.
- (f) Write general identification test for volatile oils.
- (g) Define radioactive isotope with *two* examples.

P.T.O.

- (h) Write morphology of Coriander.
- (i) Define flavonoids and terpenoids.
- (j) Draw the chemical structure of Rutin.
2. Solve any *two* of the following : 2×10=20
- (a) Give isolation, purification and identification and citral.
- (b) Discuss amino acid pathway.
- (c) Discuss industrial production, estimation and utilization of vincristine.
3. Solve any *seven* of the following : 5×7=35
- (a) Write biological source, chemical class and uses of Clove and Aloe.
- (b) Explain Maceration and Percolation technique with suitable example.
- (c) Describe utilization of radioactive isotope in cardiovascular diseases.
- (d) Write the morphology and microscopy of fennel.
- (e) Write composition, therapeutic uses and commercial applications of Rauvolfia.
- (f) Discuss isolation of artemisin.
- (g) Write the industrial production of caffeine.
- (h) Justify HPLC technique for analysis of crude drug with a suitable example.
- (i) Discuss cultivation and collection of opium.

This question paper contains 2 printed pages]

DP—17—2022

FACULTY OF SCIENCE AND TECHNOLOGY

B. Pharm (Fifth Semester) EXAMINATION

JANUARY, 2023

PHARMACEUTICAL JURISPRUDENCE

(Friday, 06-01-2023)

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 indicate full marks.

1. Solve the following :

2×10=20

(a) What is Schedule J and M ?

(b) Write the labelling requirement for ophthalmic preparations.

(c) Give the objective of Pharmacy Act.

(d) Define cannabis.

(e) What do you mean by misbranded drug ?

(f) What are the objectives of Patent Act ?

(g) Define Registered pharmacist and Medical practitioner.

(h) What is schedule M ?

(i) Write the objectives of Medicinal and Toilet Preparation Act.

(j) Write the functions of Drug Inspector.

2. Solve any two of the following :

2×10=20

(a) Explain the conditions to grant license for manufacture of drug specified under Schedule C₁, C₂ and X.

P.T.O.

WT

(2)

DP—17—2022

- (b) Write the constitution and function of central council.
- (c) Give the offence and penalties under Narcotic Drug and Psychotropic Substance Act.
3. Solve any *seven* of the following : 7×5=35
- (a) Discuss in brief about medical termination of Pregnancy Act.
- (b) Give the specimen label, with suitable example for Schedule H and X drugs.
- (c) Describe Schedule 'P' and 'X' under Drug and Cosmetics Act 1940.
- (d) Define opium and opium derivatives.
- (e) Explain in brief the Education Regulation.
- (f) Describe the procedure for obtaining patent.
- (g) Discuss the GMP Guidelines mentioned under Schedule 'M'.
- (h) Define the term advertisement. Mention the objectives of Drug and Magic Remedies Act.
- (i) Write a short note on code of pharmaceutical ethics.

DP—17—2022

This question paper contains 2 printed pages]

CO-3-2019

FACULTY OF SCIENCE AND TECHNOLOGY

B. Pharm. (PCI) (Fifth Semester) EXAMINATION

OCTOBER/NOVEMBER, 2019

MEDICINAL CHEMISTRY-II

(Wednesday, 27-11-2019)

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 the structures and reactions wherever necessary.

1. Solve the following :

10×2=20

- (a) Write example and receptor target for thiazide class of diuretics.
- (b) Outline the synthesis of furosemide.
- (c) Why DES shows estrogenic activity ?
- (d) Write the types of histamine receptors.
- (e) Write the structure of carbonic anhydrase inhibitor drug.
- (f) Write the synthesis of nitroglycerine.
- (g) Write a note on cancer cell cycle.
- (h) Write the site of action of gluco-corticoids and mineralocorticoids.
- (i) What is alkylation shown by anti-cancer drug.
- (j) Write the chemical category of :
 - (i) Metformin
 - (ii) Pioglitazone

2. Solve any two of the following :

2×10=20

- (a) What are anti-histaminics ? Classify them with suitable example. Write structural difference between H₁ and H₂ antagonist.

P.T.O.

- (b) Explain chemistry and nomenclature of steroids.
- (c) What is neoplasm ? Write chemical classification of antineoplastic agents with at least one structure from each class. Write synthesis of methotrexate.
3. Solve any *seven* of the following : 7×5=35
- (a) Explain the SAR of thiazide diuretics.
- (b) Write the synthesis of :
- (i) ISDN
- (ii) Meclorothamine.
- (c) Explain the SAR of aryl group, bridged and aminoalkyl group of local anaesthetics.
- (d) Explain the chemistry and SAR of insulin.
- (e) What are vasodilators ? Write chemical classification of vasodilators.
- (f) Name the receptor target or enzyme inhibition for the following drugs :
- (i) Mercaptopurine
- (ii) Lisinopril
- (iii) Warfarin
- (iv) Dibucaine
- (v) Quinidine
- (g) Explain the chemistry of digoxin and digitoxin.
- (h) Explain the SAR of adrenocorticoids.
- (i) Write a note on oral contraceptives.

This question paper contains 2 printed pages]

CO—08—2019

FACULTY OF SCIENCE OF TECHNOLOGY

B.Pharm. (Fifth Semester) EXAMINATION

OCTOBER/NOVEMBER, 2019

INDUSTRIAL PHARMACY-I

(BP502T)

(Friday, 29-11-2019)

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 appropriate diagrams wherever necessary.

1. Solve the following :

10×2=20

- (a) Explain Angle of Repose.
- (b) Give different types of Tablets.
- (c) Give significance of preformulation.
- (d) What do you mean by creams ? Give their types.
- (e) Define Suspension and Emulsion.
- (f) Differentiate between Syrup and Eliximul.
- (g) Give advantages and disadvantages of capsule.
- (h) Give ideal characteristics of Pellets.
- (i) Differentiate between SVP and LVP.
- (j) Draw a well labelled diagram of an eye.

2. Solve any *two* of the following :

2×10=20

- (a) Define aerosols. Write a detailed note on different aerosol & its components.
- (b) Give an account on Hard Gelatin capsule manufacturing.
- (a) Enlist and explain different quality control tests of parenterals.

P.T.O.

3. Solve any *seven* :

7×5=35

- (a) Explain different evaluation tests for ophthalmics.
- (b) Write short note on different methods of pelletization.
- (c) Explain different types of Gelatins.
- (d) Give formulation of Emulsion.
- (e) Enlist & explain different tablet coating defects.
- (f) Give layout design & explain it for parenteral products.
- (g) Define packaging. Give its objectives. Explain on plastic sealing.
- (h) Explain filling and sealing of Liquid orals.
- (i) Discuss soft gelatin capsule manufacturing process.

This question paper contains 2 printed pages]

CO—13—2019

FACULTY OF SCIENCE AND TECHNOLOGY

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

OCTOBER/NOVEMBER, 2019

PHARMACOLOGY—II

(BP-503T)

(Monday, 2-12-2019)

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

Time—3 Hours

Maximum Marks—75

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

(ii) Write answers to the point only.

(iii) Figures to the right indicate full marks.

1. Solve all the following questions :

10×2=20

(a) Define congestive heart failure and Angina.

(b) Write therapeutic uses of β -blockers.

(c) Give actions of plasminogen activators.

(d) Write the role of antidiuretic hormone.

(e) What are serotonin antagonists ? Give its examples.

(f) Classify autotoxins with suitable examples.

(g) Write the role of parathormone in regulation of plasma calcium level.

(h) Define Bioassay. Enlist different types of Bioassay.

(i) Write the therapeutic uses of Testosterone.

(j) Enlist the prolactin inhibitors drugs and write its uses.

P.T.O.

2. Solve any *two* of the following :

2×10=20

- (a) Define Hypertension. Classify antihypertensive drugs with suitable example. Write in detail pharmacology of drugs acting on Renin-Angiotensin-Aldosterone system.
- (b) Classify NSAIO's with example. Describe in detail mechanical action, pharmacological action, adverse effects and therapeutic uses of Aspirin.
- (c) Define Diabetes mellitus. Classify oral hypoglycemic agents. Discuss pharmacology of metformin.

3. Solve any *seven* of the following :

7×5=35

- (a) Describe the Bioassay of Insulin.
- (b) Discuss pharmacology of digitalis.
- (c) Write pharmacology of Heparin.
- (d) Discuss pharmacological account of glucocorticoids.
- (e) Write pharmacology of Estrogen.
- (f) Write pharmacological actions of prostaglandins.
- (g) Write pharmacology of furosemide.
- (h) Classify anti-hyperlipidemic drugs. Write pharmacology of clofibrate.
- (i) Write pharmacotherapy of shock.

This question paper contains 2 printed pages]

CO—18—2019

FACULTY OF SCIENCE AND TECHNOLOGY

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

NOVEMBER/DECEMBER, 2019

PHARMACOGNOSY AND PHYTOCHEMISTRY-II

Paper (BP 504-T)

(Wednesday, 4-12-2019)

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

Time— Three Hours

Maximum Marks—75

N.B. :— (i) All questions carry equal marks.

(ii) Figures to the right indicate full marks.

(iii) Answer to the point only.

(iv) Draw well labelled diagrams wherever necessary.

1. Answer all the questions :

10×2=20

(a) Define metabolic pathway.

(b) Define glycosides. Give general chemical tests for glycosides.

(c) What is infusion ?

(d) Write the biological source and uses of Aloe.

(e) Write the identification test for citral.

(f) Draw the well labelled diagram of T.S. of cinnamon.

(g) Write the chemical class for :

(i) Pterocarpus

(ii) Ruta.

(h) Give the chemical composition for Gentian and Belladonna.

(i) Give the commercial applications of Vinca and Dioscorea.

(j) Write the biological source and uses of Tea.

P.T.O.

WT

(2)

CO—18—2019

2. Answer any *two* :

2×10=20

- (a) Discuss the industrial production, utilization and estimation of atropine.
- (b) Discuss the pharmacognostic account of digitalis.
- (c) Discuss the utilization of radioactive isotopes in the investigation of biogenetic study.

3. Answer any *Seven* :

7×5=35

- (a) Write morphological and microscopical features of liquorice.
- (b) Discuss the isolation, identification and analysis of glycyrrhizic acid.
- (c) Write the biological source, chemical constituents and uses of :
 - (i) Rauwolfia
 - (ii) Ginger.
- (d) Discuss in detail acetate pathway.
- (e) Discuss supercritical fluid extraction with a suitable example.
- (f) What are glycosides ? Classify it on the basis of linkages. Give its properties and uses.
- (g) Write the identification tests for podophyllotoxin, curcumin, menthol and Rutin.
- (h) Discuss phytochemical analysis by using HPLC with suitable example.
- (i) Write the pharmacognostic account of opium.

CO—18—2019

2

This question paper contains 2 printed pages]

CO—22—2019

FACULTY OF PHARMACEUTICAL SCIENCE

B. Pharm. (Fifth Semester) EXAMINATION

NOVEMBER/DECEMBER, 2019

PHARMACEUTICAL JURISPRUDENCE

(BP-505 T)

(Friday, 6-12-2019)

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) Figures to the right indicate full marks.

1. Solve the following :

10×2=20

- (a) Define Drug as per D & C Act, 1940.
- (b) Define Loan licence and Repacking of Drug as per D & C Act, 1940.
- (c) Give the aim and objectives of Pharmacy Act, 1948.
- (d) Mention any *four* Narcotic drug and Psychotropic Substance.
- (e) Give the formula to calculate the retail price of formulation as per D.P.C.O.
- (f) Define 'Patent' and 'Copyright'.
- (g) Differentiate between Law and Ethics.
- (h) Enlist various types of patents.
- (i) Name the places for termination of pregnancies.
- (j) What is Public Information Officer ?

P.T.O.

2. Solve any *two* of the following : 2×10=20
- (a) Write in brief about offence and penalties under Narcotic Drugs and Psychotropic Substance Act.
 - (b) Give the constitution and function of Central Council.
 - (c) Explain in brief about Schedule M.
3. Solve any *seven* of the following : 7×5=35
- (a) Explain in brief about duties of Drug Inspector.
 - (b) Give the classes of drugs and cosmetics prohibited from import as per D & C Act, 1940.
 - (c) Give the requirement of Bonded Laboratory.
 - (d) Explain in brief the Ethics of pharmacist in relation to his trade.
 - (e) Define opium and coca derivative.
 - (f) What is Schedule 'X' and Schedule 'C' prescribe as per Drug and Cosmetic Act, 1940.
 - (g) Give the function of Animal Welfare Board of India.
 - (h) Give the qualification and duties of Govt. analyst.
 - (i) Give the preindependence picture of pharmacy in India.