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FACULTY OF PHARMACY

B.Pharm. (IV Semester) EXAMINATION

MARCH/APRIL, 2023

PHARMACEUTICAL ORGANIC CHEMISTRY-III

Paper-BP-401-T

(Friday, 17-03-2023)

Time : 2.00 p.m. to 5.00 p.m.

Time— Three Hours

Maximum Marks—75

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

(ii) Answer to the point only.

(iii) Draw correct structure wherever necessary.

1. Answer the following :

10×2=20

(a) Draw the layout of Isomerism.

(b) What are advantages of E & Z naming system over cis-trans naming ?

(c) Draw the structure and give their IUPAC name of pyrrole and pyridine.

(d) Write any two chemical reactions of pyrazole.

(e) Explain about Oppenauer oxidation reaction.

(f) Write Paal-knorr synthesis of furan.

(g) What do you mean by resolution of racemic mixture ?

(h) Write the medicinal uses of imidazole.

(i) Draw different resonance structure of oxazole.

(j) How will you prepare pyridine from acetylene.

2. Answer the following (any two) :

2×10=20

(a) Write short notes on:

(i) Skrup's synthesis for quinoline

(ii) Discuss the construction of pyridine. Give Hantzsch synthesis of pyridine.

P.T.O.

- (b) Write a note on Cahn-Ingold prelog system and Fischer projection rule with suitable example.
- (c) Write detailed notes on
- Dakin reaction.
 - Partial and absolute asymmetric synthesis.

3. Answer the following (any seven):

7×5=35

- Define and classify Heterocyclic compound with suitable example.
- Write Clemmenson reduction reaction with its mechanism.
- Write any *two* methods for preparation and chemical reaction of Indole.
- Define Geometric isomer. How will you distinguish geometric isomer? Explain any *two* methods.
- Write a note on Stereoselective and Stereospecific reaction.
- How will you convert the following :
 - Furan from pyrrole
 - Pyrrole from acetylene and formalin.
- Give the preparation, properties, chemical reaction and medicinal uses of thiazole.
- Draw the structure and IUPAC name of the following -
 - Purine
 - Azepine
 - Quinoline
 - Pyrazole
 - Indole
- Draw different Newmann conformation of n-butane with their stability order. Explain its energy profile diagram.

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FACULTY OF SCIENCE AND TECHNOLOGY

B.Pharm. (IV Semester) EXAMINATION

MARCH/APRIL, 2023

MEDICINAL CHEMISTRY-I

Paper BP402T

(Monday, 20-3-2023)

Time : 2.00 p.m. to 5.00 p.m.

Time—Three Hours

Maximum Marks—75

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

(ii) Figures to the right indicate full marks.

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

- (a) Draw the structure and give IUPAC name of Ibuprofen.
- (b) Define general anaesthesia.
- (c) Write *two* examples of narcotic antagonists.
- (d) Write synthesis of phenytoin.
- (e) Write about chelation.
- (f) Write biosynthesis of NA.
- (g) Write synthesis of carbachol.
- (h) Draw structure and write IUPAC name of Diazepam.
- (i) Write about hydrogen bonding.
- (j) Enlist factors affecting drug metabolism.

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2. Solve any two of the following :

2×10=20

- (a) Define antipsychotics. Explain SAR of phenothiazines.
- (b) Classify NSAIDs with at least one structure from each class. Write synthesis of mefenamic acid.
- (c) Discuss SAR of phenylethanolamines as an α -adrenergic agonists.

3. Solve any seven of the following

7×5=35

(a) Draw structure of the following drugs :

- (i) Salbutamol
- (ii) Haloperidol
- (iii) Ketamine
- (iv) Phenobarbitone
- (v) Valproic acid.

(b) Discuss SAR of morphine.

(c) Write biosynthesis and explain stereochemistry of Ach.

(d) Classify anticonvulsants with structure of at least one drug from each class.

(e) Write synthesis of :

- (i) Propranolol
- (ii) Methohexital.

(f) Write metabolic pathway of noradrenaline.

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- (g) Write synthesis of :
- (i) Methadone hydrochloride
 - (ii) Fentanyl citrate.
- (h) Write MOA of benzodiazepines.
- (i) Discuss SAR of barbiturates.

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FACULTY OF SCIENCE AND TECHNOLOGY

B.Pharm. (Fourth Semester) EXAMINATION

MARCH/APRIL, 2023

PHYSICAL PHARMACEUTICS-II

Paper-BP-403-T

(Thursday, 23-03-2023)

Time : 2.00 p.m. to 5.00 p.m.

Time— Three Hours

Maximum Marks—75

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

(ii) Answer to the point only.

(iii) Draw diagrams wherever necessary.

1. Answer all of the following :

10×2=20

(a) Differentiate in between Flocculated and Deflocculated Suspension.

(b) Define viscosity and give its type.

(c) What is protective action of colloids?

(d) Draw HLB scale.

(e) Define stokes diameter and projected diameter.

(f) What is Heckel equation ?

(g) What is Tyndall effect ?

(h) What do you mean by Accelerated Stability testing ?

(i) Define order of reaction and give its type.

(j) Define Bulk density and tap density.

2. Solve any two of the following :

2×10=20

(a) Define colloids and explain its electrical properties.

(b) Explain in detail any two rotational viscometers.

(c) Discuss the chemical degradation pathway for pharmaceutical product.

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3. Solve any *seven* of the following :

7×5=35

- (a) Explain in detail air permeability methods for particle surface area.
- (b) Write a short note on physical degradation pathway of pharmaceutical product.
- (c) Discuss the stability of emulsion.
- (d) What is thixotrophy ? How will you determine it ?
- (e) Explain in detail methods for determination of order of reaction.
- (f) Discuss in brief principle and working of falling sphere viscometer.
- (g) Write a short note on particle size distribution curve.
- (h) Discuss the non-Newtonian flow of liquid.
- (i) Describe the theories of emulsification.

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FACULTY OF SCIENCE AND TECHNOLOGY

B.Pharm. (IV Semester) EXAMINATION

MARCH/APRIL, 2023

PHARMACOLOGY-I

Paper BP404T

(Saturday, 25-3-2023)

Time : 2.00 p.m. to 5.00 p.m.

Time—Three Hours

Maximum Marks—75

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

(ii) Illustrate your answer with a neat sketch wherever necessary.

(iii) Figures to the right indicate full marks.

1. Answer the following :

10×2=20

(a) Define the following :

(i) Pharmacovigilance

(ii) Therapeutic index.

(b) What is Idiosyncrasy ? Write with an example.

(c) Write the effect of acetylcholine on eye and GIT.

(d) Define allergy and give signs and symptoms of allergic reaction.

(e) Give in brief about G-protein coupled receptor.

(f) Define pre-anaesthetics. Give its uses.

(g) What are Nootropics ? Give its therapeutic uses.

P.T.O.

- (h) Define sedative and hypnotics with example.
- (i) Define and classify antipsychotics.
- (j) What is glaucoma ? Give its types.

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

- (a) Define epilepsy. Classify seizures and give general mechanism of action for drugs used to treat it.
- (b) Explain in detail Parkinson's disease. Give general mechanism of action of anti-Parkinson's drugs.
- (c) Explain in detail different phases of clinical trials.

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

- (a) Explain advantages and disadvantages of various routes of drug administration.
- (b) Describe in detail the principles and mechanisms involved in drug action.
- (c) Explain in detail enzyme inhibition and enzyme induction.
- (d) Write in detail about theories of receptor.
- (e) Describe in detail myasthenia gravis.
- (f) Define Anaesthetics. Describe various stages of anaesthesia.
- (g) Explain in brief Alzheimer's disease and drugs used for treatment of it.
- (h) Describe in detail various routes of drug administration.
- (i) Explain in detail about Receptors.

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FACULTY OF SCIENCE & TECHNOLOGY

B.Pharm. (Fourth Semester) EXAMINATION

MARCH/APRIL, 2023

PHARMACOGNOSY AND PHYTOCHEMISTRY

BP- 405 Paper-I

(Monday, 27-03-2023)

Time : 02.00 p.m. to 05.00 p.m.

Time—Three Hours

Maximum Marks—75

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

(ii) Figures to the right indicate full marks.

(iii) Write to the point only.

1. Answer the following :

2×10=20

(i) Define Adulteration and Evaluation.

(ii) Write the sources of crude drugs with one example each.

(iii) Define Pharmacognosy and Phytochemistry.

(iv) Differentiate between organised and unorganised crude drugs.

(v) Define mutation and polyploidy.

(vi) Define plant tissue culture. Give its types.

(vii) Define palisade ratio and vein termination number.

(viii) Write the biological source and chemical constituents of Jute.

(ix) Give the general identification tests for Alkaloids.

(x) Write the method of preparation of Honey.

P.T.O.

2. Answer any *two* of the following : $2 \times 10 = 20$

- (i) Write synonym, Biological Source, Chemical Constituents, Chemical tests and uses of Tragacanth and Acacia.
- (ii) Write history, scope and development of Pharmacognosy in detail.
- (iii) Write in detail about physical evaluation of crude drugs.

3. Answer any *seven* of the following : $7 \times 5 = 35$

- (i) Explain pharmacological and taxonomical classification of crude drugs.
- (ii) Explain factors influencing the cultivation and collection of medicinal plants.
- (iii) Write about historical development of PTC. Give the micro and macro nutrients required for PTC.
- (iv) Write about Ayurveda and Sidha System of medicine.
- (v) Give biological source, chemical constituents and uses of Bees wax and Castor oil.
- (vi) Give the category and classification of marine drugs with examples.
- (vii) Write the biological source, chemical constituents and uses of Gelatin and Papain.
- (viii) Write a note on Natural allergens and Teratogens.
- (ix) What are Carbohydrates ? Give its chemistry and general identification tests.