VO—06—2022

FACULTY OF PHARMACEUTICAL SCIENCES AND TECHNOLOGY

B.Pharm. (II Year) (IV Semester) EXAMINATION

JUNE/JULY, 2022

PHARMACEUTICAL ORGANIC CHEMISTRY–III

(BP401T)

(Wednesday, 29-6-2022)   **Time : 2.00 p.m. to 5.45 p.m.**

Time—3.45 Hours   *Maximum Marks—75*

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

       (*ii*)   Draw structures and write chemical reactions wherever necessary.

1.   Answer all of the following :   10×2=20
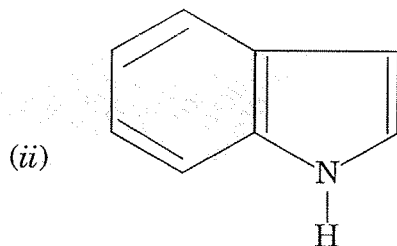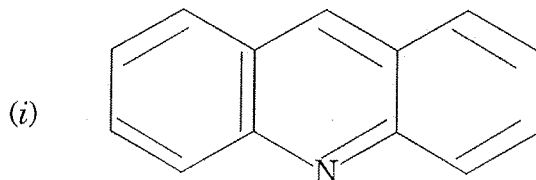
   (*a*)   Define stereoisomerism.

   (*b*)   Why meso compounds are optically inactive.

   (*c*)   Draw the following structures :

      (*i*)   cis-(2-butene)

      (*ii*)   Fumaric acid.

   (*d*)   Identify and name the following organic compounds :

      (*i*)

      (*ii*)

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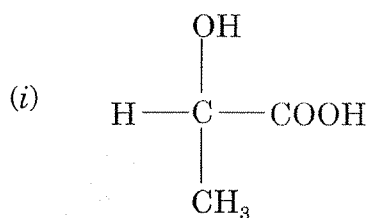
(e)   Write medicinal uses of azepines.

(f)   Why is pyridine weaker base than aliphatic tertiary amines ?

(g)   How to prepare furan from furfural ?

(h)   Draw resonance structures of thiophene.

(i)   Write true/false :

    (i)   Oxazole is six membered ring.

    (ii)   Anticonformation of n-butane is most stable conformation.

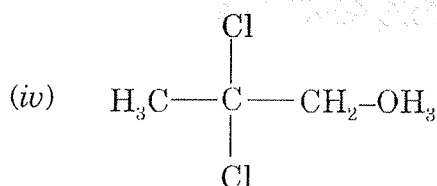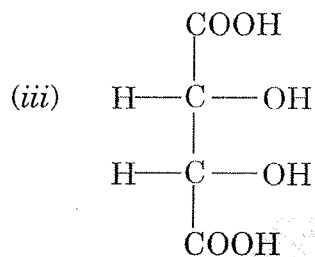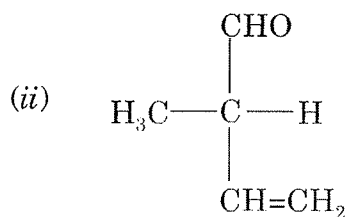(j)   Define diastereomers with example.

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

(a)   Write any *three* chemical reactions of quinoline and *two* preparation methods pyrrole.

(b)   Write nitration, mercuration, sulphonation, ring cleavage and reduction reactions of thiophene.

(c)   Explain mechanism of the following reaction :

    (i)   Beckmann rearrangement

    (ii)   Birch reduction.

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

(a)   Write note on Clemmensen reduction reaction.

(b)   Write note on chair conformation and boat conformation of cyclohexane.

(c)   Assign RIS conformation to the following compounds (if any) by implementing CIP rules.

$$\text{(i)} \quad H-\overset{\overset{\displaystyle OH}{|}}{\underset{\underset{\displaystyle CH_3}{|}}{C}}-COOH$$

(ii)

$$H_3C-\overset{\overset{\displaystyle CHO}{|}}{\underset{\underset{\displaystyle CH=CH_2}{|}}{C}}-H$$

(iii)

$$\overset{\overset{\displaystyle COOH}{|}}{\underset{\underset{\displaystyle COOH}{|}}{\overset{|}{\underset{|}{\underset{H-C-OH}{H-C-OH}}}}}$$

(iv)

$$H_3C-\overset{\overset{\displaystyle Cl}{|}}{\underset{\underset{\displaystyle Cl}{|}}{C}}-CH_2-OH_3$$

(d) Explain any *two* methods for determination of configuration of geometrical isomers.

(e) Complete the following reactions :
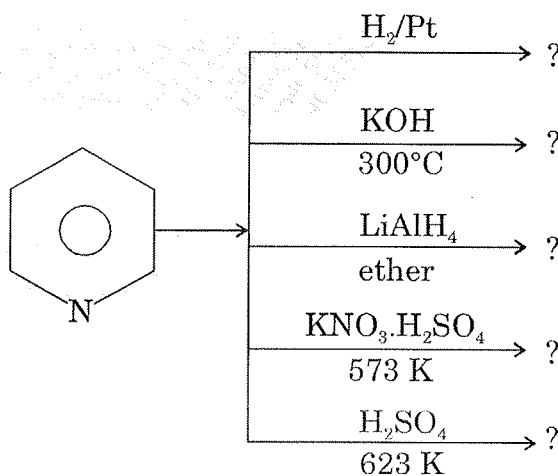
(f) Write oxidation and reduction reaction of isoquinoline.

(g) Classify heterocyclic compounds with examples.

(h) Write medicinal uses of pyrimidine and pyrazole.

(i) Answer the following questions :

    (i) Write any *two* preparation methods of thiazole.   3

    (ii) Draw resonance structures of imidazole.   2

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FACULTY OF SCIENCE AND TECHNOLOGY

B. Pharm. (II Year) (IV Sem.) EXAMINATION

JUNE/JULY, 2022

MEDICINAL CHEMISTRY–I

(BP402T)

(Friday, 1-7-2022)   **Time : 2.00 p.m. to 5.45 p.m.**

Time—3.45 Hours   *Maximum Marks—75*

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

       (ii) Figures to the right indicate full marks.

       (iii) Answer to the point only.

       (iv) Draw the structures whenever necessary.

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

   (a) Give therapeutic uses of Aspirin.

   (b) Give structure and uses of Dicylomine Hydrochloride.

   (c) Enumerate physicochemical properties in relation to biological action.

   (d) Define :

      (i) Agonist

      (ii) Antagonist.

   (e) Give the synthesis of salbutamol.

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(f) Write the mode of action of clonazepam.

(g) Classify narcotic antagonist with suitable examples.

(h) Give the structures of any *two* adrenergic neuro-transmitters.

(i) Give an account on mechanism of action of antipsychotic drugs.

(j) Differentiate between Benzodiaxptoes and Barbfturates.

2. Answer any *two* of the following (long answer questions) :   2×10=20

(a) What are antipsychotics ? Classify them with examples and structure. Discuss in detail SAR of phenothiazeines.

(b) Outline the synthesis of :

    (i) Phenytoin

    (ii) Mefenamic acid

    (iii) Halothane

    (iv) Propranolol

(c) What are sedatives and Hypnotics ? Classify them with examples and structures. Discuss in detail SAR of Benzodiazepines.

3. Answer any *seven* of the following (short answer questions) :   7×5=35

(a) Give an account of Biosynthesis of Acetylcholine.

(b) Write a note on β-adrenergic blocker.

(c) Give mechanism of action and therapeutic uses of Atropine sulphate.

(d) What are parasympathamimetic agents ? Give structural classification of parasympathomimetics with examples.

(e) Explain role of phase I reactions in drug metabolism with examples.

(f) Discuss in detail SAR of sympathomimetric agents.

(g) Write a note on cholinesterase reactivator.

(h) Classify general anesthetics with their structures.

(i) Draw the structures of following compounds :

    (i) Neostigmine

    (ii) Asenolol

    (iii) Dopamine

    (iv) Codeine

    (v) Ibuprofen.

This question paper contains **2** printed pages]

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FACULTY OF SCIENCE AND TECHNOLOGY

B. Pharm. (Fourth Semester) EXAMINATION

MAY/JUNE, 2022

PHYSICAL PHARMACEUTICS–II (BP403T)

(Monday, 4-7-2022)   **Time : 2.00 p.m. to 5.45 p.m.**

Time— 3.45 *Hours*   *Maximum Marks—*75

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

       (*ii*)   Draw a diagram wherever necessary.

       (*iii*)   Use log table/calculator if necessary.

1.   Answer all the questins :   10×2=20

   (*a*)   What are Physical Characteristics of Colloidal dispersions ?

   (*b*)   What is criteria for selection of the viscometer ?

   (*c*)   Differentiate between flocculated and deflocculated suspension.

   (*d*)   Define True density and Enlsit the methods for determination of true density.

   (*e*)   Enlist methods for determination of order of reactions.

   (*f*)   Define Krafft point and Cloud point.

   (*g*)   Give short note on Newtons law of flow.

   (*h*)   Define suspension and emulsion.

   (*i*)   Enlist fundamental micromeritic properties of powder.

   (*j*)   A drug decomposes following first order kinetics. The half life of the reaction is 35 min. What will be the rate constant and shelf life of drug ?

P.T.O.

2.   Answer any *two* questions out of *three* :   2×10=20

   (*a*)   Explain optical and kinetic properties of colloids in detail.

   (*b*)   Explain methods for measurement of surface area of given sample of powder.

   (*c*)   Explain rheograms of Newtonian and Non-Newtonian Systems.

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

   (*a*)   Give Pharmaceutical applications of colloids.

   (*b*)   Write short note on theories of emulsification.

   (*c*)   Describe in detail non-Newtonian Systems of rheology.

   (*d*)   Give the applications of micromeritics study in Pharmacy.

   (*e*)   Explain effect of temperature and solvent on chemical degradation of Pharmaceutical Product.

   (*f*)   What are different types of colloids ? Explain in detail ?

   (*g*)   Write a short note on thinotropy.

   (*h*)   What are types of emulsion ? Give identification tests for it ?

   (*i*)   Write in brief about seiving method for measurement of particle size of given sample of powder.

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FACULTY OF SCIENCE AND TECHNOLOGY

B. Pharm. (Second Year) (Fourth Semester) EXAMINATION

MAY/JUNE, 2022

PHARMACOLOGY-I

(BP404T)

(**Wednesday, 6-7-2022**)   **Time : 2.00 p.m. to 5.45 p.m.**

Time— 3.45 *Hours*   *Maximum Marks*—75

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

(ii) Draw a neat labelled diagram whenever necessary.

(iii) Answer to the point only.

1.   Answer the following :   2×10=20

(a)   Define the terms :

(i)   Pharmacokinetics

(ii)   Pharmacodynamics.

(b)   What are agonist and antagonist ?

(c)   Write the mechanism of action of Disulfiram.

(d)   What are enzyme induction and enzyme inhibition ?

(e)   What is Nootropics ? Give its examples.

(f)   What are Drug addiction and Drug tolerance ?

(g)   Enlist the drugs used in the treatment of Myasthenia gravis.

(h)   Define and classify Receptor.

(i)   What are antagonism and synergism ?

(j)   Classify local anaesthetic agents.

P.T.O.

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

   (*a*) What is parasympathomimetic agents ? Classify it. Write pharmacological account of Acetylcholine.

   (*b*) Define and classify sedative and hypnotics and write pharmacological account of Barbiturates.

   (*c*) Discuss in detail mechanism and factors affecting drug absorption.

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

   (*a*) What is drug excretion ? Write factors affecting drug excretion.

   (*b*) Write the principles and mechanism of Drug action.

   (*c*) Define and classify adverse drug reactions.

   (*d*) Write the phases of clinical trials.

   (*e*) Write the steps of neurohumoral transmission in ANS.

   (*f*) Write the pharmacological account of Adrenalin.

   (*g*) Classify parasympatholytic agents. Write pharmacology of Atropine.

   (*h*) Classify Antiepileptic agents and write MoA of Phenytoin.

   (*i*) Write the mechanism of Drug Interactions with examples.

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FACULTY OF SCIENCE AND TECHNOLOGY

B.Pharm. (Second Year) (Fourth Semester) EXAMINATION

MAY/JUNE, 2022

PHARMACOGNOSY AND PHYTOCHEMISTRY-I

(BP405T)

(Thursday, 7-7-2022)　　　　　　　　　**Time : 2.00 p.m. to 5.45 p.m.**

Time— 3.45 *Hours*　　　　　　　　　　　　　*Maximum Marks*—75

N.B. :— (*i*)　Draw a diagram wherever necessary.

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

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

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

　(*a*)　Write biolgoical sources and uses of Hemp.

　(*b*)　Give idntification tests for glycosides.

　(*c*)　D∋fine :

　　　(*i*)　Vein inslet number

　　　(*ii*)　Stomatal index.

　(*d*)　List out any *four* newer medicinal agents from marine source.

　(*e*)　Define pharmacognosy.

　(*f*)　What are organised drugs ? Give its suitable example.

　(*g*)　Give the advantages of edible vaccines.

　(*h*)　Enlist various uses of Serratiopeptidase.

　(*i*)　Write down any *four* examples of plant hormones.

　(*j*)　What is drug adulteration ? Give its example.

P.T.O.

2. Long answer type questions (answer **2** out of 3) :   2×10=20

(a) Describe the various factors affecting on cultivation of Medicinal plant.

(b) Define drug adulteration. Explain organoleptic and microscopical evaluation of crude drugs.

(c) Explain the Ayurvedic and Unani system of Medicine.

3. Short answer type questions (Answer **7** out of 9) :   7×5=35

(a) Define Alkaloids. Discuss chemical classification of alkaloids.

(b) Define pharmacognosy. Explain history and scope of Pharmacognosy.

(c) Discuss the various applications of plant tissue culture in pharmacognosy.

(d) Write a note on animal as a source of drug.

(e) Briefly discuss the pharmacological classification of drugs.

(f) What are teratogens ? Describe in detail.

(g) Write a pharmacognostic account of wool fat.

(h) Explain polyploidy and hybridization with reference to medicinal plant.

(i) Write down the classification and identification tests for tannins.