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PP—33—2023

FACULTY OF SCIENCE AND TECHNOLOGY

B.Pharm. (First Year) (First Semester) EXAMINATION

NOVEMBER/DECEMBER, 2023

PHARMACEUTICAL ANALYSIS—I

Paper BP-102T

(Thursday, 28-12-2023)   **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 :   2×10=20

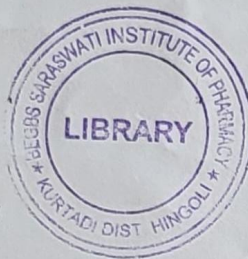   (a)   What is metal ion indicator ?

   (b)   What are the secondary standards ?

   (c)   Comment on 'Blank determination'.

   (d)   Mention indicator and primary standard used in standardization of sodium thiosulphate.

   (e)   What is meant by Acidimetry Titration ?

P.T.O.

   (f)   What are the Adsorption indicators ?

   (g)   What are the ideal requirements of chelating agent used in complexo-metric titration ?

   (h)   What do you mean by diazotisation titration ?

   (i)   Give 'Ilkovic equation'.

   (j)   Comment on 'Iodimetry'.

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

   (a)   Explain the following conductometric titration with suitable example :

      (i)   Strong acid Vs. Strong base

      (ii)   Weak acid Vs. Strong base.

   (b)   Explain steps involved in gravimetry.

   (c)   Describe principle and procedure of standardisation of oxalic acid and hydrochloric acid.

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

   (a)   Write in detail classification of solvents used in non-aqueous titration.

   (b)   Write principle and procedure of Mohr's method.

   (c)   Describe the term 'Masking and Demasking agents'.

(d) Explain principle and applications of Bromatometry.

(e) Write the construction and working of calomel electrode.

(f) Describe different sources of errors.

(g) Write principle and procedure of estimation of 'Ephedrine HCl'.

(h) Discuss in detail instrumentation of polarography apparatus.

(i) Describe sources of impurities in medicinal agents.

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

PP—37—2023

FACULTY OF PHARMACEUTICAL SCIENCE AND TECHNOLOGY

B.Pharm. (First Year) (First Semester) EXAMINATION

NOVEMBER/DECEMBER, 2023

PHARMACEUTICS

Paper–I (BP-103T)

(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)　Figures to the right indicate full marks.

　　　　(iii)　Answer to the point only.

1.　Solve the following :　　　　　　　　　　　10×2=20

　(a)　Define Pharmacy.

　(b)　Differentiate between lotion and liniments.

　(c)　What is the importance of date in prescription ?
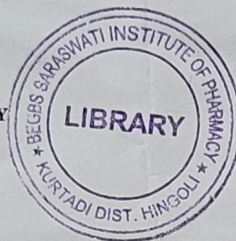
　(d)　Define :

　　(i)　Ointment

　　(ii)　Pastes.

　(e)　Give advantages of emulsions.

　(f)　Why are adjuncts needed in preparation of monophasic liquid dosage form ?

P.T.O.

　(g)　Give ideal properties of suspensions.

　(h)　Give classification of suspensions.

　(i)　Write any *two* formulas for calculation of dose in children.

　(j)　Why is glycerine used as a base in throat paint ?

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

　(a)　Define suppositories. Explain in detail different methods of preparation of suppositories.

　(b)　What do you mean by Posology ? Discuss different factors affecting dose of drug.

　(c)　Define and classify sterile and non-sterile dosage form.

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

　(a)　Describe in brief physical incompatibility.

　(b)　Write in brief about eutectic mixtures.

　(c)　Discuss in brief different methods of preparation of syrups.

　(d)　Define emulsion. Write in detail various identification tests for emulsion.

　(e)　Give different factors influencing dermal penetration of drugs.

　(f)　Differentiate between flocculated and deflocculated suspension.

　(g)　Write the advantages and disadvantages of powders.

　(h)　Write in brief about parts of prescription.

　(i)　Give formula and method of preparation of mouth washes.

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FACULTY OF PHARMACEUTICAL SCIENCE AND TECHNOLOGY

B.Pharm. (First Semester) EXAMINATION

JANUARY, 2024

PHARMACEUTICAL INORGANIC CHEMISTRY

(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) Draw structure(s) and write reaction(s) wherever necessary.

       (iii) Figures to the right indicate full marks.

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

   (a)   Define limit test. Enlist limit test.

   (b)   What are ideal properties of antacids ?

   (c)   What are expectorants ? Classify expectorants.

   (d)   Give pharmaceutical applications of radiopharmaceuticals.

   (e)   Why is nitric acid used in limit test for chloride ?

   (f)   Discuss Oral Rehydration Salt (ORS).

   (g)   What is cyanide poisoning ? Give name of antidote for it.

   (h)   Give functions of any *two* major Physiological ions.

   (i)   Give an account of buffer capacity.

   (j)   Define emetics with a suitable example.

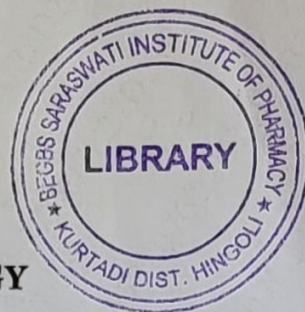2.   Answer any *two* of the following :   2×10=20

   (a)   Classify GIT agents. Why is combination of antacids used ? Justify with example. Give preparation and uses of sodium bicarbonate.

   (b)   Classify dental products. Define dentrifices. Write a note on zinc oxide eugenol (ZOE) cement.

   (c)   What are major extra and intracellular electrolytes ? Explain electrolyte used in replacement therapy. Give preparation and uses of calcium gluconate.

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

   (a)   What are haematinics. Provide preparation method, properties and uses of ferrous sulphate ($FeSO_4$).

   (b)   Explain preparation, reaction and procedure of limit test of sulphate.

   (c)   Discuss principle and reaction of limit test of arsenic. Draw its diagram.

   (d)   What are different acid-base theories. Discuss any *two*.

   (e)   What is radioactivity and half life ? Give account an of any *two* methods of radioactivity measurement.

   (f)   Classify and write mechanism of action of antimicrobials.

   (g)   Define astringent. Write molecular formula, preparation, properties and uses of zinc sulphate.

   (h)   Discuss different sources of impurities.

   (i)   Discuss physiology of acid-base balance.

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

PP—29—2023

FACULTY OF SCIENCE AND TECHNOLOGY

B.Pharm. (First Year) (First Semester) EXAMINATION

NOVEMBER/DECEMBER, 2023

HUMAN ANATOMY AND PHYSIOLOGY–I

Paper BP101T

(Tuesday, 26-12-2023)   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 a neat labelled diagram wherever necessary.

(iii)   Answer to the point only.

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

(a)   Define Human Anatomy and Human Physiology.

(b)   Enlist the functions of mitochondria.

(c)   Give locations and functions of nervous tissues.

(d)   Enlist the bones of axial skeleton.

(e)   Define the term articulation.

(f)   Give composition and functions of blood.

(g)   Write a significance of Rh factor.

(h)   Enlist any *six* cranial nerves.

(i)   Draw a neat labelled diagram of heart.

(j)   Define the term cardiac out. How is it calculated ?

P.T.O.

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

    (a)   Draw a neat labelled diagram of plasma membrane. Discuss in detail about various mechanism involved in transport of materials across plasma membrane.

    (b)   Define the term blood coagulation. Discuss in detail about various phases of blood coagulation process.

    (c)   Define the term blood pressure. Discuss in detail long-term and short-term regulation of blood pressure.

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

    (a)   Write a note on conducting system of heart.

    (b)   Discuss in short about systemic blood circulation.

    (c)   Draw neat labelled diagram of eye. Enlist its various physiological functions.

    (d)   Write a note on sympathetic nervous system.

    (e)   Write about ABO system.

    (f)   Write anatomy and physiology of lymph node.

    (g)   Classify structural and functional classification of joints.

    (h)   Write a note on physiology of muscle contraction.

    (i)   Write on structure, locations and functions of epithelial tissue.

This question paper contains 2 printed pages

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FACULTY OF SCIENCE AND TECHNOLOGY

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

NOVEMBER/DECEMBER, 2023

HUMAN ANATOMY AND PHYSIOLOGY–II

Paper BP201T

(Wednesday, 27-12-2023) 　　　　**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 a neat labelled diagram wherever necessary.

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

　(a)　Give composition and functions of CSF.

　(b)　Enlist different ventricles of brain.

　(c)　Give composition of saliva.

　(d)　Enlist the functions of creatine phosphate.

　(e)　Define lung volumes and lung capacities.

　(f)　Draw a neat labelled diagram of nephron.

　(g)　Classify endocrine hormones with suitable examples.

　(h)　Enlist the functions of pineal gland.

　(i)　Define the term pregnancy and parturition.

　(j)　Enlist the role of sex hormones.

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

　(a)　Draw a neat labelled diagram of brain. Discuss in detail various sensory area and motor areas of cerebral cortex.

　(b)　Describe in detail anatomy and physiology of stomach and liver.

　(c)　Describe in detail anatomy and physiology of Female Reproductive System.

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

　(a)　Write a note on anatomy and physiology of Brain Stem.

　(b)　Write a note on electrophysiology of brain.

　(c)　Discuss in short about digestion of protein in GIT.

　(d)　Give a note on anatomy and physiology of Pancrease.

　(e)　Write about transport of respiratory gases.

　(f)　Write a note on physiology of urine formation.

　(g)　Discuss about anatomy and physiology of Thyroid gland.

　(h)　Discuss in detail various phases of menstrual cycle.

　(i)　Write a short note on physiology of respiration.

This question paper contains **3** printed pages]

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FACULTY OF PHARMACEUTICAL SCIENCE AND TECHNOLOGY

B.Pharm. (Second Semester) EXAMINATION

NOVEMBER/DECEMBER, 2023

PHARMACEUTICAL ORGANIC CHEMISTRY–I

Paper BP202T

(Friday, 29-12-2023)   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 structure(s) and write reaction(s) wherever necessary.

  (iii)   Figures to the right indicate full marks.

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

   (a)   Write the structure and uses of acetic acid and lactic acid.

   (b)   How do you differentiate aldehydes and ketones by chemical test ?

   (c)   Define metamerism with example.

   (d)   Give the reason why Trimethyl amine is less basic than dimethylamine.

   (e)   Write the structure of :

      (i)   1, 3 butadiene

      (ii)   2, 4, 6 Tribromo aniline.

P.T.O.

(2)   PP—35—2023

   (f)   Give an example of Diels Alder reaction.

   (g)   Explain the stability of alkenes with an example.

   (h)   Give the structure and uses of Iodoform and Chloroform.

   (i)   Write a method for conversion of carboxylic acid to acid halide.

   (j)   Define electromeric effect with an example.

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

   (a)   Define elimination reaction. Discuss the kinetics and mechanism of E_1 and E_2 reaction with suitable example.

   (b)   Explain the reaction and mechanism of Perkin condensation and aldol condensation.

   (c)   (i)   Define and classify carbocation. Add a note on stability of carbocation.

      (ii)   Differentiate between SN_1 and SN_2 reactions.

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

   (a)   Why carboxylic acid are acidic in nature ? Write the effect of electron withdrawing group on acidity.

   (b)   What is hybridization ? Write a note on sp_3 hybridization in alkanes.

   (c)   What are aliphatic amines ? Explain any *three* chemical reactions of aliphatic amine.

   (d)   Give any *four* chemical reactions of alkyl halides.

(e)   What are carbonyl compounds ? Give any *three* general reactions of ketones.

(f)   How do you distinguish primary, secondary and tertiary alcohols by chemical tests ?

(g)   Write the general rules for IUPAC nomenclature of alkanes.

(h)   Explain the reaction and mechanism of Cannizzaro reaction.

(i)   Write structure of :

    (i)   Salicylic acid

    (ii)   Ethanolamine

    (iii)   Benzaldehyde

    (iv)   Methyl alcohol

    (v)   Dichloromethane.

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

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FACULTY OF SCIENCE AND TECHNOLOGY (PHARMACEUTICAL SCIENCE)

B.Pharm. (Second Semester) EXAMINATION

JANUARY, 2024

BIOCHEMISTRY

Paper–(BP-203T)

(Monday, 01-01-2024)   **Time : 10.00 a.m. to 1.00 p.m.**

Time—3 Hours   *Maximum Marks—75*

N.B. :— (i)   Draw diagram/structure wherever required.

     (ii)   Figures to the right indicate full marks.

1.   Attempt *all* of the following :   10×2=20

  (a)   Define Carbohydrate.

  (b)   Why is sucrose known as invert sugar ?

  (c)   Write a note on tertiary structure of protein.

  (d)   Define Saponification number.

  (e)   What is diabetes ?

  (f)   Draw the structure ATP.

  (g)   What is meant by ketone bodies ?

  (h)   Define transamination.

  (i)   Draw the structure of purine.

  (j)   Define transcription.

P.T.O.

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

  (a)   Define biomolecules. Give their characters. Explain different biomolecules with their functions.

  (b)   Discuss glycolysis. Explain stepwise pathway of glycolysis. Give its energetic and significance.

  (c)   Explain factors affecting enzyme activity and write a note on reversible enzyme inhibitor with example.

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

  (a)   Write a note on isoenzyme, NAD and NADP.

  (b)   Explain DNA replication.

  (c)   Discuss the functions of different Biomolecules.

  (d)   Explain ETC with its mechanism.

  (e)   Differentiate between Glycolysis and HMP shunt.

  (f)   What are lipids ? Explain various disorders of lipids.

  (g)   Analyze the relationship between energy, enthalpy and entropy.

  (h)   Prepare a note on mechanism of enzyme action.

  (i)   Write a note on polymerase chain reaction.

This question paper contains 2 printed pages]

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FACULTY OF SCIENCE AND TECHNOLOGY
(PHARMACEUTICAL SCIENCES)

B.Pharm. (Second Semester) EXAMINATION
JANUARY, 2024

PATHOPHYSIOLOGY
(BP–204T)

(Wednesday, 03-01-2024)   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.

1. Answer all of the following :   10×2=20

   (a) Define Homeostasis.

   (b) Write down sign and symptoms of Hypertension.

   (c) Enlist various neurological diseases.

   (d) What is haemophilia ?

   (e) Explain arteriosclerosis

   (f) Give causes of anemia.

   (g) Enlist chemical mediators of inflammation.

   (h) Give sign and symptoms of Epilepsy.

   (i) Enlist drugs used in treatment of gout.

   (j) Define cell Injury.

P.T.O.

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

   (a) What is cancer ? Give etiology and pathogenesis of cancer.

   (b) Write etiology and pathogenesis of asthma and chronic obstructive pulmonary disease.

   (c) Write down pathogenesis of Hypertension and Angina pectoris.

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

   (a) Write a short note on goitre.

   (b) Explain in brief pathophysiology of Atherosclerosis.

   (c) Explain in detail about Atrophy and Hypertrophy.

   (d) What is cell alkalosis and cell acidosis ?

   (e) Differentiate between acute and chronic renal failure.

   (f) Outline about Parkinsonism disease.

   (g) Explain in detail about peptic ulcer.

   (h) Outline treatment of tuberculosis.

   (i) What are sexually transmitted diseases ? write a note on AIDS.