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CO—1—2019
FACULTY OF PHARMACEUTICAL SCIENCE AND TECHNOLOGY
B. Pharmacy (First Year) (First Semester) EXAMINATION
MARCH/APRIL, 2019
HUMAN ANATOMY AND PHYSIOLOGY—I

Paper (BPLO-IT)

(Monday, 22-4-2019)   (BP-101-T)   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 neat labelled diagrams wherever necessary.

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

(a)   Define anatomy and physiology.

(b)   Give functions of Endoplasmic reticulum.

(c)   Define tissue. Enlist its types.

(d)   Give classification of bones.

(e)   Enlist the contractile protein of skeletal muscle.

(f)   Give composition of blood.

(g)   Draw neat labelled diagram of Lymph node.

(h)   Give classification of peripheral nervous system.

(i)   Differentiate between arteries and veins.

(j)   Write normal value and life span of leukocytes.

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

(a)   Define blood pressure. Discuss in detail short-term and long-term mechanism involved in regulation of blood pressure.

P.T.O.

(b)   What is coagulation ? Discuss in detail about intrinsic and extrinsic pathway of blood coagulation.

(c)   Draw neat labelled diagram of plasma membrane. Describe in detail about active and passive transport mechanism.

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

(a)   What is Homeostasis ? Explain negative feedback mechanism with example.

(b)   Explain in detail about anatomy and physiology of skin.

(c)   Discuss about physiology and muscle contraction.

(d)   Write about anatomy and physiology of epithelial tissue.

(e)   Explain about bones of appendicular skeleton.

(f)   Explain in detail synovial joint.

(g)   What is erythropoiesis ? Explain the steps in erythropoiesis.

(h)   Write anatomy and physiology of eye.

(i)   Write about conducting system of heart.

This question paper contains 2 printed pages]

CO—05—2019

FACULTY OF PHARMACEUTICAL SCIENCE

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

MARCH/APRIL, 2019

PHARMACEUTICAL ANALYSIS-I

(Wednesday, 24-4-2019) CBP-102-J 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. Answer the following :   20

    (a) Define molarity and normality.

    (b) Give applications of polarography.

    (c) How to prepare conductivity water ?

    (d) Sketch a neat labelled diagram of silver chloride electrode.

    (e) Define oxidising agent and reducing agent.

    (f) Give difference between co-precipitation and post-precipitation.

    (g) Enlist types of non-aqueous solvents.

    (h) Define the term accuracy and precision.

    (i) Enlist the name of indicators used in non-aqueous titration.

    (j) What is masking and demasking agent.

2. Solve any two of the following :   20

    (a) What are mixed indicators ? Explain theories of acid-base indicators.

    (b) Define precipitation titration. Explain Mohr's method.

    (c) Explain in short electrochemical cell. Give construction and working of calomel electrode.

                                                                            P.T.O.

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3. Solve any *seven* of the following :

   (a) Define primary and secondary standards. Give ideal requirements for primary standard substances.

   (b) Give the procedure for preparation and standardisation of sodium hydroxide solution.

   (c) Write estimation of sodium benzoate.

   (d) Define non-aqueous titration. Classify non-aqueous solvents with example.

   (e) Describe steps involved in gravimetric analysis.

   (f) Give applications of conductometric titration.

   (g) Give construction and working of dropping mercury electrode.

   (h) Discuss Ilkovic equation.

   (i) Write the classification of complexometric titration.

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

CO—09—2019

FACULTY OF PHARMACEUTICAL SCIENCES AND TECHNOLOGY

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

MARCH/APRIL, 2019

PHARMACEUTICS—I

(Friday, 26-4-2019)   (BP—103—T)   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 Drug and Dosage form.

   (b)   Give importance of Pharmacopoeia.

   (c)   Mention different systems of weights and measures.

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

   (e)   What is the duty of pharmacist in case the medicine is prescribed in over dose ?

   (f)   Write the equation of Stokes law.

   (g)   Define ointment. How does it differ from pastes ?

   (h)   Give Young's and Dilling's formula for calculation of dose in children.

   (i)   Define :

      (i)   Throat paints

     (ii)   Elixirs

   (j)   Give advantages of suppositories.

P.T.O.

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

   (a)   Define and classify in detail sterile and non-sterile dosage forms.

   (b)   What is incompatibility ? Explain in detail chemical incomptability.

   (c)   Define emulsions. Discuss in blief methods of preparation and stability parameters for emulsions.

3. Solve any *seven* of the following :   7×2=35

   (a)   Write in brief about superscription and inscription in prescription.

   (b)   Describe in brief history of profession of pharmacy in India.

   (c)   Define Posology. Write in brief about :

      (i)   Synergism

      (ii)   Idiosyncracy

      (iii)   Tachyphylaxis.

   (d)   Define suspensions. Give advantages of suspensions.

   (e)   Give evaluation of semisolid dosage form.

   (f)   Give formula and method of preparation of Mouthwash.

   (g)   Define suppositories. Write in brief cold compression method.

   (h)   Write a note on simple and compound powders.

   (i)   Describe different excipients used in formulation of liquid dosage form.

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CO—13—2019

FACULTY OF SCIENCE AND TECHNOLOGY

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

MARCH/APRIL, 2019

PHARMACEUTICAL INORGANIC CHEMISTRY

(Monday, 29-4-2019) CBP—1047 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. Answer the following :   20

(a) Sketch a neat labelled diagram of limit test for arsenic.

(b) Define buffer capacity.

(c) Give composition of ORS.

(d) Why calcium compounds as antacid are usually administered with magnesium salt.

(e) Name *two* inorganic substances used as antimicrobial agents.

(f) Give molecular formula and molecular weight of potash alum.

(g) What are expectorants ? How do they act ?

(h) Give properties of alpha rays.

(i) Define emetics with example.

(j) Give uses of I^{131}.

P.T.O.

2. Answer any *two* of the following :

20

    (a) Discuss in detail about physiological acid base balance.

    (b) Give ideal properties of antacids. Write properties and uses of Aluminium hydroxide gel.

    (c) What is anaemia ? How would you treat it ? Give method of preparation, properties and uses of ferrous sulphate.

3. Solve any *seven* of the following :

35

    (a) Give principle and procedure of limit test for sulphate.

    (b) Give properties and assay of calcium gluconate.

    (c) Define saline cathartics. Give properties and uses of magnesium sulphate.

    (d) Write mechanism of action of antimicrobials.

    (e) What are astringents ? Give method of preparation and uses of zinc sulphate.

    (f) Define Acidifying agents. Write properties and uses of Dil. Hydrochloric acid.

    (g) Write a role of fluoride in the treatment of dental caries.

    (h) Describe two methods of measurement of radioactivity.

    (i) Write pharmaceutical applications of radioactive substances.

CO—03—2019

FACULTY OF PHARMACEUTICAL SCIENCE AND TECHNOLOGY

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

MARCH/APRIL, 2019

HUMAN ANATOMY AND PHYSIOLOGY-II

[BP-201T]

(Tuesday, 23-4-2019)

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

Maximum Marks—75

Time—3 Hours

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

(ii) Write to the point only.

(iii) Figures to the right indicate full marks.

10×2=20

1. Solve all the following :

   (a) What are neurotransmitters ?

   (b) Define absorption and digestion.

   (c) Give role of ATP.

   (d) Enlist upper and lower respiratory organ.

   (e) Draw a neat labelled digram of nephron.

   (f) Write role of parathyroid hormone.

   (g) Define menarche and menopause.

   (h) Give composition of urine.

   (i) Define peptic ulcer ?

   (j) Give composition and functions of pancreatic juice.

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

   (a) Draw neat labelled diagram of brain. Explain anatomy and physiology of cerebral cortex.

   (b) Describe in detail anatomy and physiology of thyroid hormone.

   (c) Discuss in detail about female reproductive system.

P.T.O.

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

   (a)   Discuss about oogenesis.

   (b)   Discuss about importance of Genetics.

   (c)   Write anatomy and physiology of adrenal gland.

   (d)   Give anatomy and physiology of liver.

   (e)   Write anatomy and physiology of Hypothalamus.

   (f)   Draw neat labelled diagram of neuron. Discuss in detail the mechanism of conduction of nerve impulses ocross nerve fibre.

   (g)   Discuss about various phases of gastric secretion.

   (h)   Write about various phases of menstrual cycle.

   (i)   Write about Renin-angiotensin system.

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CO—7—2019

FACULTY OF SCIENCE AND TECHNOLOGY

B.Pharmacy (Second Semester) EXAMINATION

MARCH/APRIL, 2019

PHARMACEUTICAL ORGANIC CHEMISTRY–I

Paper BP-202-T

(Thursday, 25-4-2019)   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 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*)   What is Saytzeff Rule ?

    (*b*)   Draw the structure of :

        (*i*)   3-Methylbutanamide

        (*ii*)   5-Bromo-4-methyl-hex-3-en-2-one.

    (*c*)   What is Walden inversion ?

    (*d*)   Draw the structure and give the uses of the following :

        (*i*)   Chlorobutanol

        (*ii*)   Amphetamine.

    (*e*)   Arrange the following compounds in order of increasing acidity :

        (*i*)   2-Fluoropropanoic acid

        (*ii*)   2-Chloropropanoic acid

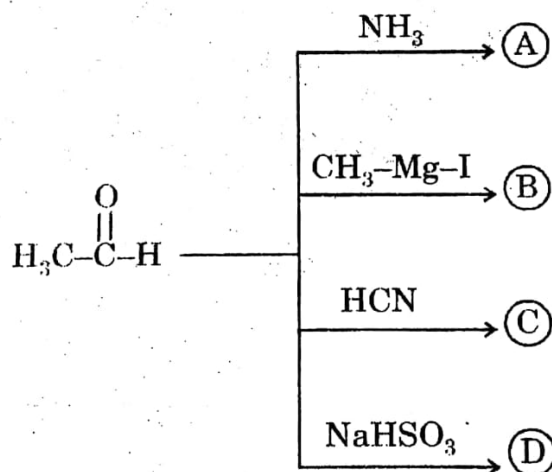   (*iii*)   Propanoic acid

        (*iv*)   2-Bromopropanoic acid.

P.T.O.

(f) How will you prepare 2-Butene from 1-Butene ? Write reaction.

(g) Define isomerism. Draw the structure of various isomers of molecular formula C_3H_8O.

(h) Explain why ketones are less reactive than aldehydes.

(i) What is electromeric effect ?

(j) Discuss the basicity of amines.

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

(a) What is electrophilic addition to olefins ? Discuss addition reactions to olefins like hydrogenation, halogenation and ozonolysis. Discuss about peroxide effect.

(b) What are alkyl halides ? How are they classified ? Explain in detail S_N1 and S_N2 reaction mechanism with stereochemistry.

(c) (i) Complete the reaction :

$$H_3C-\overset{\overset{O}{\|}}{C}-H \longrightarrow \begin{cases} \xrightarrow{NH_3} \text{(A)} \\ \xrightarrow{CH_3-Mg-I} \text{(B)} \\ \xrightarrow{HCN} \text{(C)} \\ \xrightarrow{NaHSO_3} \text{(D)} \end{cases}$$
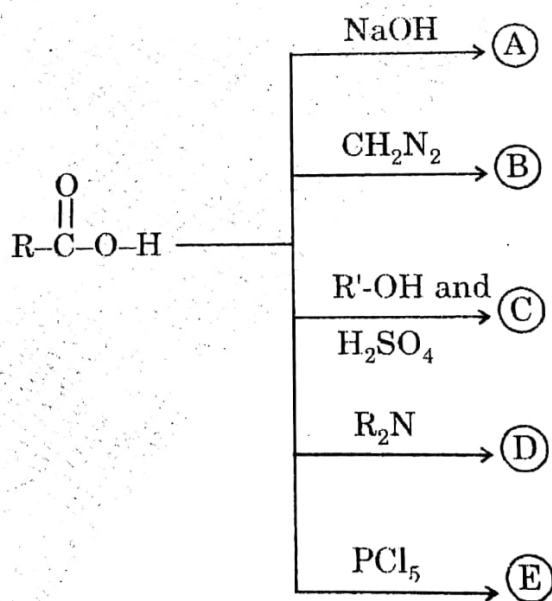
Write structure and name of A, B, C and D.

(ii) Discuss about Perkin condensation and crossed Cannizzaro reaction.

3. Solve any *seven* of the following :

   (a) How will you prepare primary, secondary and tertiary alcohol and amines from Grignard's reagent ?

   (b) Define conjugated dienes. What is Diels-Alder reaction ? Discuss 1, 2 and 1, 4-addition reaction of 1, 3-Butadiene.

   (c) What is organic chemistry ? Give its importance. Classify organic compounds with a suitable example.

   (d) What is hybridization ? Explain hybridization of alkanes in detail. Comment on "Halogenation of alkanes".

   (e) Complete the following reaction and identify A, B, C, D and E with structure :

$$
\underset{\displaystyle R-C-O-H}{\overset{\displaystyle O}{||}}
\begin{cases}
\xrightarrow{\text{NaOH}} & \text{(A)} \\[1mm]
\xrightarrow{\text{CH}_2\text{N}_2} & \text{(B)} \\[1mm]
\xrightarrow[\text{H}_2\text{SO}_4]{\text{R'-OH and}} & \text{(C)} \\[1mm]
\xrightarrow{\text{R}_2\text{N}} & \text{(D)} \\[1mm]
\xrightarrow{\text{PCl}_5} & \text{(E)}
\end{cases}
$$

P.T.O.

(f) Draw the structure and give the uses of :

   (i)   Ethanolamine

   (ii)   Vanilin

   (iii) Acetyl salicylic acid

   (iv)   Dichloromethane

   (v)   Methyl salicylate.

(g) (i) Explain inductive effect in detail.

   (ii) Enlist the various test to distinguish between 1°, 2° and 3° alcohols. Explain any *two* tests.

(h) Write any *four* chemical reactions of amines with mechanism of any *one*.

(i) (1) Write the IUPAC name of :

   (a)
   $$H_2C = CH—CH—COOH$$
   $$\underset{CH_3}{|}$$

   (b)
   $$\overset{CH_3}{\underset{C_2H_5}{H_3C—\overset{|}{\underset{|}{C}}—CH_2—CHO}}$$

   (2) How will you achieve the following synthetic conversions :

   (a) Propene to 2-Methyl propanoic acid

   (b) Acetaldehyde to 1-Butanol

   (c) Ethanol to Acetylene.

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CO—11—2019

FACULTY OF SCIENCE AND TECHNOLOGY

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

MARCH/APRIL, 2019

BIOCHEMISTRY

(BP203T)

(Saturday, 27-4-2019)

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

Maximum Marks—75

Time— Three Hours

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

(ii) Figures to the right indicate full marks.

(iii) Answer to the point only.

20

1. Solve all the questions :

   (a) What are biomolecules ? Enlist any two.

   (b) Differentiate between purines and pyrimidines.

   (c) What are fatty acids ? Write its function.

   (d) What is fatty liver ?

   (e) Define free energy and redox potential.

   (f) Write the structure and biochemical functions of cyclic AMP.

   (g) What are essential and non-essential amino acids.

   (h) Write the properties of enzymes.

   (i) What are the functions of RNA ?

   (j) Give the biological role of carbohydrates.

2. Answer any two of the following :   20

   (a) Explain the structures of DNA and write biological importance of DNA.

   (b) Explain the process of β-oxidation of fatty acids.

   (c) Name the various pathways of glucose metabolism. Give in detail about TCA cycle.

P.T.O.

3. Solve any *seven* of the following :

  (a) Write short notes on :

     (i) Transamination

     (ii) Deamination

     (iii) Decarboxylation with example.

  (b) Write a short note on energy rich compounds.

  (c) Describe hormonal regulation of blood glucose level.

  (d) Discuss about inhibitors of ETC [Electron Transport Chain] and oxidative phosphorylation.

  (e) Enlist factors affecting on enzyme activity. Explain any *two*.

  (f) Explain glycogen metabolism pathway.

  (g) Write short notes on :

     (i) Atherosclerosis

     (ii) Hypercholesterolemia

  (h) Explain process of protein synthesis.

  (i) Write therapeutic and diagnostic applications of enzyme.

CO—15—2019
FACULTY OF SCIENCE AND TECHNOLOGY
B.Pharm. (First Year) (Second Semester) EXAMINATION
MARCH/APRIL, 2019
PATHOPHYSIOLOGY
(BP-204-T)

(Tuesday, 30-4-2019)   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 neat labelled diagram wherever necessary.

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

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

   (*a*)   Define adaptation and homeostasis.

   (*b*)   What is calcification ?

   (*c*)   What are Metaplasia and dysplasia.

   (*d*)   Mention cardinal sign of inflammation.

   (*e*)   Enlist the various inflammatory mediators.

   (*f*)   What is Thalassemia.

   (*g*)   What are hypo and hypothyroidism.

   (*h*)   Write clinical manifestation of UTI.

   (*i*)   What is Gout ?

   (*j*)   Give causes of syphillis and Gonorrhoea.

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

   (*a*)   Describe in detail etiopathogenesis, clinical manifestation and treatment of AIDS.

   (*b*)   Explain in detail etiopathogenesis, clinical manifestation and treatment of viral hepatitis and IBD.

   (*c*)   Discuss in detail pathogenesis of cell injury.

P.T.O.

7×5=35

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

   (*a*) Explain basic mechanism involved in inflammation.

   (*b*) Write etiopathogenesis of diabetes mellitus.

   (*c*) Explain pathophysiology and treatment of Atherosclerosis.

   (*d*) What is Asthma ? Write its pathogenesis and clinical manifestation.

   (*e*) Write etiopathogenesis of epilepsy.

   (*f*) Write etiology, pathogenesis, clinical manifestation and treatment of Rheumatoid Arthritis.

   (*g*) Write etiology and pathogensis of cancer.

   (*h*) Explain pathophysiology and treatment of Tuberculosis.

   (*i*) Explain pathogenesis and treatment of Parkinson's disease.