BPH-2
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CO—2—2019

FACULTY OF PHARMACEUTICAL SCIENCES

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

MARCH/APRIL, 2019

PHARMACEUTICAL ORGANIC CHEMISTRY—II

(Monday, 22-4-2019) CBP-301-T **Time : 2.00 p.m. to 5.00 p.m.**

Time—3 *Hours* *Maximum Marks*—75

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

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

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

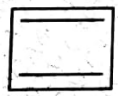
(*a*) State true/false :

(*i*) Benzene is an heterocyclic compound

(*ii*) Number of pi bond in benzene are—3.

(*b*) Draw structure of DDT.

(*c*) Identify the following structures as aromatic/non-aromatic/ anti-aromatic :

(*i*) 

(*ii*) 

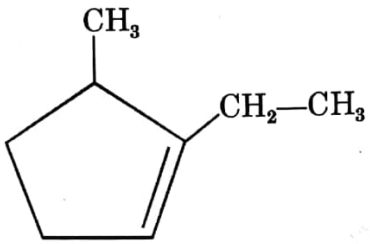
(*d*) Write any *one* application of diazonium salt.

(*e*) Write IUPAC name of the following cycloalkanes :

(*i*) $CH_3—CH_2—CH_2—CH(\text{cyclobutyl})—CH_2—CH_3$

P.T.O.

(*ii*)



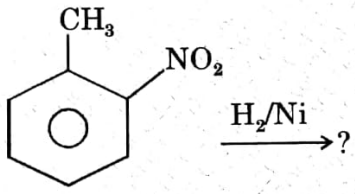
(*f*) Draw the following structures :

(*i*) P-anisidine

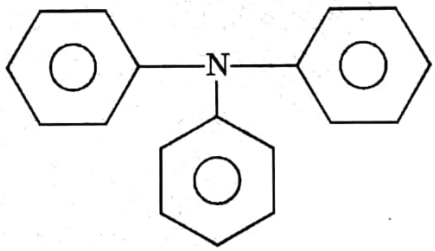
(*ii*) Quinol

(*g*) Draw resonance structures of anthracene.

(*h*) Complete the following reaction :



(*i*) Name the type of the following amine (aromatic) :



(*j*) Define iodine value.

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

(*a*) What is the effect of substituents on reactivity and orientation of monosubstituted benzene.

(*b*) Write any *four* preparation methods of phenol.

(*c*) Write any *five* chemical reactions of naphthalene.

7×5=35

3. Answer any *seven* of the following :

(*a*) Write saponification and hydrolysis reactions of oils and fats.

(*b*) Write any *one* reduction reaction of :

(*i*) Anthracene

(*ii*) Phenanthraquinone.

(*c*) Write a note on Baeyer's strain theory.

(*d*) Draw structure of triphenylmethane. Write any *two* preparation methods of diphenylmethane.

(*e*) Explain any *one* reaction benzene with mechanism.

(*f*) Write uses of :

(*i*) Resorcinol

(*ii*) Phenanthrene.

(*g*) Write effect of substituents on basicity of amines.

(*h*) Write *three* preparation methods and *two* chemical reactions of aromatic acids.

(*i*) Write a note on Hucke Rule.

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CO—06—2019

FACULTY OF SCIENCE AND TECHNOLOGY

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

MARCH/APRIL, 2019

PHYSICAL PHARMACEUTICS–I

[BP-302T]

(Wednesday, 24-4-2019) **Time : 2.00 p.m. to 5.00 p.m.**

Time—3 *Hours* *Maximum Marks*—75

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

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

1. Solve all the following : 10×2=20

(*a*) What is latent heat ?

(*b*) Give the applications of partition coefficient.

(*c*) Define the term complexation.

(*d*) Distinguish between ideal and non-ideal solutions.

(*e*) Define interfacial tension.

(*f*) Give applications of buffers.

(*g*) What do you mean iso-osmatic solution ?

(*h*) Define the term sublimation critical point.

(*i*) Enlist *two* names of surfactants.

(*j*) What is protein binding.

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

(*a*) Explain optical rotation and give its limitations and applications.

(*b*) Explain in detail adsorption at liquid interface and detergency.

(*c*) Define Aerosol. Draw neat labelled diagram of aerosol and give its applications.

P.T.O.

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

(*a*) Describe polymorphism in detail.

(*b*) Define refractive index. Give its applications.

(*c*) Derive Henderson-Hasselbalch equation.

(*d*) Define isotonicity. Explain any *one* method to determine isotonicity.

(*e*) Define protein binding. Give its applications.

(*f*) Explain HLB system with neat labelled diagram.

(*g*) Explain solubility of gas in liquid.

(*h*) Define pH. Describe in detail electrometric method.

(*i*) Explain diffusion principles in biological system.

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CO—10—2019

FACULTY OF PHARMACEUTICAL SCIENCES

B.Pharmacy (Third Semester) EXAMINATION

MARCH/APRIL, 2019

PHARMACEUTICAL MICROBIOLOGY

(Friday, 26-4-2019) CBP-303-T **Time : 2.00 p.m. to 5.00 p.m.**

Time—3 *Hours* *Maximum Marks*—75

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

(*ii*) Draw neat and well labelled diagrams wherever necessary.

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

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

(*a*) Draw the ultrastructure of Bacteria.

(*b*) Difference between Prokaryotic and Eukaryotic.

(*c*) Define stain and give its types.

(*d*) Give application of sterilization.

(*e*) Give principle of simple staining.

(*f*) Define :

(*i*) Antiseptic

(*ii*) Preservation.

(*g*) Define D-value and Z-value.

(*h*) What is biochemical test ?

(*i*) Draw the flow diagram of aseptic area.

(*j*) Write ideal properties of disinfectant.

P.T.O.

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2. Long answers (Solve any *two* of the following) : 2×10=20

(*a*) Define Microbiology. Write history, branches and scope of Microbiology.

(*b*) Describe in detail method of sterilization with example.

(*c*) Explain isolation and preservation method of pure culture media.

3. Short answers (Solve any *seven* of the following) : 7×5=35

(*a*) Give the principle of Hot air oven and Autoclave.

(*b*) Explain microbial assay of antibiotic.

(*c*) Explain reproduction of virus.

(*d*) Explain growth curve of Bacteria.

(*e*) Explain factors affecting the microbial spoilage of pharmaceutical product.

(*f*) Write about nutritional requirement of growth of Bacteria.

(*g*) Give the application of cell culture in pharmaceutical industry and research.

(*h*) Explain sterility testing of sterile product.

(*i*) Write a short note on morphology of virus.

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CO—14—2019

FACULTY OF SCIENCE AND TECHNOLOGY

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

MARCH/APRIL, 2019

PHARMACEUTICAL ENGINEERING

(BP 304T)

(Monday, 29-4-2019) **Time : 2.00 p.m. to 5.00 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 well-labelled diagram wherever necessary.

1. Answer *all* questions : 10×2=20

(*a*) Give equation of Raynold's Number.

(*b*) Enlist mechanisms of size reduction.

(*c*) Give types of Sieves.

(*d*) Define Conduction.

(*e*) Write applications of evaporation.

(*f*) Define Distillation.

(*g*) What is equilibrium moisture content ?

(*h*) What is convective mixing ?

(*i*) Give Darcy's equation.

(*j*) Define Centrifugation.

P.T.O.

2. Solve any *two* : 2×10=20

(*a*) Discuss in brief about plate and frame filter press.

(*b*) Explain in detail about factors affecting evaporation.

(*c*) Write principle, construction, working and uses of tray dryer with suitable diagram.

3. Solve any *seven* : 7×5=35

(*a*) Explain physical factors affecting material selection.

(*b*) Explain principle and construction of perforated basket centrifuge with its diagram.

(*c*) Explain in brief about orifice meter.

(*d*) Give construction and working of tubular heater.

(*e*) Write classification of filtration equipments.

(*f*) Define volatility, ideal solution, real solution, distillate and fractional distillation.

(*g*) How to prevent corrosion ?

(*h*) Write in detail about horizontal tube evaporator.

(*i*) Give information about cast iron and carbon steel.

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CO—04—2019

FACULTY OF SCIENCE AND TECHNOLOGY

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

MARCH/APRIL, 2019

PHARMACEUTICAL ORGANIC CHEMISTRY—III

(BP401T)

(Tuesday, 23-4-2019) **Time : 2.00 p.m. to 4.00 p.m.**

Time—3 *Hours* *Maximum Marks*—75

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

(*ii*) Draw the structure wherever necessary.

(*iii*) Answer to the point only.

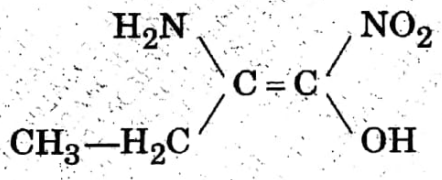
1. Answer the following : 20

(*a*) Write the difference between Enantiomerism and Distereoisomerism.

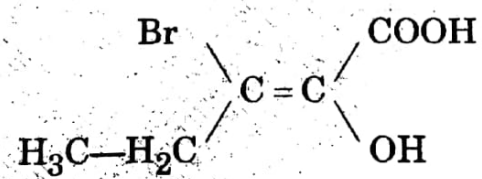
(*b*) Discuss the Paal-Knorr synthesis for synthesis of furan.

(*c*) Assign E and Z isomerism along with implementation of sequence rule :

(*i*)



(*ii*)



(*d*) Write the medicinal uses of purine.

(*e*) Give the principle of Dakin reaction.

(*f*) Write the anti-conformation of *n*-butane by Newmann and Saw-horse projection method.

(*g*) Give the layout of isomerism.

P.T.O.

(*h*) Write any *two* nucleophilic substitution reaction of pyrimidine.

(*i*) Write the structure and systemic name of :

(*i*) Oxazole

(*ii*) Acridine.

(*j*) Define meso compound with suitable example. 20

2. Answer any *two* of the following :

(*a*) Write the different conformation of Ethane and *n*-butane with energy profile diagram along with the stability order.

(*b*) (*i*) Write the following reactions :

(1) Skrup synthesis for quinoline

(2) Fischer Indole synthesis for Indole.

(*ii*) Write any *five* chemical reactions of Quinoline.

(*c*) Discuss on Wolff-Kishner and Schmidt rearrangement. 35

3. Answer any *seven* of the following :

(*a*) Explain about partial and absolute asymmetric synthesis.

(*b*) What is heterocyclic compound ? Classify it with suitable example.

(*c*) Write any *three* electrophilic substitution reaction of pyrrole and thiophene.

(*d*) Write the note on Chan-Ingold-Prelong system.

(*e*) Describe the oppenauer oxidation.

(*f*) Define Racemic mixture. Discuss the different methods for resolution of racemic mixture.

(*g*) Discuss the Birch reduction reaction.

(*h*) Give the medicinal uses of Imidazole. Write any *three* chemical reactions of Imidazole.

(*i*) Identify the notation of the following :

(*i*) *d* and *t* notation

(*ii*) R and S notation

(*iii*) cis and trans notation

(*iv*) D and L notation

(*v*) E and I notation.

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CO—8—2019

FACULTY OF PHARMACEUTICAL SCIENCES AND TECHNOLOGY

B.Pharmacy (Fourth Semester) EXAMINATION

MARCH/APRIL, 2019

MEDICINAL CHEMISTRY–I

Paper BP-402-T

(Thursday, 25-4-2019) **Time : 2.00 p.m. to 5.00 p.m.**

Time—Three Hours *Maximum Marks—75*

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

(*ii*) Draw structures wherever necessary.

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

1. Answer all the questions : 10×2=20

(*a*) Define drug metabolism. Mention the types of biotransformation pathway.

(*b*) Give the reaction product of malonic ester and urea.

(*c*) What is 2-PAM ?

(*d*) Draw the structure and give the IUPAC name of carbamazepine.

(*e*) Outline the synthesis of phenytoin.

(*f*) State true *or* false of the following :

(*i*) Chlorpromazine blocks the dopamine-2 receptor.

(*ii*) Chemically heroin is diacetyl morphine and codeine is methyl morphine.

(*g*) What are Hydantoins ? Give the chemistry and SAR of Hydantoins.

P.T.O.

(*h*) What is salol principle ?

(*i*) Draw the structure and give therapeutic uses of diazepam.

(*j*) Define general anaesthetics. Classify it and draw at least *one* structure from each class.

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

(*a*) Explain elaborately the medicinal chemistry aspects of anticonvulsant drugs with emphasis to chemical classification, mechanism of action, structure of any *one* drug from each class and outline the synthesis of carbamazepine.

(*b*) What are narcotic analgesics ? Give a detailed account on chemistry and SAR of morphine.

(*c*) Illustrate phase II reaction of drug metabolism with suitable example. Discuss the factors affecting drug metabolism.

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

(*a*) Define and classify bioisosterism and write its importance in drug development.

(*b*) Give the synthesis of the following drugs :

(*i*) Ibuprofen

(*ii*) Ketamine Hydrochloride.

(*c*) What are sedative and hypnotics ? Give the SAR of Benzodiazepines.

(*d*) Give the biosynthesis and metabolism of acetylcholine.

(*e*) Define antipsychotic agents. Give the SAR of phenothiazine class.

(*f*) What is NSAIDS ? Classify it with at least *one* chemical structure from each class.

(*g*) Draw the structure of the following drugs :

(*i*) Dopamine

(*ii*) Salbutamol

(*iii*) Propranolol

(*iv*) Oxazepam

(*v*) Mefenamic acid.

(*h*) Outline the synthetic route of the following drugs :

(*i*) Chlorpromazine HCl

(*ii*) Neostigmine.

(*i*) Why are barbiturates acidic in nature ? Explain the SAR of barbiturates.

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CO—12—2019

FACULTY OF SCIENCE AND TECHNOLOGY

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

MARCH/APRIL, 2019

PHYSICAL PHARACEUTICS-II

Paper (BP403T)

(Saturday, 27-4-2019) **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.

(*iii*) Answer to the point only.

(*iv*) Illustrate your answer with neat sketches wherever necessary.

1. *All* questions are compulsory : 10×2=20

(*a*) Distinguish between molecular dispersion and colloidal dispersion.

(*b*) Define the term coefficient of viscosity. Give its unit.

(*c*) Give the characteristics of ideal suspension.

(*d*) Classify pharmaceutical emulsions.

(*e*) Define the following terms :

(*i*) Porosity

(*ii*) Angle of Repose.

(*f*) State Arrhenius equation.

(*g*) Give the classification of colloids with suitable example.

(*h*) What is Newtonian fluids ? Mention *two* examples.

(*i*) What is creaming in emulsion ?

(*j*) Write Kozeny-Carman equation to estimate surface area.

P.T.O.

2. Solve any *two* of the followings : 20

(*a*) Describe in detail, the construction and working of falling sphere viscometer.

(*b*) Explain factors influencing stability of emulsion.

(*c*) Discuss the methodology of accelerated stability studies. Give its limitations.

3. Solve any *seven* of the following : 35

(*a*) How are the drugs stabilized against oxidation ? Give suitable example.

(*b*) Describe various types of densities.

(*c*) Explain factor influencing stability of suspensions.

(*d*) Describe various identification test of an emulsions.

(*e*) Explain dilatant flow of fluids with suitable example.

(*f*) Describe various factors influencing viscosity.

(*g*) Explain the working principle of Coulter-Counter apparatus with diagram.

(*h*) Explain kinetic properties of colloidal dispersions.

(*i*) What is CMC ? Write a note on micellar solubilization.

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CO—16—2019

FACULTY OF SCIENCE AND TECHNOLOGY

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

MARCH/APRIL, 2019

PHARMACOLOGY—I

(Tuesday, 30-4-2019) (CBP-4047) **Time : 2.00 p.m. to 5.00 p.m.**

Time—3 *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 questions : 10×2=20

(*a*) Define the terms :

(*i*) Pharmacokinetics

(*ii*) Pharmacodynamics.

(*b*) Write advantages and disadvantages of parenteral route of drug administration.

(*c*) Define LD_{50} and ED_{50}.

(*d*) Write examples of ligand gated ion channel receptors.

(*e*) Define local anaesthetics with examples.

(*f*) Write therapeutic uses of propanalol.

(*g*) Write therapeutic uses of carbamazepine.

(*h*) Enlist inhibitory neurotransmitters.

(*i*) Define drug tolerance and drug dependence.

(*j*) Enlist drugs used to Alzheimes's disease.

P.T.O.

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

(*a*) Define drug absorption and explain its various mechanisms and write on factors affecting drug absorption.

(*b*) What are parasympathomimetic agents ? Classify them with examples and explain the pharmacology of acetylcholine.

(*c*) Define and classify anti-epileptic agents and explain the pharmacology of phenytoin.

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

(*a*) What is drug metabolism ? Explain enzyme-induction and enzyme inhibition in drug metabolism.

(*b*) Explain various phases of clinical trials.

(*c*) What is drug interactions ? Write mechanism of drug interactions.

(*d*) Explain the pharmacology of Atsopine.

(*e*) Explain the neurohumoral transmission in ANS.

(*f*) Discuss on various phases of general anesthesia.

(*g*) Explain the pharmacology of alcohol.

(*h*) Define opioid analgesics and write on pharmacology of morphine.

(*i*) Write a note on CNS stimulants.

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CO—17—2019

FACULTY OF PHARMACEUTICAL SCIENCES

B. Pharmacy (Fourth Semester) EXAMINATION

APRIL/MAY, 2019

PHAMACOGNOSY AND PHYTOCHEMISTRY-I

(Thursday, 2-5-2019) (BP-405T) **Time : 2.00 p.m. to 4.00 p.m.**

Time— Two Hours *Maximum Marks*—50

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

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

(*iii*) Write the points only.

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

(*a*) Define crude drug. Give any *two* examples.

(*b*) Write any *two* plant source of crude drugs with examples.

(*c*) Enlist different types of media for plants tissue culture.

(*d*) Define Adulteration and Substitution.

(*e*) Give advantages and disadvantages of sexual method of propagation.

(*f*) Define Polyploidy and Mutation.

(*g*) Define Evaluation and tissue culture.

(*h*) Write any *two* identification tests for Alkaloids.

(*i*) Define Glycosides and Tannins.

(*j*) Define Stomatal number and Stomatal index.

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

(*a*) Define Pharmacognosy. Explain history and scope of Pharmacognosy.

(*b*) Explain in detail physical evaluation of crude drugs with examples.

P.T.O.

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(c) Discuss historical development of plant tissue culture. Write applications of plants tissue culture in Pharmacognosy.

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

(a) Differentiate between organized and unorganized crude drug with examples.

(b) What is cultivation? Discuss factors affecting cultivation of crude drug.

(c) Write a short note on Ayurveda and Sidha system of medicine.

(d) Write the biological source and uses of Cotton and Jute.

(e) Write biological source and uses of Castor oil and Wool fat.

(f) Write any two examples of Novel medicinal agents from marine sources and give classification of marine drug.

(g) Give the properties of Flavonoids and Resins.

(h) Write a note on natural allergens.

(i) Write a short note on edible vaccines.