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Total Number of Pages : 01

B.Pharm
BP301T

3rd Semester Regular Examination 2018-19
PHARMACEUTICAL ORGANIC CHEMISTRY II
BRANCH : B.PHARMA

Time : 3 Hours

Max Marks : 75

Q.CODE : E861

Answer Question No.1 (Part-A) and 02 (Part-B) which are compulsory and any TWO from Part-C.

The figures in the right hand margin indicate marks.

Part- A

Q1 Objective Answer Type Questions (Answer All)

(2 x 10)

- Write the structure & use of BHC?
- What is Huckel's rule of aromaticity?
- What is use of benzoic acid & Sodium Benzoate?
- What happens when sodium benzoate is heated with sodalime?
- Explain Rancidity of oils.
- Explain why the amino group (NH₂) acts as an ortho para director?
- What are Drying oils?
- Write the structure & use of Saccharin?
- What is Gatterman reaction?
- Write the structure & use of DDT?

Part- B

Q2 Focused-Short Answer Type Questions- (Answer Any Seven)

(5 x 7)

- Give reason why ammonia is stronger base than aniline?
- Write a note on: Acidity of Phenol.
- Discuss chlorination of benzene in presence of FeCl₃.
- Explain Reimer-Tiemann Reaction?
- Discuss the carbylamines and Hofmann rearrangement reaction.
- Mention the general method of preparation of cycloalkanes.
- Write a note on Saponification value and Iodine value?
- Explain why benzoic acid is stronger acid than acetic acid?
- Write five reaction of benzoic acid?

Part-C

Q3 Long Answer Type Questions (Answer Any Two)

Explain Friedel-Craft's alkylation benzene. Give account on nitration of benzene.

(10)

Q4 Discuss Bayer's strain theory with suitable examples.

(10)

Q5 Illustrate the important steps in Haworth's synthesis of naphthalene. Describe its important chemical reactions.

(10)

Q6 Write four method of preparation and four chemical reaction of phenol?

(10)

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B.Pharm
BP302T

3rd Semester Regular Examination 2018-19

PHYSICAL PHARMACEUTICS-I

BRANCH : B.Pharma

Time : 3 Hours

Max Marks : 75

Q.CODE : E917

Answer Question No.1 which is compulsory, any Seven from part-II and any two from part-III.

The figures in the right hand margin indicate marks.

PART-I

Q1 Answer the following questions : (2 x 10)

- Differentiate between amorphous and crystalline solid.
- Define the term sublimation and boiling point.
- Define Kraft point.
- Define eutectic point. Give one example of eutectic mixture.
- State polymorphism and its application.
- What is HLB? Write any two importance of HLB.
- Define buffer capacity.
- Write down the Henderson-Hasselbalch equation for weak acid and weak base.
- State dipole moment and its significance.
- What is chelating agent? Write two examples.

PART-II

Q2 Focused-short Answer Type Questions-(Answer any Seven out of Twelve) (5 x 7)

- State and explain Raoult's law. Write down the deviations of the law.
- Write a short note on 'glassy state'.
- Write down the principle and applications of pharmaceutical aerosol.
- Define refractive index. Explain any one procedure to determine it.
- Write briefly physical properties of drug.
- Define CST. Write down its applications.
- Write briefly about biological buffers and its application in pharmacy.
- State and explain paratonic solution.
- Explain Spreading co-efficient and its significance.
- What is complexation? Classify only complexation.
- What is BET equation? Write different types of isotherms.
- State and explain Distribution law.

PART-III

Q3 Long Answer Type Questions(Answer any Two out of Four) (2+3+5)
What is interfacial phenomenon? Write different methods to determine surface tension and detail explain any one method.

Q4 Describe the solubility of partially miscible liquids in binary systems with suitable examples. (10)

Q5 What is solubility? Write briefly about factors affecting solubility. (2+8)

Q6 Explain the kinetic of drug-protein binding. Write down its significance. (8+2)

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B.Pharm

BP303T

3rd Semester Regular Examination 2018-19

PHARMACEUTICAL MICROBIOLOGY

BRANCH : B.Pharma

Time : 3 Hours

Max Marks : 75

Q.CODE : E960

Answer Question No.1 (Part-A) and 02 (Part-B) which are compulsory and any TWO from Part-C.

The figures in the right hand margin indicate marks.

Part- A

Q1 Objective Answer Type Questions (Answer All)

(2 x 10)

- Define Prokaryotes and Eukaryotes
- Define bacteria and fungus
- Define virus
- Define sterilization
- What is gram staining
- Give classification of bacteria
- Discuss media for culture
- What do you mean by zone of inhibition
- How would you prevent contamination
- What is aseptic room

Part- B

Q2 Focused-Short Answer Type Questions- (Answer Any Seven)

(5 x 7)

- How would you isolate pure culture
- Explain Sterility Testing
- What do you mean by microbial spoilage of products
- Discuss bacteriostatic and bactericidal agent
- Describe growth of bacteria
- What do you mean by clean room. Write use of HEPA filter
- How would you evaluate Disinfectant
- What are anaerobic and aerobic bacteria
- Write names of nine bacteria and 3 fungus

Part-C

Long Answer Type Questions (Answer Any Two)

Q3 Describe methods for sterilization of products

(10)

Q4 Describe method for sterility testing

(10)

Q5 Describe preservative efficacy test

(10)

Q6 Describe antibiotic assay

(10)

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B.Pharm
BP304T

3rd Semester Regular Examination 2018-19

PHARMACEUTICAL ENGINEERING

BRANCH : B.Pharma

Time : 3 Hours

Max Marks : 75

Q CODE : E1004

Answer Question No.1 (Part-A) and 02 (Part-B) which are compulsory and any two from Part-C.

The figures in the right hand margin indicate marks.

Q1 Objective Answer Type Questions (Answer All) (2 × 10)

- What are the filter aids? How is it applied for filtration operation?
- State and explain Fourier's law of heat transmission with equation.
- Define unbound moisture content, critical moisture content, and bound moisture content.
- What are the advantages and disadvantages of perforated basket centrifuge?
- What are the laws governing energy and power requirements of mills?
- Why sieve analysis is performed? and what do you mean by the expression(-40+45) sieve size? What is nominal size of aperture?
- Explain vortex formation scientifically in an agitated liquid? What are the means to prevent it?
- Write on advantages of twin shell blender.
- Distinguish between
 - evaporation and distillation,
 - evaporation and drying.
- Write on the principle and the application of steam distillation.

Q2 Focused-Short Answer Type Questions- (Answer Any SEVEN) (5 × 7)

- Discuss on adiabatic and non adiabatic dryers.
- Derive the expression for total time of drying.
- Derive overall heat transfer coefficients from individual coefficients with necessary figure.
- Derive an expression for heat transfer through a cylindrical wall with necessary figure.
- Explain size separation based on sedimentation theory with suitable figure.
- What is the principle of ball mill ?and write on the mechanism of grinding in a ball mill.
- Describe the propeller mixer along with its characteristics and flow pattern and various arrangements for mounting of stirrer in the tank.
- Explain the effects of factors that influence evaporation.
- Elaborate the concept of multiple effect evaporator, and what are its advantages?

Q3 Long Answer Type Questions (Answer Any TWO) (10)
Describe the McCabe Thiel method for calculation of number of theoretical plates. Discuss on Flash and molecular distillation.

Q4 (10)
Write in detail on principle, construction, working, advantages and disadvantages of spray dryer.

Q5 (10)
Write on theory of corrosion, types of corrosion and their prevention.

Q6 (10)
Derive Bernoulli's equation and what are the applications of Bernoulli's theory.

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B.Pharm
15PH301

3rd Semester Back Examination 2018-19

PHYSICAL PHARMACEUTICS – I

BRANCH : B.Pharma

Time : 3 Hours

Max Marks : 100

Q.CODE : E913

Answer Question No.1 (Part-1) which is compulsory, any EIGHT from Part-II and any TWO from Part-III.

The figures in the right hand margin indicate marks.

Part- I

Q1 Short Answer Type Questions (Answer All-10)

(2 x 10)

- Define Solution
- Define Solubility
- Define pH
- Define Isotonic Solution
- Define Critical Solution Temperature
- What do you mean by Stability
- What do you mean by polymorphism
- What do you mean by TPD
- Define Isotonic solution
- How would you express solubility

Part- II

Q2 Focused-Short Answer Type Questions- (Answer Any Eight out of Twelve)

(6 x 8)

- Discuss Buffers and its role in formulation
- How would you prepare buffers?
- How would you calculate Expiry date of Products
- Discuss Chemical Kinetics
- Discuss Eutectic mixture and its importance in formulation
- Describe Phase Rule.
- What do you mean by Critical temperature and triple point
- Discuss critical solution temperature and Lower Consolute temperature
- Describe a method of determine solubility
- Discuss two component system taking phenol water system.
- What is Complexation, state its different types.
- What do you mean by Buffer capacity and how would you determine it.

Part-III

Long Answer Type Questions (Answer Any Two out of Four)

Q3 Describe methods for preparation of isotonic solution.

(16)

Q4 Describe method for conducting stability test of formulated product

(16)

Q5 Describe Van't Hoff Equation and Clausius Clapeyron eq.

(16)

Q6 Discuss different state of matters also liquid crystal.

(16)

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B.Pharm
15PH302

3rd Semester Back Examination 2018-19

PHARM. ENGINEERING - I

BRANCH : B.Pharma

Time : 3 Hours

Max Marks : 100

Q.CODE : E957

Answer Question No.1 (Part-1) which is compulsory, any eight from Part-II and any two from Part-III.

The figures in the right hand margin indicate marks.

Part- I

Q1 Short Answer Type Questions (Answer All-10)

(2 x 10)

- Define critical moisture content and free moisture content.
- State and explain Stefan Boltzmann's law of heat radiation.
- Justify the statement 'Ball mill is not useful for size reduction of fibrous material'.
- What are standard sieves?
- What is 'Mixing index'?
- What do you mean by vortex? How it can be prevented?
- Distinguish surface filtration and depth filtration.
- What do you mean by economy of an evaporator?
- Classify dryers giving suitable examples.
- Distinguish between evaporation and distillation.

Part- II

Q2 Focused-Short Answer Type Questions- (Answer Any Eight out of Twelve)

(6 x 8)

- Draw a neat and labeled diagram of a shell-and-tube heat exchanger and describe its construction.
- Describe the drying rate curve. Explain its application.
- Explain the construction and working of a ball mill.
- Describe the working of a cyclone separator with its usefulness.
- Describe the equipments for solid-solid mixing of pharmaceutical materials.
- With the help of a neat diagram, write about the construction, working and uses of a Silverson mixer-emulsifier.
- What are filter aids? Name the filter aids commonly used in pharmacy practice.
- Explain the different theories of filtration.
- Classify evaporators. Describe construction and working of climbing film evaporator.
- What is steam distillation? What are its special advantages?
- Discuss the principle, construction, working and uses of spray dryer.
- How does sieve analysis help in testing of powder? Explain by using principle and working of sieve shaker machine.

Part-III

Long Answer Type Questions (Answer Any Two out of Four)

Q3 Define Fourier's Law. Write about derivation and applications of Fourier's Law.

(16)

Q4 What are constant boiling mixtures? Describe briefly about azeotropic distillation.

(16)

Q5 State and explain the theories related to size reduction.

(16)

Q6 Write the principle, construction, working, uses, advantages and disadvantages of plate and frame filter press.

(16)

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B.Pharm
15PH303

3rd Semester Back Examination 2018-19

ORGANIC CHEMISTRY-II

BRANCH : B.PHARMA

Time : 3 Hours

Max Marks : 100

Q.CODE : E857

Answer Question No.1 (Part-1) which is compulsory, any eight from Part-II and any two from Part-III.

The figures in the right hand margin indicate marks.

Part- I

Q1 Short Answer Type Questions (Answer All-10)

(2 x 10)

- What is huckles' rule.
- What is metamerism.
- What is keto-enol tautomerism.
- What is D and L system.
- What is specific rotation.
- Give the name and structures of any two polynuclear aromatic hydrocarbons.
- Give nomenclature and structure of isoquinoline.
- Give two synthetic application of NBS.
- In between cis and trans isomerism which is more stable and why.
- Give the one method of preparation of furan.

Part- II

Q2 Focused-Short Answer Type Questions- (Answer Any Eight out of Twelve)

(6 x 8)

- Define and classify isomerism.
- Write short notes on geometrical isomerism.
- Write about stereo specific and stereo selective reaction.
- Write about orientation of aromatic substitution in mono substituted benzene.
- Write synthesis and application of diazomethane.
- Write synthesis and application of lithium aluminium hydride.
- Write a note on racemization.
- Write preparation and important reactions of pyrrole.
- Write reaction and mechanism of electrophilic substitution reaction of benzene.
- Write preparation and chemical reactions of indole.
- Write a notes on optical isomerism.
- What is friedel crafts reaction mention with mechanism?

Part-III

Long Answer Type Questions (Answer Any Two out of Four)

Q3 Write the general methods of preparation and chemical reaction of anthracene. **(16)**

Q4 Write general methods of preparation and physical and chemical properties of phenol. **(16)**

Q5 Write general methods of preparation and physical and chemical properties of benzene. **(16)**

Q6 Give in detail about conformations of ethane and butane. **(16)**

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B.Pharm
15PH304

3rd Semester Back Examination 2018-19

PHARMACOGNOSY-II

BRANCH : B.Pharma

Time : 3 Hours

Max Marks : 100

Q.CODE : E1002

Answer Question No.1 (Part-1) which is compulsory, any EIGHT from Part-II and any TWO from Part-III.

The figures in the right hand margin indicate marks.

Part- I

Q1 Short Answer Type Questions (Answer All-10)

(2 x 10)

- What is the biological source of Gaultheria?
- Write the chemical constituents of Nutmeg.
- Define Pharmaceutical aids.
- Write two uses of Lemon grass oil.
- What are the chemical constituents of Turmeric?
- Write the biological source of Garlic.
- Write the biological source of Caraway.
- Write the chemical constituents of Clove.
- Write the important properties of Volatile oil.
- Write the uses of Green tea.

Part- II

Q2 Focused-Short Answer Type Questions- (Answer Any Eight out of Twelve)

(6 x 8)

- Write about Photosensitizing agent with examples.
- Write the Biological source, Chemical constituents and Uses of Ginkgo Biloba.
- Write the classification of Volatile oil with example.
- Write the Biological source, Chemical constituents and Uses of Dill.
- Write the Source, Chemical constituents and Uses of Wool.
- Classify different types of Fibres with examples.
- Write the application of Plant Biotechnology in Pharmacy and allied fields.
- Write the Source, Chemical constituents and Uses of Bentonite.
- Write notes on Annatto.
- Describe in details about different types of natural allergen with suitable example.
- Write in details on Silk.
- Write the Source, Chemical constituents and Uses of Diatomite.

Part-III

Q3 Long Answer Type Questions (Answer Any Two out of Four)

Define antioxidant and describe the different types of antioxidant in details with suitable examples.

(16)

Q4 Describe in details about general methods of extraction of Volatile oil.

(16)

Q5 Describe the detail and systematic Pharmacognostic study of Cardamom.

(16)

Q6 Enumerate the historical prospects and development of Plant Biotechnology.

(16)

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**B.Pharm
15PH305**

**3rd Semester Back Examination 2018-19
PATHOPHYSIOLOGY OF COMMON DISEASES**

BRANCH : B.Pharma

Time : 3 Hours

Max Marks : 100

Q.CODE : E990

Answer Question No.1 (Part-1) which is compulsory, any EIGHT from Part-II and any TWO from Part-III.

The figures in the right hand margin indicate marks.

Part- I

Q1 Short Answer Type Questions (Answer All-10)

(2 x 10)

- What is hyperplasia? Give an example of it.
- Define autolysis and apoptosis.
- Write the triple response of acute inflammation.
- Define the range of blood pressure in mild hypertension.
- What is pernicious anaemia?
- Write the mode of infection of tuberculosis?
- Define the term 'status asthmaticus'.
- What are the symptoms Congestive Heart Failure?
- Write the causes of peptic ulcer.
- Define mania and its symptoms.

Part- II

Q2 Focused-Short Answer Type Questions- (Answer Any Eight out of Twelve)

- Give a short note on various types of necrosis.
- Describe the etiology and symptoms of depression.
- Write a short note on urinary tract infection.
- Explain on 'prostaglandins as inflammatory mediators'
- Define angina pectoris. Describe various types of angina pectoris.
- Write the mode of transmission, pathogenesis of hepatitis.
- Describe the pathogenesis and diagnosis of Gout.
- Write briefly pathogenesis, symptoms and diagnosis of myocardial infarction.
- Describe about various types of anemia and its symptoms.
- Define epilepsy. Write the pathogenesis and diagnosis of epilepsy.
- Give a short note on pathogenesis of tuberculosis.
- Write the pathogenesis and diagnosis of jaundice.

Part-III

Long Answer Type Questions (Answer Any Two out of Four)

- Q3** Give a detail note of etiology, pathogenesis, sign and symptoms of diabetes mellitus. **(16)**
- Q4** Describe in detail about pathogenesis of reversible ischemic cell injury. **(16)**
- Q5** Describe in detail the etiology, pathogenesis, sign and symptoms of Rheumatoid arthritis. **(16)**
- Q6** Describe the pathogenesis, symptoms and complications of hypertension. **(16)**

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Total Number of Pages : 02

B. Pharm
15PH306

3rd Semester Back Examination 2018-19
ENVIRONMENTAL SCIENCE

BRANCH : B.Pharm

Time: 3 Hours

Max Marks : 100

Q CODE : E1011

Answer Question No.1 (Part-1) which is compulsory, any eight from Part-II and any TWO from Part-III.

The figures in the right hand margin indicate marks.

Part- I

Q1 Short Answer Type Questions (Answer All-10)

(2 x 10)

- Name air pollutants emitted from automobiles.
- What is solid waste management?
- List the role of IT in human health.
- Write any four major water pollutants.
- Define sustainable development.
- What is an activated sludge process?
- What are the causes of acid rain?
- "Recycling is an integral part of solid waste management." – Comment.
- What is ecological pyramid?
- What is climate, weather and rain?

Part- II

Q2 Focused-Short Answer Type Questions- (Answer Any EIGHT out of TWELVE)

(6 x 8)

- Discuss the role of producers, consumers and decomposers in an ecosystem.
- Briefly describe the need of public awareness about the environment. Explain the components of environment and their interactions.
- What is the mechanism of Ozone layer depletion? Write detailed note on the impact of global warming and nuclear accidents on the environment. What is the role of individuals in controlling these environmental issues?
- Explain the aim and objectives of Air (Prevention and control of pollution) Act 1981.
- Write the aims and objectives of the "Orissa Environmental Society"
- What is urbanization? What are the Environmental problems related to urbanization? How urbanization can be controlled?
- Classify various sources of water pollution. Also write various measures to control water pollution.
- Discuss in detail about the renewable and non-renewable sources of energy
- What are hotspots of biodiversity? On what basis a region is designated as hot spot?
- Write in detail about multi-disciplinary nature of environmental science.
- Discuss the problems likely to be faced by a child working as a bonded labourer in a hazardous industry
- What are alternate energy resources? Discuss the energy scenario in India.

Long Answer Type Questions (Answer Any TWO out of FOUR)

- Q3** a) *"Humans have a special environmental responsibility to themselves and to other fellow living beings."* Discuss. (8)
- b) Justify : (8)
*"Ecosystems are not static; they are dynamic systems in time and space."
"The pyramid of energy always takes a true upright shape."*
- Q4** a) Explain the various aim and objectives of the Water (Prevention and Control of Pollution), Act 1974. (8)
- b) Define food chain and food web. Depict a food web with the help of a schematic diagram. (8)
- Q5** a) Write short note on "KENDU LEAF TRADE" undertaken by the Orisha Government. (8)
- b) Write a short note on HIV/AIDS in developing countries. (8)
- Q6** a) Detail major environmental laws in force in India. What are the issues involved in enforcement of environmental legislation public awareness? (8)
- b) Discuss Forest Conservation Act. (8)