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B.Pharm
BP301T

3rd Semester Regular/Back Examination 2019-20
PHARMACEUTICAL ORGANIC CHEMISTRY II

BRANCH : B.Pharma

Max Marks : 75

Time : 3 Hours

Q.CODE : HRB519

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 Only Short Answer Type Questions (Answer All-10) (2 x 10)

- a) Write the structure and use of BHC.
- b) Define acid value. Mention its significance.
- c) Why fats are solid and oils are liquid?
- d) What is Kolbe's reaction?
- e) Why '-NO₂' group acts as meta directing?
- f) What happens when benzoic acid is heated with hydrazoic acid?
- g) Why amines are basic in nature?
- h) Phenol is an acid, but does not react with NaHCO₃. Why?
- i) Write the structure and uses of saccharin.
- j) What is Freund's method?

Part- B

Q2 Only Focused-Short Answer Type Questions- (Answer Any FIVE out of SEVEN) (5 x 7)

- a) Explain Reimer-Tiemann's reaction.
- b) Ammonia is stronger base than aniline. Give reason.
- c) Write note on hydrogenation and hydrolysis of oil.
- d) Briefly explain saponification value and RM value.
- e) Discuss the effects of substituents on acidity of Phenol.
- f) Discuss the various general methods of preparation of aromatic amines.
- g) Write short note on the Kekule structure of benzene.
- h) Mention the general method of preparation of cycloalkanes.
- i) Explain the effect of substituents on electrophilic substitution reaction of benzene.

Part-C

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

- Q3** Discuss the mechanism of nitration reaction and Friedelcraft's acylation reaction of benzene. **(10)**
- Q4** Write the important steps in Haworth's synthesis of naphthalene. Describe its important chemical reactions. **(10)**
- Q5** Explain Bayer's strain theory. Mention its limitations. **(10)**
- Q6** Write any five methods of preparation and five chemical reactions of phenol. **(10)**

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B.Pharm
BP302T

3rd Semester Regular/Back Examination 2019-20

PHYSICAL PHARMACEUTICS-I

BRANCH : B.Pharma

Max Marks: 75

Time : 3 Hours

Q.CODE : HRB592

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 Only Short Answer Type Questions (Answer All-10) (2 x 10)

- What do you mean by thermodynamic solubility of drugs?
- Differentiate between real and ideal solution.
- Define CST and miscibility temperature.
- What is aerosol? List two applications.
- What is dipole moment? How is it related to aqueous solubility?
- State Henderson-Hasselbalch equation for weak acid and weak base.
- How does drug-protein binding affect the absorption and metabolism of drugs?
- What are Chelates? How is it useful in pharmacy?
- What do you mean by buffer capacity?
- Define isotonic and hypotonic solution.

Part-B

Q2 Only Focused-Short Answer Type Questions- (Answer Any SEVEN out of NINE) (5 x 7)

- Write down the factors affecting the solubility of gas in liquid.
- State and explain Raoult's law.
- Discuss eutectic mixtures and its importance in formulations.
- Write a short note on 'glassy state'.
- Explain spreading co-efficient with suitable equation.
- What is HLB? What are its applications in pharmacy?
- Briefly explain about Langmuir isotherm with its derivation.
- Define Sorensen's pH scale. Write down different methods of determination of pH.
- Write down the capillary rise method for determining surface tension.

Part-C

Q3 Only Long Answer Type Questions (Answer Any TWO out of FOUR) (10)
State and explain distribution law. Write down its limitations and applications.

Q4 Discuss in brief about the measurement and applications of refractive index. (10)

Q5 State buffer solutions. Derive buffer equation and write its application in pharmacy. (10)

Q6 Define complexation. Briefly explain about inclusion complex. (10)

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B.Pharm
BP303T

3rd Semester Regular/Back Examination 2019-20
PHARMACEUTICAL MICROBIOLOGY

BRANCH : B.Pharma

Max Marks: 75

Time : 3 Hours

Q.CODE : HRB671

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 Only Short Answer Type Questions (Answer All-10) (2 x 10)

- a) Differentiate prokaryotes and eukaryotes.
- b) Why for streak plate method is carried out?
- c) Write the composition of nutrient agar.
- d) Draw a suitable design for construction of aseptic area.
- e) Define preservatives with few examples.
- f) Differentiate disinfectants and antiseptics.
- g) What is germ theory of disease?
- h) Write four different factors influencing disinfectant action.
- i) What do you know about HEPA?
- j) Name four different methods for quantitative measurement of bacterial growth.

Part-B

Q2 Only Focused-Short Answer Type Questions- (Answer Any SEVEN out of NINE) (7 x 5)

Discuss briefly on the followings :

- a) Phenol coefficient test
- b) Growth pattern of bacteria with growth curve
- c) Isolation methods for pure cultures
- d) Gram's staining
- e) Animal cell culture
- f) Sterility indicators
- g) IMViC tests
- h) Replication of virus
- i) Classification of fungi

Part-C

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

- Q3** Describe the structure of bacteria with help of a labeled diagram. **(10)**
- Q4** What is sterilization? Discuss in detail physical methods of sterilization. **(10)**
- Q5** Discuss microbial assay of antibiotics. **(10)**
- Q6** What do you mean by microbial spoilage? Write different sources of microbial contaminants. **(10)**

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B.Pharm
BP304T

3rd Semester Regular/Back Examination 2019-20

PHARMACEUTICAL ENGINEERING

BRANCH : B.Pharma

Max Marks: 75

Time : 3 Hours

Q.CODE : HBR749

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 Only Short Answer Type Questions (Answer All-10) (2 x 10)

- a) What is Reynolds Number? Show how it is dimensionless group.
- b) Explain why the value of C_v is more than C_o in fluid flow.
- c) Define Black Body and Grey Body.
- d) Explain Stefan-Boltzmann law of thermal radiation.
- e) What do you mean by economy of multiple effect evaporator ?
- f) Why molecular distillation is also called short path distillation?
- g) How EMC is measured?
- h) Define convective mixing.
- i) Write on the principle of Supercentrifuge.
- j) Differentiate between simple distillation and fractional distillation.

Part-B

Q2 Only Focused-Short Answer Type Questions- (Answer Any SEVEN out of NINE) (7 x 5)

- a) Describe the different laws governing size reduction.
- b) Explain the size separation by elutriation tank.
- c) Distinguish between Orifice Meter and Venturi Meter.
- d) Write on the theories of corrosion.
- e) What are the applications of centrifugation ?
- f) Derive overall heat transfer coefficient from individual coefficients in forced convection.
- g) Describe the advantages and disadvantages of Plate and Frame filter press.
- h) Explain with the help of a diagram the construction and working of a ball mill.
- i) What are the parameters which should be maintained in primary drying step i.e. sublimation of ice under vacuum in freeze drying.

Part-C

Q3 Only Long Answer Type Questions (Answer Any TWO out of FOUR)

- Q3** Describe principle, construction, working, advantages and disadvantages of Silverson Mixer Emulsifier **(10)**
- Q4** Derive Bernoulli's equation and what are the application of Bernoulli's theorem. **(10)**
- Q5** Explain the factors affecting during materials selected for Pharmaceutical plant construction. **(10)**
- Q6** With a labeled sketch, explain the principle, construction, working, advantages and disadvantages of Fluidised Bed Dryer. **(10)**

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**B.Pharm
15PH302**

3rd Semester Back Examination 2019-20

PHARM. ENGINEERING-I

BRANCH : B.Pharma

Max Marks : 100

Time : 3 Hours

Q.CODE : HB591

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 Only Short Answer Type Questions (Answer All-10) (2 x 10)

- a) Define overall heat transfer co-efficient.
- b) Distinguish between evaporation and distillation.
- c) What are the application of drying in pharmacy?
- d) Define critical moisture content.
- e) What are the advantages of size reduction?
- f) What is filter aid? How does it function?
- g) What do you mean by vertex? How it can be prevented.
- h) Differentiate between macro mixing and micro mixing.
- i) What are standard sieves?
- j) How steam distillation process differs from simple distillation?

Part-II

Q2 Only Focused-Short Answer Type Questions- (Answer Any Eight out of Twelve) (6 x 8)

- a) Draw a neat and labelled diagram of a shell-and-tube heat exchanger and describe its construction.
- b) Describe the rate of drying curve.
- c) Explain the working and application of cyclone separator.
- d) Discuss the principle, construction and uses of spray dryer.
- e) Write a short note on planetary mixer.
- f) Describe the principle and working of Silverson mixer emulsifier.
- g) Write in brief the theories of size reduction.
- h) Discuss the construction and working of tray dryer.
- i) Explain principle and working of sieve shaker machine.
- j) Write down the principle and application of steam distillation.
- k) Describe the factors influencing evaporation.
- l) Write the procedure to prepare water for injection.

Part-III

Q3 Only Long Answer Type Questions (Answer Any Two out of Four) (16)

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

Q4 Explain the principle, construction, working and use of fluidized bed dryer. (16)

Q5 Describe the construction, working, advantages and disadvantages of ball mill. (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 2019-20

ORGANIC CHEMISTRY-II

BRANCH : B.Pharma

Max Marks : 100

Time : 3 Hours

Q.CODE : HB877

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 Only Short Answer Type Questions (Answer All-10) (2 x 10)

- a) What is Metamerism.
- b) State the use of Aluminium tert-butoxide.
- c) What is Specific rotation?
- d) What is Huckel's rule of aromaticity?
- e) State the use of Aluminium tert-butoxide.
- f) What is Relative configuration ?
- g) Write about Asymmetric carbon.
- h) Write the structure of Furan & Pyrrole.
- i) What is Internal compensation.
- j) What is Lithium Aluminium Hydride ?

Part-II

Q2 Only Focused-Short Answer Type Questions- (Answer Any Eight out of Twelve) (6 x 8)

- a) Explain why phenol acidity of phenol.
- b) Walden inversion.
- c) Stereoselective and stereospecific reactions.
- d) Friedel crafts alkylation reaction.
- e) Discuss the preparation & Application of Diazomethane.
- f) Explain CIP Rule.
- g) Discuss General Method of Preparation of Phenol.
- h) Illustrate Keto-Enol tautomerism with suitable example.
- i) Write a short note on Geometrical Isomerism.
- j) Explain Reimer-Tiemann Reaction?
- k) Write a short note on N-Bromo-succinimide.
- l) Explain Enantiomerism & Diastereoisomerism.

Part-III

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

Q3 Discuss the general method of preparation & Reaction of indole. Describe the chemical properties of Indole. **(16)**

Q4 What is Racemic mixture? Explain the different method of Resolution of racemic mixture. **(16)**

Q5 Discuss the Preparation and chemical reactions of anthracene. **(16)**

Q6 Write the general method of preparation & Chemical reaction of Benzene. **(16)**

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**B.Pharm
PH.3.5**

3rd Semester Back Examination 2019-20
PHARMA CHEMISTRY-III (ORGANISATIONAL CHEMISTRY-II)
BRANCH : B.Pharma
Time : 3 Hours
Max Marks : 70
Q.CODE : HB878

Answer Question No.1 which is compulsory and any FIVE from the rest.
The figures in the right hand margin indicate marks.

Q1 Answer the following questions : (2 x 10)

- a) Define Huckel's rule of aromaticity with example.
- b) What is Walden inversion?
- c) What is Chiral carbon?
- d) Explain Metamerism with suitable example.
- e) State the application of Lithium Aluminium Hydride.
- f) Write Nucleophilic aromatic substitution reactions.
- g) Derive Keto-Enol tautomerism.
- h) What is Specific rotation?
- i) Write the use of Grignard reagent.
- j) Explain why Chloroacetic acid is stronger acid than acetic acid?

Q2 a) Why phenol is acidic in nature? (5)
b) Write the general methods of preparation of phenol. (5)

Q3 a) Illustrate Friedel crafts reaction. (5)
b) Electrophilic substitution reactions of Benzene. (5)

Q4 a) Aldol condensation reaction. (5)
b) Cannizzaro reaction (5)

Q5 a) Explain Absolute and Relative configuration. (5)
b) Write a short note on Enantiomerism, Diastereoisomerism. (5)

Q6 Discuss the preparations & Reaction of acetoacetic esters and their synthetic applications. (10)

Q7 Write five general methods of preparation and reaction of Carboxylic acid. (10)

Q8 Write short Notes on any TWO : (5 x 2)

- a) N-Bromo-succinimide
- b) Diazomethane
- c) Stereoselective reaction.