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PP—30—2023

FACULTY OF SCIENCE AND TECHNOLOGY

B.Pharm. (III Semester) EXAMINATION

NOVEMBER/DECEMBER, 2023

PHARMACEUTICAL ORGANIC CHEMISTRY-II

Paper BP301T

(Tuesday, 26-12-2023)

Time : 2.00 p.m. to 5.00 p.m.

Time—Three Hours

Maximum Marks—75

N.B. :- (i) Solve all questions.

(ii) Draw structure and reating wherever necessary.

(iii) Figures to the right indicate full marks.

1. Answer the following questions :

10×2=20

(a) Write structure and uses of Saccharine and BHC.

(b) Define activating and deactivating groups with examples.

(c) Write structure and uses of aryl diazonium salts.

(d) Explain synthetic uses of aryl diazonium salts.

(e) What is Huckel's rule ? Give its significance.

(f) Give the qualitative test of phenol.

P.T.O.

- (g) Define the terms aromaticity and resonance.
- (h) What are ortho para directing groups ? Give examples.
- (i) Discuss the stability of cycloalkanes.
- (j) Outline *two* reactions of cyclopropane.

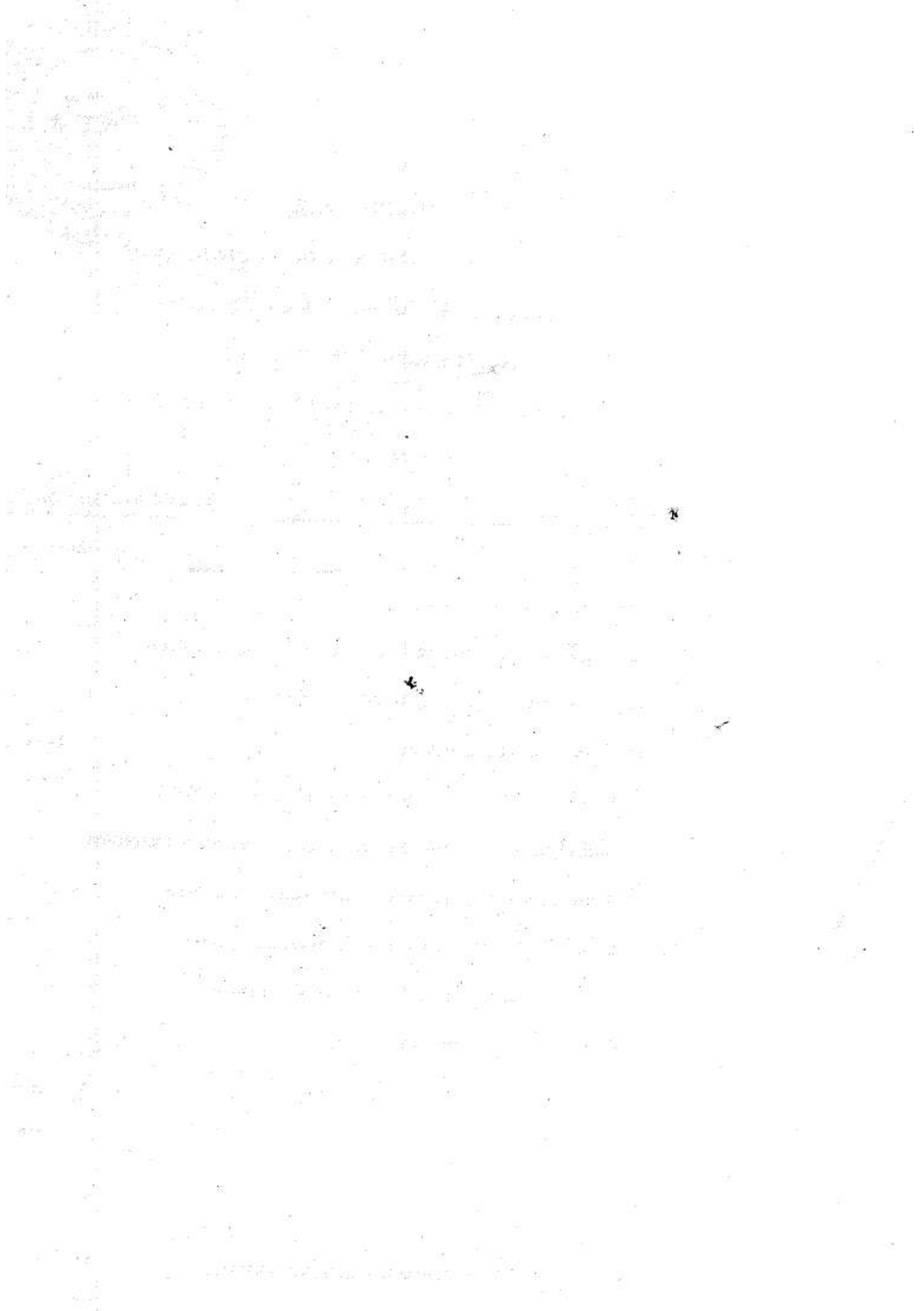
2. Answer any *two* of the following : 2×10=20

- (a) Define electrophilic substitution reaction. Explain mechanism of nitration and sulphonation of benzene.
- (b) What are aromatics ? Explain the reactions of aromatic amines. Discuss the effect of substituents on basicity of aromatic amines.
- (c) What are fatty acids ? Explain significance and reactions of hydrolysis, hydrogenation, rancidity and drying of oils.

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

- (a) Explain the Friedel-Craft's alkylation of benzene with limitations.
- (b) Outline any *two* synthesis and reactions of naphthalene.
- (c) Define angle strain. Explain why higher cycloalkanes are more stable than lower members.
- (d) Give any *four* chemical reactions of cyclobutane.
- (e) Explain the reaction and mechanism of nitration of benzene.

- (f) Give structure and uses of :
- (i) phenol
 - (ii) o-cresol
 - (iii) resorcinol
 - (iv) α -naphthol
 - (v) β -naphthol.
- (g) Describe Bayer's strain theory. What are its limitations ?
- (h) Describe any *one* method to determine Reichert-Meissl value with its significance.
- (i) Explain Sacht-Mohr theory and molecular orbital concept of Cycloalkanes.





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PP—34—2023

FACULTY OF PHARMACEUTICAL SCIENCE AND TECHNOLOGY

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

NOVEMBER/DECEMBER, 2023

PHYSICAL PHARMACEUTICS-I

Paper BP302T

(Thursday, 28-12-2023)

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.

1. Answer the following :

10×2=20

- (a) Define partition coefficient.
- (b) What do you mean by Glassy State ?
- (c) Define solubility.
- (d) What is meant by pH and buffer capacity ?
- (e) State Rault's law.
- (f) Give applications of buffers.
- (g) What are eutectic mixtures ?
- (h) What is latent heat ?
- (i) Define relative humidity.
- (j) What is meant by vapour pressure ?

P.T.O.

2. Solve any *two* of the following : 2×10=20
- (a) Discuss factors affecting solubility of drugs.
 - (b) What are aerosols ? Draw a neat labelled diagram of aerosol and give its application.
 - (c) Define surface tension. Explain various methods of measurement of it.
3. Solve any *seven* of the following : 7×5=35
- (a) What is refraction ? Give application of refractive index.
 - (b) Describe the role of polar solvent and non-polar solvents in solubility of the drugs.
 - (c) Explain partial miscibility curve of phenol water system.
 - (d) Explain protein binding.
 - (e) What is optical rotation ? Explain polarimeter.
 - (f) Give application of complexation.
 - (g) Define Isotonicity. Explain any *one* method to determine isotonicity.
 - (h) Explain HLB system with neat labelled diagram.
 - (i) Explain in brief solubilization and detergency.

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FACULTY OF PHARMACEUTICAL SCIENCE AND TECHNOLOGY

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

NOVEMBER/DECEMBER, 2023

PHARMACEUTICAL MICROBIOLOGY

Paper—(BP-303T)

(Saturday, 30-12-2023)

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 diagrams wherever necessary.
 - (iii) Figures to the right indicate full marks.

1. Answer all the questions :

10×2=20

- (a) Give the functions of bacterial cell wall.
- (b) Enlist the different types of culture media.
- (c) Write the principle of simple staining.
- (d) Define D-value and 2-value.
- (e) Write the importance of fungi.
- (f) Draw a neat labelled diagram of Bacteriophages.
- (g) Write ideal properties of disinfectant.
- (h) How will you validate HEPA filter ?
- (i) Enlist different chemical preservatives.
- (j) Give the principle of Autoclave.

P.T.O.

2. Solve any *two* :

10×2=20

- (a) Write in detail importance, scope of pharmaceutical microbiology. Enlist applied branches of microbiology.
- (b) Define sterilization. List the different methods used for sterilization with suitable example. Explain filtration sterilization.
- (c) Explain in detail multiplication of Human Viruses.

3. Solve any *seven* :

7×5=35

- (a) Explain factors affecting preservative efficacy.
- (b) Explain different applications of cell cultures in pharmaceuticals.
- (c) Explain the different sources and types of microbial contamination of pharmaceutical product.
- (d) How will you assess new antibiotics by MIC.
- (e) Differentiate between Gram-Positive and Gram-negative bacterial cell wall.
- (f) Explain air sampling methods for testing of clean and aseptic room.
- (g) Give in detail classification of disinfectants with its mechanism of action.
- (h) Describe in detail lytic growth cycle of Bacteriophage.
- (i) Give the advantages and disadvantages and applications of moist heat sterilization.



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FACULTY OF PHARMACEUTICAL SCIENCE AND TECHNOLOGY

B.Pharmacy (Third Semester) EXAMINATION

JANUARY, 2024

PHARMACEUTICAL ENGINEERING

(BP-304T)

(Tuesday, 02-01-2024)

Time : 2.00 p.m. to 5.00 p.m.

Time—3 Hours

Maximum Marks—75

N.B. :— (i) Answer *all* the questions.

(ii) Answer to the point only.

(iii) Draw neat labelled diagram wherever necessary.

1. Answer *all* the questions :

10×2=20

(a) What is coarse powder and very fine powder ?

(b) What is Reynolds number ? Give its equation.

(c) Give classification of dryers.

(d) What is convective and diffusive mixing ?

(e) Define terms distillation and ideal solution.

(f) Define terms conduction and convection with *one* example.

(g) What is filter aid ? Give its ideal properties.

(h) Define terms filtration and clarification.

(i) Give classification of materials used for Pharmaceutical plant construction.

(j) Draw well labelled diagram of rotary drum filter.

P.T.O.

2. Answer the following (any two) : 2×10=20
- (a) Give principle, construction, working, uses, advantages and disadvantages of fluidized bed dryer.
 - (b) Write in detail about steam distillation method.
 - (c) Write in detail about sieve shaker machine.
3. Answer the following (any seven) : 7×5=35
- (a) Give principle, construction, working of fractional distillation.
 - (b) Write in detail about fluid energy mill.
 - (c) Give factors affecting evaporation.
 - (d) Give principle, construction, working of venturimeter.
 - (e) Write in detail about tray dryer.
 - (f) Write principle, construction and working of planetary mixer.
 - (g) Explain different types of corrosion.
 - (h) Give principle, construction and working of filter leaf.
 - (i) Write in detail about perforated basket centrifuge.