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PM—30—2025

FACULTY OF SCIENCE AND TECHNOLOGY

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

APRIL/MAY, 2025

PHARMACEUTICAL ORGANIC CHEMISTRY-II

(Wednesday, 7-5-2025) (BP301T) **Time : 2.00 p.m. to 5.00 p.m.**

Time—3 Hours *Maximum Marks—75*

N.B. :— (1) *All* questions are compulsory.

(2) Draw structure and reactions wherever necessary.

(3) Figures to the right indicate full marks.

1. Answer the following : 10×2=20

(*a*) Explain Aromaticity and Huckel's Rule.

(*b*) Write the Haworth synthesis of Naphthalene.

(*c*) Define saponification value.

(*d*) Write the difference between fats of oils.

(*e*) Write the structure of :

(*i*) Triphenyl methane

(*ii*) Phenanthrene.

(*f*) Explain the Basicity of Amines.

(*g*) Explain the Sachse-Mohr's theory.

P.T.O.

(*h*) Write the structure of :

(*i*) D.D.T.

(*ii*) B.H.C.

(*i*) Explain Rancidity of oils.

(*j*) Give the limitation of Friedel Craft Acylation.

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

(*a*) Give the preparation and chemical properties of Anthracene.

(*b*) Explain Bayers strain theory and Coulson and Moffits theory.

(*c*) Write and chemical properties of Benzene.

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

(*a*) Give the preparation of phenol.

(*b*) Explain molecular orbital structure of Benzene.

(*c*) Write the chemical properties of phenanthrene.

(*d*) Discuss the qualitative test of phenol.

(*e*) Write the chemical properties of Aromatic Amines.

(*f*) Write the chemical properties of Benzoic acid.

(*g*) Write a note on Hydrogenation of oil.

(*h*) Write the chemical properties of cyclopropane and cyclobutane.

(*i*) Write the evidences in the derivation of structure of Benzene.

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PM—34—2025

FACULTY OF PHARMACEUTICAL SCIENCES AND TECHNOLOGY

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

APRIL/MAY, 2025

PHYSICAL PHARMACEUTICS-I

BP302T

(Friday, 9-5-2025) **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 : 10×2=20

(*a*) Define diffusion.

(*b*) Define solution with example.

(*c*) Discuss Glassy state.

(*d*) Define pH and buffer capacity.

(*e*) Give Snell's law.

(*f*) Define crystalline state of matter.

(*g*) What is sublimation ?

(*h*) Define surface tension with its unit.

(*i*) Define surfectants with example.

(*j*) Define complexation.

P.T.O.

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

(*a*) Describe the factors affecting solubility of drugs.

(*b*) Explain partial miscibility curve of phenol water system and Nicotine water system in detail.

(*c*) What are organic complexes ? Explain with suitable examples.

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

(*a*) What is protein binding ? Give kinetics of protein binding.

(*b*) What is optical activity ? Give application of optical activity.

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

(*d*) Discuss solubilization and detergency.

(*e*) What is spreading coefficient ?

(*f*) Explain dissociation constant. Give its applications.

(*g*) Explain HLB system with a neat labelled diagram.

(*h*) Explain distribution low with its limitations.

(*i*) Explain polymorphism with its importance in pharmacy.

This question paper contains 2 printed pages]

PM—38—2025

FACULTY OF PHARMACEUTICAL SCIENCE

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

APRIL/MAY, 2025

PHARMACEUTICAL MICROBIOLOGY

Paper BP-303T

(Tuesday, 13-5-2025) **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 neat labelled diagrams wherever necessary.

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

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

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

(*b*) Enlist pure culture techniques.

(*c*) Define antiseptic and sanitization.

(*d*) Write the importance of fungi.

(*e*) Draw well labelled diagram of Bacteriophages.

(*f*) How will you validate HEPA filter ?

(*g*) List different chemical preservatives.

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

(*i*) What is Mycology ?

(*j*) What is DOP Test ?

P.T.O.

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

(*a*) What is meant by disinfection ? What are the properties of an ideal disinfectant ? Give a classification of disinfectants.

(*b*) What is sterilization ? Explain in detail filtration sterilization.

(*c*) What are the main sources of contamination in aseptic area how will you prevent it ?

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

(*a*) Write in detail different applications of cell culture in pharmaceuticals and research.

(*b*) Explain air sampling method for testing and clean of aseptic area.

(*c*) Differentiate between lytic and lysogenic cycle of Bacteriophage.

(*d*) Explain sterilization indicators.

(*e*) Explain in detail growth curve of Bacteria.

(*f*) Discuss different types of culture media.

(*g*) Explain cultivation of human virus in chick embryo.

(*h*) What is Radiation Sterilization ? Explain principle, application and working.

(*i*) Differentiate between gram positive and gram negative bacterial cell wall.

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PM—42—2025

FACULTY OF SCIENCE AND TECHNOLOGY

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

APRIL/MAY, 2025

PHARMACEUTICAL ENGINEERING

(BP304T)

(Thursday, 15-5-2025) **Time : 2.00 p.m. to 5.00 p.m**

Time—Three Hours *Maximum Marks*—75

Note :— (*i*) *All* questions are compulsory.

(*ii*) Draw a neat labelled diagrams wherever necessary.

(*iii*) Answer to the point only.

1. Answer the following : 2×10=20

(*a*) What is the distillation ? Give its types.

(*b*) Give statement of Bernoulli's theorem.

(*c*) Give objectives and applications of drying.

(*d*) Explain factors affecting mixing.

P.T.O.

(e) Enlist names of mills with their mechanism of size reduction.

(f) Define the term evaporation and filtration.

(g) What is heat interchanger ? Give examples.

(h) What is manometer ? Give its types.

(i) Define size reduction and size separation.

(j) What is filter media ? Give its ideal properties.

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

(a) Describe the principle, construction working, uses, merits and demerits of tray dryer.

(b) Write in detail about plate and frame filter.

(c) Describe principle, construction working, uses, advantages and disadvantages of Ball Mill

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

(a) What is corrosion ? Explain types of corrosion.

(b) Explain construction, working of double cone blender.

(c) Write about perforated basket centrifuse.

(*d*) Write a note on Reynold's experiment.

(*e*) Define evaporation and give factors affecting evaporation.

(*f*) Write a note on simple distillation.

(*g*) Write a brief note on Venturimeter.

(*h*) Explain mechanism involved in heat transfer. Explain Fourier's law.

(*i*) Write a brief note on cyclone separator.