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DP—30—2022

FACULTY OF SCIENCE AND TECHNOLOGY

B.Pharm. (Third Semester) EXAMINATION

MARCH/APRIL, 2023

PHARMACEUTICAL ORGANIC CHEMISTRY

Paper-II (BP301-T)

(Thursday, 16-03-2023)

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.

(iii) Draw structures wherever necessary.

1. Solve the following questions :

10×2=20

(a) Define iodine value.

(b) Write hydrogenation reaction of fats and oils.

(c) Write any *one* preparation method of phenanthrene.

(d) Draw structure of DDT and write its IUPAC name.

(e) Write canonical forms of anthracene.

(f) Complete the following reaction :



(g) Write uses of cresols.

(h) Complete the following reaction :

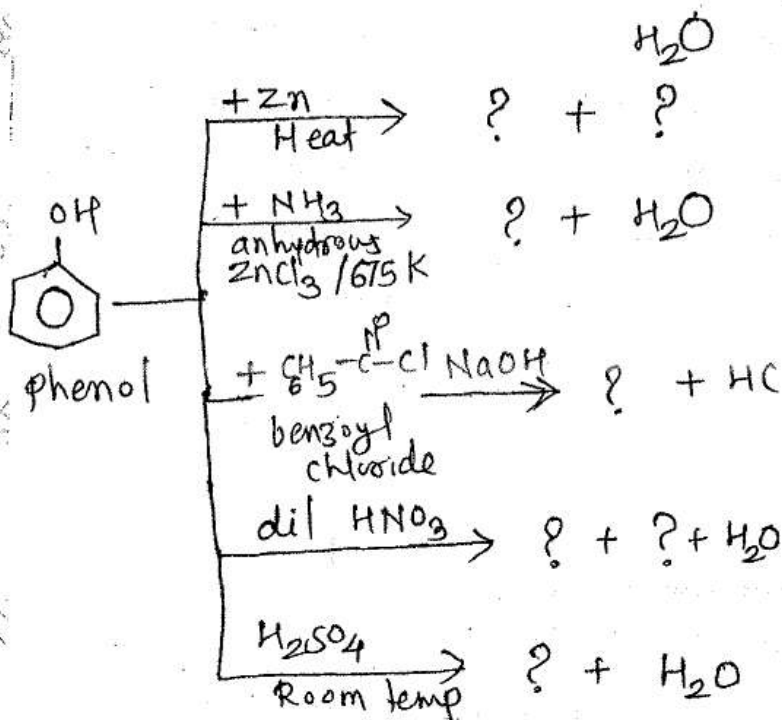


(i) Write halogenation reaction benzene.

(j) Write any *one* preparation method of cycloalkanes.

P.T.O.

2. Solve any *two* of the following : 2×10=20
- What is the effect of substituents on reactivity and orientation of monosubstituted benzene.
 - Write any *five* electrophilic substitution reactions naphthalene.
 - Explain Baeyer's strain theory in detail.
3. Solve any *seven* of the following : 7×5=35
- Write any *two* chemical properties of fats and oil.
 - Write any *two* preparation methods of anthracene.
 - Write a note on aromaticity of benzene with examples.
 - Write classification and nomenclature of phenols.
 - Write any *two* chemical reactions of aromatic amines.
 - Why *p*-nitrobenzoic acid is stronger acid than *m*-nitrobenzoic acid ?
 - Write any *two* applications of diazonium salts.
 - Write notes on :
 - Acid value
 - Saponification value
 - Complete the following reactions of phenol :



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DP—34—2022

FACULTY OF PHARMACEUTICAL SCIENCE AND TECHNOLOGY

B.Pharm. (Third Semester) EXAMINATION

MARCH/APRIL, 2023

PHYSICAL PHARMACEUTICS-I

Paper BP302T

(Saturday, 18-3-2023)

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. All questions are compulsory :

10×2=20

- (a) Define Solubility.
- (b) Define solvation and association.
- (c) Define eutectic mixture and liquid crystal.
- (d) Define surface and interfacial tension.
- (e) Define complexation.
- (f) Give any *two* applications of buffer.
- (g) What is meant by pH and buffer capacity ?
- (h) What is Rault's law ?
- (i) What is meant by vapour pressure ?
- (j) Define spreading coefficient.

P.T.O.

2. Solve any *two* of the following :

2×10=20

- (a) Explain distribution law, its limitation and applications in detail.
- (b) Define Refractive Index. Explain its method of measurement, instrumentation and applications in detail.
- (c) Define surface tension. Explain various methods of measurement of it.

3. Solve any *seven* :

7×5=35

- (a) Explain C.S.T. by phenol-water system in detail.
- (b) What is meant by aerosol ? Give its applications.
- (c) Define HLB. Draw a well labelled diagrams of HLB scale and give its applications.
- (d) Explain Protein Binding.
- (e) Write about buffers in Pharmaceutical and Biological Systems.
- (f) Give applications of complexation.
- (g) Explain in brief solubilisation and detergency.
- (h) Explain in brief polymorphism.
- (i) Explain in brief determination of dissociation constant and its applications.

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DP—38—2022

FACULTY OF PHARMACEUTICAL SCIENCE AND TECHNOLOGY

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

MARCH/APRIL, 2023

PHARMACEUTICAL MICROBIOLOGY

Paper-BP-303-T

(Tuesday, 21-03-2023)

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

Time— Three Hours

Maximum Marks—75

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

(ii) Draw neat labelled diagrams wherever necessary.

(iii) Figures to the right indicate full marks.

1. Answer all the questions :

10×2=20

(a) Define the following :

(i) Antiseptic

(ii) Sanitization.

(b) What is Mycology ?

(c) Define stain. Write the types of stain.

(d) Enlist pure culture techniques.

(e) Enlist which physical parameters required for growth of Bacteria.

(f) What is Bioburden ?

(g) Define (a) D-value (b) 2-Q10-value.

(h) Define disinfection. Write ideal properties of a disinfectant.

(i) Write about diluting fluid used for sterility testing.

(j) What is DOP test ?

2. Solve any two of the following :

2×10=20

(a) What is sterilization. Give its classifications and explain the different sterility indications with suitable example.

P.T.O.

- (b) Write in detail about contribution of Louis Pasteur in field of microbiology. Explain in detail growth curve of bacteria.
- (c) Enlist and explain factors affecting microbial spoilage.
- (d) Explain the different sources and types of microbial contamination of pharmaceutical products.

3. Solve any *seven* of the following :

7×5=35

- (a) Explain factors affecting preservative efficacy.
- (b) Explain in detail the classification of disinfectants.
- (c) Describe in short lytic cycle of Bacteriophage.
- (d) Explain in detail filtration sterilization method.
- (e) Differentiate between gram-positive and gram-negative Bacterial cell wall.
- (f) Explain in detail about shape and arrangement of bacteria.
- (g) How will you assess new antibiotics by MIC ?
- (h) Explain the different tests used for detection of microbial contamination in aseptic areas.
- (i) Explain sterility testing.

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DP—42—2022

FACULTY OF PHARMACEUTICAL SCIENCE

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

MARCH/APRIL, 2023

PHARMACEUTICAL ENGINEERING

Paper-BP-304T

(Friday, 24-03-2023)

Time : 02.00 p.m. to 05.00 p.m.

Time—Three Hours

Maximum Marks—75

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

(ii) Draw well labelled diagram wherever necessary.

(iii) Figures to the right indicate full marks.

1. Answer *all* the questions :

10×2=20

(i) Write *four* pharmaceutical applications of centrifugal separation.

(ii) Define coarse powder and moderately coarse powder.

(iii) Give the mechanisms of mixing in solids.

(iv) Describe in short, real solutions with its deviation from Raoult's law.

(v) Give classification of evaporators.

(vi) What is Reynold's number ? Describe its importance.

(vii) State and explain Fourier's law of heat transfer with equation.

(viii) Enlist types of glass according to Indian Pharmacopoeia.

(ix) Define Corrosion. List the types of corrosion.

(x) Enlist the factors influencing rate of filtration.

P.T.O.

2. Solve any *two* of the following : 2×10=20
- (i) Discuss principle, construction, working, merits, demerits and uses of Spray dryer.
 - (ii) Describe metal as materials of pharmaceutical plant construction.
 - (iii) Explain fluid energy mill with principle, construction, working advantages, disadvantages and applications by drawing neat labelled diagram.
3. Solve any *seven* of the following : 7×5=35
- (i) Write construction and working of cyclone separator with neat labelled diagram.
 - (ii) Describe impellers used for liquid mixing.
 - (iii) Explain in detail distillation under reduced pressure.
 - (iv) Give principle, construction and working of evaporating pan.
 - (v) Differentiate between orifice meter and venturi meter.
 - (vi) Describe radiation heat transfer mechanism.
 - (vii) With a neat labelled diagram describe construction and working of filter press.
 - (viii) Define Centrifugation. Give advantages and disadvantages of centrifugation.
 - (ix) Explain principle, construction and working of planetary mixer.