

[LB 4259]

AUGUST 2012

Sub. Code: 4259

SECOND B.PHARM. EXAM

PAPER IV – PHARMACEUTICAL TECHNOLOGY

Q.P. Code : 564259

Time : Three hours

Maximum: 100 Marks

(180 Min) Answer ALL questions in the same order.

I. Elaborate on:

**Pages Time Marks
(Max.)(Max.)(Max.)**

- | | | | |
|--|----|----|----|
| 1. Explain the principle and working procedure of Fractional distillation apparatus. Illustrate the fractional distillation of the mixture of components with the boiling point-composition diagram. | 19 | 33 | 20 |
| 2. Describe the mechanism and different modes of stress applied in size reduction? Write the principle, construction and working of Fluid energy mill. | 19 | 33 | 20 |

II. Write notes on:

- | | | | |
|--|---|---|---|
| 1. Measurement of rate of flow of fluids by venturi meter. | 3 | 8 | 5 |
| 2. Theories of filtration. | 3 | 8 | 5 |
| 3. Short tube Evaporator. | 3 | 8 | 5 |
| 4. Physical Factors influencing selection of materials of pharmaceutical Plant Construction. | 3 | 8 | 5 |
| 5. Fluidised bed dryer. | 3 | 8 | 5 |
| 6. Mechanism of Crystallization. | 3 | 8 | 5 |
| 7. Planetary mixer. | 3 | 8 | 5 |
| 8. Cyclone separator. | 3 | 8 | 5 |

III. Short Answers:

- | | | | |
|--|---|---|---|
| 1. Primary Refrigerants with examples. | 1 | 5 | 2 |
| 2. Different mechanisms of Heat flow. | 1 | 5 | 2 |
| 3. Destructive distillation. | 1 | 5 | 2 |
| 4. Humidity Ratio. | 1 | 5 | 2 |
| 5. Corrosion. | 1 | 5 | 2 |
| 6. Electrostatic precipitation. | 1 | 5 | 2 |
| 7. Centrifugal effect. | 1 | 5 | 2 |
| 8. Bernoulli's theorem. | 1 | 5 | 2 |
| 9. Caking of crystals. | 1 | 5 | 2 |
| 10. Free moisture content. | 1 | 5 | 2 |

[LC 4259]

FEBRUARY 2013

Sub. Code: 4259

SECOND YEAR B.PHARM. EXAM
PAPER IV – PHARMACEUTICAL TECHNOLOGY

Q.P. Code : 564259

Time : Three hours
(180 Min)

Maximum: 100 Marks

I. Elaborate on: **(2x20=40)**

1. Define Crystallization. Discuss about the Mier's Super Saturation Theory. Enumerate the Principle, construction, working and advantages of Swenson Walker Crystallizer.
2. Explain the theory behind Corrosion. How will you prevent and control Corrosion?

II. Write notes on: **(8x5=40)**

1. Central Air Conditioning System.
2. Multiple Effect Evaporator.
3. Steam distillation of Industrial scale.
4. Glass as the material of Pharmaceutical plant Construction.
5. Chemical hazards.
6. Equilibrium Moisture content.
7. Conical disc centrifuge.
8. Rotary Drum Filter.

III. Short Answers: **(10x2=20)**

1. Area meters.
2. Cake Filtration.
3. Vortex Formation.
4. Circulating load.
5. Definition of Valves and Pumps.
6. Different sources of heat.
7. Eutectic Point.
8. Comminution.
9. Binary mixture.
10. Bound Water.

(LD 4259)

AUGUST 2013

Sub. Code: 4259

**SECOND YEAR B.PHARM. EXAM
PAPER IV – PHARMACEUTICAL TECHNOLOGY
Q.P. Code: 564259**

Time: Three Hours

Maximum: 100 marks

I. Elaborate on:

(2X20=40)

1. Discuss in detail about the method of determination of humidity by dewpoint and psychometric methods
2. Write the principle and procedure involved in extractive and azeotropic distillation process add a note on the application of distillation process.

II. Write notes on:

(8X5=40)

1. Spary dryer
2. krystal crystallizer
3. Factors affecting filltration
4. Types of measurement of flow of fluids
5. Factors affecting size reduction
6. Tubular heaters
7. Vertical tube evaporators
- 8.Considerations while mixing solids in a mixer.

III. Short Answers on:

(10X2=20)

1. Percentage humidity
2. Laminar flow
3. Fourier's law
4. Lyophilisation
5. Applications of centrifugation
6. Galvonic corrosion
7. Seitz filter
8. Saturation temperature
9. Venturimeter
- 10.Critical moisture content

(LE 4259)

FEBRUARY 2014

Sub. Code: 4259

**SECOND YEAR B.PHARM. EXAM
PAPER IV – PHARMACEUTICAL TECHNOLOGY**

Q.P. Code: 564259

Time: Three Hours

Maximum: 100 marks

I. Elaborate on:

(2X20=40)

1. Explain the principle, construction, working and application of Film evaporators.
2. Enumerate the various factors affecting filtration. Discuss about Rotary filter.

II. Write notes on:

(8X5=40)

1. Azeotropic distillation.
2. Freeze dryer.
3. List out types of valves and explain any one.
4. Enumerate mechanism involved in size reduction with suitable example.
5. Sources of heat.
6. Sigma blade mixer.
7. Krystal crystalliser.
8. Stainless steel as materials of plant construction.

III. Short Answers on:

(10X2=20)

1. Relative humidity.
2. Steam distillation.
3. Multiple effect evaporator.
4. Sublimation.
5. Prevention of fire hazards.
6. Filter media.
7. Types of crystals.
8. Relative Volatility.
9. Triple roller mill.
10. Double cone blender.

SECOND YEAR B.PHARM. DEGREE EXAMINATION

Paper IV – PHARMACEUTICAL TECHNOLOGY

Q. P. Code: 564259

Time: Three Hours

Maximum: 100 Marks

Answer All Questions

I. Essay Questions:

(2 x 20 = 40)

1. a) Write a role on stainless steel in material of plant construction in the pharmaceutical industry.
b) Draw and explain the Psychrometric chart.
2. Define viscosity and explain about Venturimeter and Orifice meter.

II. Short Notes:

(8 x 5 = 40)

1. Explain Raoult's law of distillation.
2. Write a note on chemical hazards.
3. Give an account on gear pump.
4. Explain cartridge filter.
5. Write briefly on mechanism of heat transfer.
6. What are the uses, advantages and disadvantages of fluidized bed dryer?
7. Write a note on double cone blender.
8. Write the construction and working of ball mill.

III. Short Answers:

(10 x 2 = 20)

1. How will you prepare super saturation solution for crystallization from a given solution?
2. Define valves.
3. What are all the disadvantages with thermostatic steam trap?
4. Define evaporation.
5. Define centrifugation.
6. Uses of phase diagram
7. Define humidity.
8. Define Bernouli's theorem.
9. Define distillation.
10. Advantage of hammer mill.

(LG 4259)

FEBRUARY 2015

Sub. Code: 4259

**SECOND YEAR B.PHARM. EXAMINATION
PAPER IV – PHARMACEUTICAL TECHNOLOGY**

Q.P. Code: 564259

Time: Three hours

Maximum: 100 marks

I. Essay:

(2 x 20 = 40)

1. Explain the methods of heat transfer and give in detail heat transfer by conduction.
2. a) Write working principle, construction, advantages and disadvantages of conical disc centrifuge.
b) Explain Meir's theory of crystallization.

II. Short notes:

(8 x 5 = 40)

1. Write a note on filter media
2. Discuss on gate valve
3. Give a note on glass as materials of plant construction
4. Explain rotary cutter mill
5. How will you prevent dust hazards in pharmaceutical industry?
6. Explain the various laws of size reduction
7. Write in detail falling film evaporator
8. Discuss rotameter

III. Short answers:

(10 x 2 = 20)

1. Give all types of manometers
2. Dew point
3. What is direct weighing of fluid flow?
4. Define crystals
5. Define RH
6. What are the disadvantages of plate and frame filter press?
7. Write advantages of glass as plant construction
8. Define accident records
9. Define corrosion
10. What is adiabatic cooling lines?

B.PHARM. DEGREE EXAMINATION

SECOND YEAR

PAPER IV – PHARMACEUTICAL TECHNOLOGY

Q.P. Code: 564259

Time : Three Hours

Maximum : 100 marks

Answer All Questions

I. Essay:

(2 x 20 = 40)

1. Explain the principle and working procedure of Fractional distillation apparatus. Illustrate the fractional distillation of the mixture of components with the boiling point-composition diagram.
2. Define corrosion and various types of corrosion. Describe on prevention and control of corrosion.

II. Short notes :

(8 x 5 = 40)

1. Short tube Evaporator.
2. Fluidized bed dryer.
3. Cyclone separator.
4. Solubility curve.
5. Planetary mixer.
6. Orifice meter.
7. Fluid energy mill.
8. Special drying methods.

III. Short answers:

(10 x 2 = 20)

1. Humidity Ratio.
2. Centrifugal effect.
3. Caking of crystals.
4. Reynolds's number.
5. What are alloys give any two examples?
6. Name the equipments used for dehumidification.
7. Application of glass.
8. What is latent heat?
9. Define filter media.
10. Types of liquid movement.

(LI 4259)

FEBRUARY 2016

Sub. Code: 4259

**SECOND YEAR B.PHARM. EXAMINATION
PAPER IV – PHARMACEUTICAL TECHNOLOGY**

Q.P. Code: 564259

Time: Three hours

Maximum: 100 Marks

I. Essay:

(2 x 20 = 40)

1. a) Describe the Construction and Working, advantages and disadvantages of Rotary drum Filter.
b) Explain the Various factors affecting Filtration.
2. a) Discuss the Concept of Dehumidification and application of Humidity Measurement. Name the equipments used for Dehumidification.
b) Describe the Principle and Application of Refrigeration.

II. Short notes:

(8 x 5 = 40)

1. Rota meter.
2. Hammer Mill.
3. Manometer.
4. Tubular Heater.
5. How will you prevent Fire Hazards in Pharmaceutical Industries?
6. Swenson Walker Crystallizer.
7. Chemical Hazards.
8. Concepts of Boundary layer.

III. Short answers:

(10 x 2 = 20)

1. Define Filter Aids.
2. What are the different modes of Size reduction?
3. What are the different Standards for Sieves in Size separation?
4. Write the classification of Materials for Plant construction.
5. Define Raoult's Law.
6. Saturation temperature.
7. Name the dryers used in Pharmaceutical Industries.
8. Critical Moisture Content.
9. Lyophilisation.
10. Define Relative Humidity.

(LJ 4259)

AUGUST 2016

Sub. Code: 4259

**SECOND YEAR B.PHARM. EXAMINATION
PAPER IV – PHARMACEUTICAL TECHNOLOGY**

Q.P. Code: 564259

Time: Three hours

Maximum: 100 Marks

I. Essay: (2 x 20 = 40)

1. Explain the construction, working, advantages and disadvantages of filter press and filter leaf.
2. Classify Evaporators. Describe construction and working of a film Evaporator.

II. Short notes: (8 x 5 = 40)

1. What are the advantages of size reduction?
2. Explain the working principle of cyclone separator.
3. Give five pharmaceutical applications of Industrial centrifuges.
4. Explain the working of flash distillation.
5. Write note on theory of crystallization.
6. Describe the working of refrigerator.
7. Write the factors influencing rate of corrosion.
8. Write briefly on mechanism of heat transfer.

III. Short answers: (10 x 2 = 20)

1. Define drying. Give its importance in the formulation of dosage forms.
2. Laminar Flow.
3. Write note on check valves.
4. Explain the construction of calandria.
5. Define crystal.
6. Classify driers.
7. Define humidification.
8. Types of corrosion
9. Advantages of plastics.
10. Uses of Phase diagram.

(LK 4259)

FEBRUARY 2017

Sub. Code: 4259

**B.PHARM. EXAMINATION
SECOND YEAR
PAPER IV – PHARMACEUTICAL TECHNOLOGY**

Q.P. Code: 564259

Time: Three hours

Maximum: 100 Marks

I. Elaborate on: **(2 x 20 = 40)**

1. Write the principle, construction, working, application, merits and demerits of freeze drying.
2. a) Describe the principle and factors affecting size reduction.
b) Discuss in detail ball mill.

II. Write notes on: **(8 x 5 = 40)**

1. Describe with a diagram 'Venturimeter'.
2. Discuss the principle underlying centrifugation.
3. Describe Mier's Theory of super saturation.
4. Explain the principle of steam distillation process.
5. Principle and applications of Air-condition.
6. Types of measurement of flow of Fluids.
7. Multiple effects Evaporator.
8. Gear pump.

III. Short answers on: **(10 x 2 = 20)**

1. Application of stainless steel material in pharmacy.
2. What is azeotropic distillation?
3. Define nucleation in crystallization.
4. Define Humidity.
5. Define Bernouli's Theorem.
6. Define Valve.
7. Different sources of Heat.
8. Eutectic Point.
9. Define filtration.
10. Crystal Lattice.

(LL 4259)

AUGUST 2017

Sub. Code: 4259

**B.PHARM. DEGREE EXAMINATION
SECOND YEAR
PAPER IV – PHARMACEUTICAL TECHNOLOGY**

Q.P. Code: 564259

Time: Three hours

Maximum: 100 Marks

I. Elaborate on:

(2 x 20 = 40)

1. a) Explain the construction, working, advantages and disadvantages of drum filter.
b) Write factors influencing the rate of filtration.
2. Describe the construction, working, advantages and disadvantages of colloidal mill and Fluid energy mill.

II. Write notes on:

(8 x 5 = 40)

1. Describe in detail about humidity.
2. Explain the principle and working of silverson mixer.
3. Discuss the Miers super-saturation theory of crystallization.
4. Describe the construction and working of falling film evaporator.
5. Describe various types of iron as material of construction.
6. Describe the principle, working and applications of steam distillation.
7. Discuss the theories involved in fluid flow.
8. Write notes on valves.

III. Short answers on:

(10 x 2 = 20)

1. Define polymorphism.
2. What is calandria?
3. Classification of evaporators.
4. Define dry distillation.
5. Application of centrifugation.
6. Define filtration.
7. Define mixing.
8. What are the grades of powder?
9. Mechanisms of heat flow.
10. What is minus material?

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

(LM 4259)

FEBRUARY 2018

Sub. Code: 4259

**B.PHARM. DEGREE EXAMINATION
SECOND YEAR
PAPER IV – PHARMACEUTICAL TECHNOLOGY**

Q.P. Code: 564259

Time: Three hours

Maximum: 100 Marks

I. Elaborate on:

(2 x 20 = 40)

1. Describe the construction, working principle, efficiency, merits and demerits of Fractional Distillation.
2. a) Explain the principle, construction, working of Krystal crystallizer.
b) Write in detail about factors affecting caking of Crystals.

II. Write notes on:

(8 x 5 = 40)

1. Factors influencing evaporation.
2. Solubility curve.
3. Materials used for plant construction.
4. Fourier's law and its application.
5. Theories of filtration.
6. Super centrifuge.
7. Fluidized bed dryer.
8. Humidity chart and its uses.

III. Short answers on:

(10 x 2 = 20)

1. Dew point.
2. Types of sieves.
3. Refrigeration load.
4. Manometer.
5. Equilibrium moisture content.
6. Volatility and relative volatility.
7. Lyophilization.
8. Radiation.
9. Turbulent Flow.
10. Raoult's Law.

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

(LN 4259)

AUGUST 2018

Sub. Code: 4259

**B.PHARM. DEGREE EXAMINATION
SECOND YEAR
PAPER IV – PHARMACEUTICAL TECHNOLOGY**

Q.P. Code: 564259

Time: Three hours

Maximum: 100 Marks

I. Elaborate on: (2 x 20 = 40)

1. a) Explain the construction, working and applications of climbing film evaporator.
b) Write factors influencing the rate of evaporation.
2. a) Write the applications of size reduction.
b) Describe the construction, working, advantages and disadvantages of freeze Dryer.

II. Write notes on: (8 x 5 = 40)

1. Explain the working of a cyclone separator and its usefulness.
2. Write note on Humidity chart.
3. Describe the construction and working of a triple roller mill.
4. Give five pharmaceutical applications of industrial centrifuges.
5. Describe the principles, working and applications of steam distillation.
6. What is corrosion? Write the types of corrosion. How can corrosion be prevented?
7. Describe the working of a refrigerator.
8. Explain the principle and working of colloidal mill.

III. Short answers on: (10 x 2 = 20)

1. What are various grades of powders?
2. Darcy's law.
3. What are filter aids? Give examples.
4. Define flash distillation.
5. Classify dryers.
6. What is calandria?
7. Mechanisms of heat transfer.
8. Define humidification.
9. Applications of stainless steel in pharmaceutical industry.
10. Mechanisms of liquid mixing.

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

(LO 4259)

FEBRUARY 2019

Sub. Code: 4259

**B.PHARM. DEGREE EXAMINATION
SECOND YEAR
PAPER IV – PHARMACEUTICAL TECHNOLOGY**

Q.P. Code: 564259

Time: Three hours

Maximum: 100 Marks

I. Elaborate on:

(2 x 20 = 40)

1. a) Explain stainless steel as materials of plant construction.
b) Write about various industrial hazards and methods to prevent it.
2. a) Construct multiple effect evaporator neatly and explain the process with its merits and demerits.
b) Explain different zone of Rotary filter.

II. Write notes on:

(8 x 5 = 40)

1. Brief with a neat diagram working of diaphragm valve.
2. Write the various filter aids with examples.
3. Swenson walker crystallizer.
4. Explain the psychrometric chart.
5. Write the mechanisms of heat transfer.
6. Construction and working of fluid energy mill.
7. Types of fractionating columns in distillation.
8. Write the theory of mixing. Note on any one equipment used in solid solid mixing.

III. Short answers on:

(10 x 2 = 20)

1. Define corrosion.
2. What is wet bulb temperature?
3. Mechanism of nucleation of crystals.
4. Write the principle of centrifugation.
5. Define Raoult's law for vapor pressure.
6. What are Azeotropes?
7. Mechanisms of size reduction.
8. What is Reynolds number?
9. Principle of working of manometer.
10. Write any two factors affecting filtration.

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

(LP 4259)

AUGUST 2019

Sub. Code: 4259

**B.PHARM. DEGREE EXAMINATION
SECOND YEAR
PAPER IV – PHARMACEUTICAL TECHNOLOGY**

Q.P. Code: 564259

Time: Three hours

Maximum: 100 Marks

I. Elaborate on:

(2 x 20 = 40)

1. a) Discuss the Mier's super-saturation theory of crystallization. What are the limitations of the Mier's theory?
b) Explain the principle, working and applications of Krystal crystallizer.
2. Explain the construction, working, advantages and disadvantages of Fluidised bed dryer.

II. Write notes on:

(8 x 5 = 40)

1. Explain the construction and working of a ball mill.
2. Describe the construction and working of a silverson mixer.
3. Describe the construction and working of leaf filters.
4. Classify industrial centrifuges. Write construction and working of a perforated basket centrifuge.
5. Write the pharmaceutical applications of distillation.
6. What are possible industrial hazards? How can they be controlled?
7. Describe various types of iron as materials of construction.
8. Explain the construction and working of a multiple effect evaporator.

III. Short answers on:

(10 x 2 = 20)

1. Define valves.
2. Mechanisms of heat transfer.
3. Define pulverisation.
4. Applications of size reduction.
5. Types of sieves.
6. Dry and wet bulb temperature.
7. Define dry distillation.
8. What is the use of florentine receiver?
9. Define slurry.
10. Define chemical Hazards.

THE TAMIL NADU Dr.M.G.R. MEDICAL UNIVERSITY

(LQ 4259)

FEBRUARY 2020

Sub. Code: 4259

**B.PHARM. DEGREE EXAMINATION
SECOND YEAR
PAPER IV – PHARMACEUTICAL TECHNOLOGY**

Q.P. Code: 564259

Time: Three hours

Maximum: 100 Marks

I. Elaborate on:

(2 x 20 = 40)

1. Define Corrosion. Explain the types of corrosion. Prevention of corrosion.
2. a) With a neat diagram explain the working of rotary filter.
b) Write about steam as heating media. Write its advantages.

II. Write notes on:

(8 x 5 = 40)

1. Write the construction and working of check valves.
2. Construction and working of differential manometer.
3. Note on edge filter.
4. Solubility curve in crystallization.
5. Applications of humidity measurement in pharmacy.
6. Construction and working of falling film evaporator.
7. Fluidized bed drying.
8. Colloidal mill.

III. Short answers on:

(10 x 2 = 20)

1. Write the grades of stainless steel.
2. What is industrial dermatitis?
3. Define viscosity.
4. Write the principle of reciprocating pump.
5. Characters of crystals.
6. What is Adiabatic cooling?
7. Define calandria.
8. What is volatility in fractionation?
9. Principle of ball mill.
10. Difference between impeller and propeller.

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[LR 1220]

DECEMBER 2020

Sub. Code: 4259

(AUGUST 2020 EXAM SESSION)

B. PHARMACY DEGREE EXAMINATION

SECOND YEAR – (Regulation from 2009-2010)

PAPER IV – PHARMACEUTICAL TECHNOLOGY

Q.P. Code: 564259

Time: Three hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate on:

(2 x 20 = 40)

1. Enumerate the various factors affecting Filtration. Discuss the construction and working of Rotary filter.
2. Describe the construction, working principle, merits and demerits of fractional Distillation.

II. Write notes on:

(8 x 5 = 40)

1. Write the factors influencing rate of corrosion.
2. Mechanical hazards.
3. What are the uses, advantages and disadvantages of fluidized bed dryer?
4. Write a note on solid – solid mixing.
5. Write note on theory of crystallization.
6. Explain the various laws of size reduction.
7. Sources of heat.
8. Types of measurement of flow of fluids.

III. Short answers on:

(10 x 2 = 20)

1. Define drying.
2. What are the disadvantages of plate and frame filter press?
3. Define valves.
4. Define centrifugation.
5. Advantage of hammer mill.
6. Lyophilisation.
7. Dehumidification and its application.
8. Define filtration.
9. Classification of Evaporators.
10. Applications of stainless steel in pharmaceutical industry.

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[BPHARM 0921]

**SEPTEMBER 2021
(FEBRUARY 2021 EXAM SESSION)**

Sub. Code: 4259

**B. PHARMACY DEGREE EXAMINATION
SECOND YEAR – (NON-SEMESTER)
PAPER IV – PHARMACEUTICAL TECHNOLOGY**

Q.P. Code: 564259

Time: Three hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate on:

(2 x 20 = 40)

1. Describe the principle, construction, working, application, merits and demerits of Freeze drying.
2. Classify Evaporators. Describe construction and working of a film evaporator.

II. Write notes on:

(8 x 5 = 40)

1. Swenson walker crystallizer.
2. Stainless steel as materials of plant construction.
3. List out types of Valves and explain any one.
4. Explain Raoult's law of distillation.
5. Solubility curve.
6. Sources of Heat.
7. Enumerate mechanism involved in size reduction with suitable examples.
8. Write a note on chemical hazards.

III. Short answers on:

(10 x 2 = 20)

1. Classify dryers.
2. Define Crystal.
3. Write advantages of glass as plant construction.
4. Triple Roller mill mechanism.
5. Filter media.
6. Steam distillation.
7. Reynolds number.
8. Define heat transfer.
9. Mechanisms of liquid mixing.
10. Define Centrifugation.

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[BPHARM 0122]

**JANUARY 2022
(AUGUST 2021 EXAM SESSION)**

Sub. Code: 4259

**B.PHARMACY DEGREE COURSE (NON-SEMESTER EXAMINATIONS)
SECOND YEAR (Regulation 2009-2010)
PAPER IV – PHARMACEUTICAL TECHNOLOGY**

Q.P. Code: 564259

Time: Three hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate on:

(2 x 20 = 40)

1. a) Explain the theory of Centrifugation. Add a note on factors affecting Centrifugation.
b) Elaborate on the construction, working and advantages of continuous horizontal Centrifuge.
2. Describe the principle and working of fractional distillation apparatus with the help of phase diagram.

II. Write notes on:

(8 x 5 = 40)

1. Explain the different mechanisms of size reduction.
2. Write in detail about the construction and working of planetary mixer.
3. Give the significance of Reynolds number.
4. Describe in detail about the theory of Crystallization.
5. Write a note on Solubility curve.
6. With the help of neat diagram explain the construction and working of VENTURI meter.
7. What are heat exchangers and interchangers?
8. Write note on different mechanisms of heat transfer.

III. Short answers on:

(10 x 2 = 20)

1. What is Mohs scale?
2. Define flash point.
3. Give the advantages of spray drier.
4. List out the applications of glass in pharmaceutical industry.
5. What is diffusive mixing?
6. Define Grey body.
7. What is Pressure head?
8. Define coarse powder.
9. Dew point.
10. Elutriation.

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[BPHARM 0522]

**MAY 2022
(FEBRUARY 2022 EXAM SESSION)**

Sub. Code: 4259

**B. PHARMACY DEGREE EXAMINATION
SECOND YEAR – (NON-SEMESTER)
PAPER IV – PHARMACEUTICAL TECHNOLOGY**

Q.P. Code: 564259

Time: Three hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate on:

(2 x 20 = 40)

1. Explain the Corrosion. Add a note on types of corrosion. Elaborate on the prevention of corrosion.
2. Describe the principle, construction, working, application, merits and demerits of Freeze drying.

II. Write notes on:

(8 x 5 = 40)

1. Explain the Sources of Heat.
2. Write in detail about the Swenson walker crystallizer.
3. Give the significance of Reynolds number.
4. Describe in detail about the theory of Crystallization.
5. Write a note on edge filter.
6. With the help of neat diagram explain the construction and working of VENTURI meter.
7. What are heat exchangers and interchangers?
8. Write note on colloidal mill.

III. Short answers on:

(10 x 2 = 20)

1. What is Filter media?
2. Define centrifugation.
3. Give the advantages of spray drier.
4. List out the applications of glass in pharmaceutical industry.
5. What is diffusive mixing?
6. Define Grey body.
7. What is Pressure head?
8. Define coarse powder.
9. Steam distillation.
10. Elutriation.

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[BPHARM 1022]

**OCTOBER 2022
(AUGUST 2022 EXAM SESSION)**

Sub. Code: 4259

**B.PHARMACY DEGREE COURSE (NON-SEMESTER EXAMINATIONS)
SECOND YEAR (Regulation 2009-2010)
PAPER IV – PHARMACEUTICAL TECHNOLOGY**

Q.P. Code: 564259

Time: Three hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate on:

(2 x 20 = 40)

1. Derive Bernoulli's equation and add a note on its assumptions.
2. Describe the principle, construction, working, application, merits and demerits of Freeze drier.

II. Write notes on:

(8 x 5 = 40)

1. Explain the construction and working of silverson mixer emulsifier.
2. Draw a neat labelled diagram of floating head two pass heater and explain its working.
3. Write a note on principle and working of sieve shaker.
4. Write in detail about the Swenson walker crystallizer.
5. Explain the construction and working of Fluidised bed dryer.
6. Describe the principle and working of hammer mill.
7. Explain the principle and working of drum dryer.
8. Write about construction and working of perforated basket centrifuge.

III. Short answers on:

(10 x 2 = 20)

1. What is centrifugation?
2. Define corrosion.
3. What is latent heat?
4. Define free moisture content.
6. What are standard sieves?
7. What is convection?
8. Write about calendria.
9. Define moderately course powder.
10. What is lyophilisation?

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[B.PHARM 0323]

**MARCH 2023
(FEBRUARY 2023 EXAM SESSION)**

Sub. Code: 4259

**B.PHARMACY DEGREE COURSE (NON-SEMESTER EXAMINATIONS)
SECOND YEAR (Regulation 2009-2010)
PAPER IV – PHARMACEUTICAL TECHNOLOGY**

Q.P. Code: 564259

Time: Three hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate on:

(2 x 20 = 40)

1. Describe the principle and working of fractional distillation apparatus with the help of phase diagram.
2. Describe the mechanism of size reduction. Write the principle, construction and working of Fluid energy mill.

II. Write notes on:

(8 x 5 = 40)

1. Write the various filter aids with examples.
2. Explain glass as materials of plant construction.
3. Write note on theory of centrifugation.
4. Explain in brief about construction and working of falling film evaporator.
5. Explain the construction and working of venturi meter with the help of neat diagram.
6. Describe the construction and working of membrane filter.
7. Write a note on Humidity chart.
8. Explain the construction and working of simple distillation.

III. Short answers on:

(10 x 2 = 20)

1. What is Moh's scale?
2. State kick's law.
3. Define black body.
4. What is convective mixing?
5. Define corrosion.
6. Define elutriation.
7. What is evaporation?
8. What are bound and unbound moisture?
9. Define filter aids.
10. What is radiation?

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[B.PHARM 0823]

AUGUST 2023

Sub. Code: 4259

**B.PHARMACY DEGREE COURSE (NON-SEMESTER EXAMINATIONS)
SECOND YEAR (Regulation 2009-2010)
PAPER IV – PHARMACEUTICAL TECHNOLOGY**

Q.P. Code: 564259

Time: Three hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate on:

(2 x 20 = 40)

1. Explain the construction, working, advantages and disadvantages of filter press and filter leaf.
2. Describe the construction, working, advantages and disadvantages of colloidal mill and fluid energy mill.

II. Write notes on:

(8 x 5 = 40)

1. Theories of Filtration.
2. Factors influencing evaporation.
3. Write a note on cyclone separator.
4. Write note on theory of crystallization.
5. Spray dryer.
6. Advantages of size reduction.
7. Sigma blade mixer.
8. Simple distillation.

III. Short answers on:

(10 x 2 = 20)

1. Advantages of plastics?
2. Types of crystals.
3. Prevention of Fire hazards.
4. Define humidity.
5. Calendria.
6. Raoult's Law
7. Multiple effect evaporator.
8. Convection.
9. Equilibrium moisture content.
10. Mechanism of Ball mill.

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[B.PHARM 0524]

**MAY 2024
(FEBRUARY 2024 EXAM SESSION)**

Sub. Code: 4259

**B.PHARMACY DEGREE COURSE (NON-SEMESTER EXAMINATIONS)
SECOND YEAR (Regulation 2009-2010)
PAPER IV – PHARMACEUTICAL TECHNOLOGY**

Q.P. Code: 564259

Time: Three hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate on:

(2 x 20 = 40)

1. Discuss in detail the different methods of determination of humidity. Add a note on dehumification.
2. Describe the mechanism of size reduction? Write the principle, construction and working of Fluid energy mill.

II. Write notes on:

(8 x 5 = 40)

1. Write in detail about the construction and working of planetary mixer.
2. Explain Stainless steel as materials of plant construction.
3. Write note on theory of crystallization.
4. Explain in brief about construction and working of spray dryer.
5. Explain the construction and working of Ball mill.
6. Describe the construction and working of tube and shell heat exchanger.
7. Discuss the construction and working of leaf filters.
8. Write about principle of working of Cyclone separator.

III. Short answers on:

(10 x 2 = 20)

1. What is Reynold's number?
2. State bonds law.
3. Define grey body.
4. What is centrifugation?
5. State kick's law.
6. Define convection.
7. What is flash's point?
8. What is Equilibrium moisture content?
9. Caking of crystals.
10. Define distillation.

B. PHARMACY DEGREE COURSE (NON-SEMESTER EXAMINATIONS)
SECOND YEAR (Regulation 2009-2010)
PAPER IV – PHARMACEUTICAL TECHNOLOGY

Q.P. Code: 564259

Time: Three hours

Answer ALL questions

Maximum: 100 Marks

I. Elaborate on:

(2 x 20 = 40)

1. Explain in detail different types of flow. Describe the principle, construction and working of venture meter.
2. Define Distillation. List various types of distillation and explain any one type of distillation.

II. Write notes on:

(8 x 5 = 40)

1. Explain Fourier's law and its application.
2. Define centrifugation. Explain Super centrifuge.
3. Explain construction and working of hammer mill.
4. Explain construction and working of a triple roller mill.
5. Theory of mixing. Explain solid mixing.
6. Explain construction and working of a Silverson mixer.
7. Climbing film evaporators.
8. Name types of driers and describe any one.

III. Short answers on:

(10 x 2 = 20)

1. Define sublimation.
2. Fractional distillation.
3. Types of manometers.
4. Principle of evaporation.
5. Define lyophilization.
6. Define conduction.
7. Define slurry.
8. Types of sieves.
9. Define chemical Hazards.
10. Define viscosity.
