

DEPTH OF BIOLOGY

B. PHARMACY

3 SEM IMPORTANT QUESTIONS

**PHARMACEUTICAL
ENGINEERING**

UNIT-I

10 Hours

- **Flow of fluids:** Types of manometers, Reynolds number and its significance, Bernoulli's theorem and its applications, Energy losses, Orifice meter, Venturimeter, Pitot tube and Rotometer.
- **Size Reduction:** Objectives, Mechanisms & Laws governing size reduction, factors affecting size reduction, principles, construction, working, uses, merits and demerits of Hammer mill, ball mill, fluid energy mill, Edge runner mill & end runner mill.
- **Size Separation:** Objectives, applications & mechanism of size separation, official standards of powders, sieves, size separation Principles, construction, working, uses, merits and demerits of Sieve shaker, cyclone separator, Air separator, Bag filter & elutriation tank.

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10 MARKS

Q1. Write a short on size reduction [mechanism, law and factors affecting] & also explain edge runner mill?

5 MARKS

Q1. Explain Reynold number & its significance.

Q2. Explain hammer mill

Q3. Explain edge & end runner mill

Q4. Write down the principle, construction, working, uses, merits & demerits of sieve shaker

Q5. Explain Bernoulli's theorem

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2 MARKS

Q1. Explain manometer

Q2. Define Reynold`s number

Q3. Define Bernoulli`s theorem

UNIT-II

10 Hours

- **Heat Transfer:** Objectives, applications & Heat transfer mechanisms. Fourier's law, Heat transfer by conduction, convection & radiation. Heat interchangers & heat exchangers.
- **Evaporation:** Objectives, applications and factors influencing evaporation, differences between evaporation and other heat process. principles, construction, working, uses, merits and demerits of **Steam jacketed kettle**, horizontal tube evaporator, climbing film evaporator, forced circulation evaporator, multiple effect evaporator & Economy of multiple effect evaporator.
- **Distillation:** Basic Principles and methodology of simple distillation, flash distillation, fractional distillation, distillation under reduced pressure, steam distillation & molecular distillation

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10 MARKS

Q1. Write down a short note on heat transfer [conduction, convection & radiation]. Explain fourier's law

5 MARKS

Q1. Explain the principle , construction, working, uses , merits & demerits of steam jacketed kettle

Q2. Define distillation & explain molecular distillation

Q3. Explain the principle , construction, working, uses , merit & demerits of multiple effect evaporation

Q4. Write a short note on heat interchanger & heat exchanger

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2 MARKS

Q1. Explain distillation

Q2. Define evaporation

Q3. Explain Heat transfer

UNIT- III

08 Hours

- **Drying:** Objectives, applications & mechanism of drying process, measurements & applications of Equilibrium Moisture content, rate of drying curve. principles, construction, working, uses, merits and demerits of Tray dryer, drum dryer spray dryer, fluidized bed dryer, vacuum dryer, freeze dryer.
- **Mixing:** Objectives, applications & factors affecting mixing, Difference between solid and liquid mixing, mechanism of solid mixing, liquids mixing and semisolids mixing. Principles, Construction, Working, uses, Merits and Demerits of Double cone blender, twin shell blender, ribbon blender, Sigma blade mixer, planetary mixers, Propellers, Turbines, Paddles & Silverson Emulsifier,

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10 MARKS

Q1. Write down the objective, application & mechanism of drying process, also explain fluidized bed dryer

Q2. Define mixing & its application & factor affecting of drying process. Also explain planetary mixer

5 MARKS

Q1. Write down the construction, working, merits & demerits of tray dryer

Q2. Sigma blade mixture?

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2 MARKS

Q1. Define mixing.

Q2. Define drying

UNIT-IV

08 Hours

- **Filtration:** Objectives, applications, Theories & Factors influencing filtration, filter aids, filter medias. Principle, Construction, Working, Uses, Merits and demerits of plate & frame filter, filter leaf, rotary drum filter, Meta filter & Cartridge filter, membrane filters and Seidtz filter.
- **Centrifugation:** Objectives, principle & applications of Centrifugation, principles, construction, working, uses, merits and demerits of Perforated basket centrifuge, Non-perforated basket centrifuge, semi continuous centrifuge & super centrifuge.

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10 MARKS

Q1. Define filtration & factors affecting it

Q2. Define centrifugation, its principle & application

5 MARKS

Q1. Explain the theories of filtration

Q2. Explain perforated & non-perforated centrifuge

2 MARKS

Q1. Explain filter aid

Q2. Define filter media

UNIT- V

07 Hours

- **Materials of pharmaceutical plant construction, Corrosion and its prevention:** Factors affecting during materials selected for Pharmaceutical plant construction, Theories of corrosion, types of corrosion and there prevention. Ferrous and nonferrous metals, inorganic and organic non metals, basic of material handling systems.

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10 MARKS

Q1. Write a short note on material on pharmaceutical plant construction

Q2. Define corrosion & its method of prevention

5 MARKS

Q1. Explain theories of corrosion

Q2. Explain ferrous & non-ferrous metals

Q3. Describe inorganic & organic non metal

DEPTH OF BIOLOGY

2 MARKS

Q1. Define corrosion

Q2. Write method to prevent corrosion