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BP 304 T

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**II/IV B. PHARMACY (Supple) DEGREE EXAMINATIONS,
NOVEMBER-2022**

**Third Semester
PHARMACEUTICAL ENGINEERING - THEORY**

Time : Three Hours

Maximum : 75 Marks

SECTION - A

Answer any FIVE Questions.

5x10 = 50 M

1. Discuss different types of Manometers and add a note on their applications.
2. Explain various grades of powders official in pharmacopoeia. Write the principle, construction, working, merits and demerits of Cyclone Separator.
3. Describe Fourier's law of heat transmission. Discuss the working of liquid heat interchanger with neat labelled diagram.
4. Write a note on a) Vacuum dryer (ii) Silverson Emulsifier.
5. Describe various factors affecting filtration and explain principle, construction and working of Rotary drum filter.
6. a) Describe various types of Iron as materials of construction.
a) Write a note on different types of glass, their composition and uses.
7. Explain the principle, construction, working and advantages of climbing film evaporator with neat labelled diagram.

SECTION - B

Answer any FIVE Questions.

5x5 = 25 M

8. Explain various laws governing size reduction.
9. Describe the principle and methodology of Flash distillation.
10. Explain drying rate curve.
11. Write a note on twin shell blender and double cone blender.
12. Describe the principle, construction and working of super centrifuge.
13. Write a note on various types of corrosion and briefly outline preventive methods.
14. Describe Reynold's classic experiment elucidating different types of flow patterns and discuss the significance of Reynold's number.



II/IV B. PHARMACY DEGREE EXAMINATIONS, JUNE / JULY -2022**Third Semester****PHARMACEUTICAL ENGINEERING - THEORY**Time : **Three Hours**Maximum : **75 Marks****SECTION - A****Answer any FIVE Questions.****5x10 = 50 M**

1. Discuss different types of Manometers and add a note on applications of Venturimeter.
2. Write a note on Forced circulation evaporation and steam distillation.
3. Describe the principles, construction, working, merits and demerits of Tray dryer and vaccum dryer.
4. Discuss the factors affecting mixing and add a note on Ribbon blender and sigma blade mixer.
5. Write the principle, construction, working and advantages of
 - a) Catridge filter.
 - b) Semi-continuous centrifuge.
6. Write a note on utility and various types of Glass and Steel in pharmaceutical industry.
7. Write an equation for heat transfer by conduction through compound resistance in series and discuss the applications of heat transfer.

SECTION - B**Answer any FIVE Questions.****5x5 = 25 M**

8. Describe the principle, construction and working of End Runner Mill.
9. Discuss the mechanisms of size separation and add a note on different types of sieves.
10. Give a brief outline on Freeze dryer with the help of a diagram.
11. What do you mean by filter aids and filter media ? Write a brief note on various types of filter aids and filter media used in filtration in pharmaceutical industries.
12. Write a short note on chemical reaction related corrosion.
13. Sketch the diagram of super centrifuge and explain its principle and construction.
14. Write a note on Turbines and Paddles used in Mixing.

II/IV B.PHARMACY (Supply) DEGREE EXAMINATIONS, OCTOBER-2020

Third Semester

B.Pharmacy

PHARMACEUTICAL ENGINEERING-Theory

Time: Three Hours

Maximum marks:75

SECTION-A

Answer any FIVE Questions.

5X10=50M

1. a) Write Bernouli's equation & explain the symbols used with the help of labelled diagram.
b) Discuss in brief about energy losses in fitting of pipeline?
2. a) Discuss about objectives & mechanism of size reduction?
b) Write about principle construction & working of fluid energy null?
3. Describe the construction, operation, advantages and disadvantages of multipass heater?
4. Describe basic principles & methodology of Fractional distillation & add a note on fractionating columns?
5. Outline the objectives of mixing? Describe construction, working, uses, merits & demerits of silverson emulsifier?
6. Discuss about construction & working of following
 - a) Perforated basket centrifuge
 - b) Non Perforated basket centrifuge
7. Describe the following:
 - a) Types of corrosion
 - b) Ferrrous & Non ferrous metals.

P.T.O

SECTION-B

5X5=25M

Answer any FIVE Questions.

8. Discuss about construction & working of orifice meter?
9. a) Outline the differences between evaporation & other heat processes?
b) Write about factors influencing evaporation?
10. Write principle and construction of Traydryer with the help of neat sketch?
11. Give a note on objectives & applications of filtration?
12. Classify materials used for construction and add a note on inorganic & organic metals?
13. Mention official standards of powders & sieves and add a note on objectives of size separation?
14. Write construction & working of Ball mill?



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II/IV B.PHARMACY (Regular) DEGREE EXAMINATIONS, DEC-2019/JAN-2020

Third Semester

B.PHARMACY

PHARMACEUTICAL ENGINEERING-Theory

Time: Three Hours

Maximum marks:75

SECTION-A

Answer any FIVE Questions

5X10=50M

1. Discuss the characteristics of different types of flow. Add a note on Reynolds number and its significance.
2. Explain various grades of powders official in pharmacopoeia. Write a note on principle and working of cyclone separator.
3. Derive an equation for heat transmission through a circular pipe from Fourier's law.
4. Describe the process of Fractional distillation and write about various fractionating columns.
5. Discuss the equipment used for solid-solid mixing of pharmaceutical materials.
6. Write the principle and applications of centrifugation. Add a note on construction and working of super centrifuge.
7. Give an account on various factors affecting during materials selected for pharmaceutical plant construction.

SECTION-B

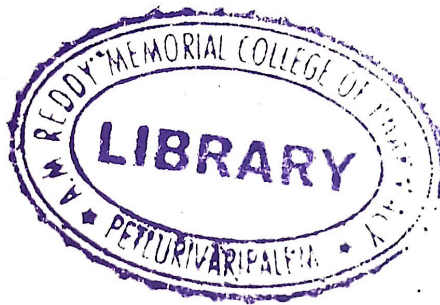
Answer any FIVE Questions

5X5=25M

8. Write a note on laws governing size reduction.
9. Explain the principle and working of climbing film evaporator.
10. Describe the drying rate curve and mention its applications.

P.T.O

11. Write the construction and working of pitot tube with a neat labelled sketch.
12. Explain the factors influencing filtration.
13. Write a brief note on Propellers and Paddles.
14. Describe stainless steel as a material of plant construction.



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II/IV B.PHARMACY (Supply) DEGREE EXAMINATIONS, AUGUST-2019

Third Semester

B.Pharmacy

PHARMACEUTICAL ENGINEERING-Theory

Time: Three Hours

Maximum marks:75

SECTION-A

Answer any FIVE Questions.

5X10=50M

1. Derive Bernoulli's equation and write its applications.
2. Explain the mechanisms of size reduction. Give the principle and working of Fluid energy mill.
3. State Fourier's Law and explain the mechanism of heat transfer.
4. Explain the principle, construction, working, uses, merits and demerits of Fluidized bed dryer with the help of neat labelled diagram.
5. Write the factors affecting mixing and difference between solid and liquid mixing. Add a note on principle and working of Double cone blender.
6. Discuss the principle, working and applications of super centrifuge and semi-continuous centrifuge.
7. Define corrosion and discuss theories and types of corrosion.

SECTION-B

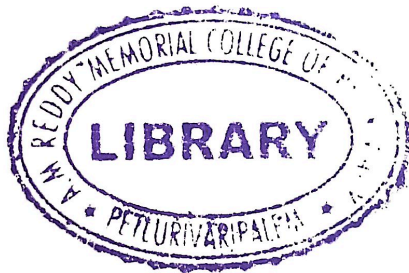
Answer any FIVE Questions.

5X5=25M

8. Explain the principle and working of Venturimeter with the help of neat sketch.
9. Write the official standards of powders.
10. Outline the applications and factors influencing evaporation.
11. What is drying curve and explain various stages in drying curve.

P.T.O

12. Write the principle, working and advantages of silverson-emulsifier.
13. Outline the factors influencing filtration and add a note on filter leaf.
14. Give a short note on Ferrous and non Ferrous metals used for Pharmaceutical plant construction.



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II/IV B.PHARMACY (Regular) DEGREE EXAMINATIONS, FEB-2019

Third Semester

B.PHARMACY

PHARMACEUTICAL ENGINEERING

Time: Three Hours

Maximum marks:75

SECTION-A

Answer any FIVE Questions

5X10=50M

1. Discuss the principle, construction, working and applications of Orifice meter with the help of a neat labelled diagram.
2. Write the laws governing size reduction and add a note on principle, working and advantages of Ball mill.
3. Discuss the applications of heat transfer and enumerate the heat transfer mechanism by convection.
4. Enumerate the principle and methodology of steam distillation and Molecular distillation.
5. Discuss the principle, construction, working, merits and demerits of Vacuum dryer using a neat labelled figure.
6. Describe theories and factors affecting filtration. Explain seitz filter with merits and demerits.
7. Discuss various factors affecting during materials selected for pharmaceutical plant construction.

SECTION-B

Answer any FIVE Questions

5X5=25M

8. Write a note on Reynold's number with its significance.
9. Explain the principle and working of cyclone separator.

P.T.O

10. Write the principle, merits and demerits of climbing film evaporator.
11. Describe the principle and advantages of silverson-emulsifier.
12. Define loss on drying, equilibrium moisture content and Drying curve.
13. Explain the principle and working of Perforated basket centrifuge with the help of a neat sketch.
14. Outline the types of corrosion and their prevention.



SECTION-A

Answer any FOUR Questions

4X10=40M

1. Write about the factors influencing the wet bulb temperature and explain the use of humidity chart.
2. Give the classification of materials of pharmaceutical plant construction and write about the different steels used in pharmaceutical industry.
3. Write in detail about the factors influencing the size reduction. Explain the working of fluid energy mill and mention its advantages.
4. Name the hydrodynamic methods for measurement of fluid flow. Explain the working of venturimeter and rotameter.
5. Discuss the factors influencing the powder mixing? What is the significance of solid-solid mixing in pharmacy?
6. Give the differences between laboratory scale, pilot scale and industrial scale. Write about the stages in pilot scale.

SECTION-B

Answer any TEN Questions

10X3=30M

7. Define the terms humidity, relative humidity.
8. Write the significance of mixing index.
9. Write the comparisons between gate valve and diaphragm valve.
10. Write about prevention of fire accidents in pharmaceutical industry.
11. Mention the drawbacks of vortex formation and suggest methods for its prevention.
12. What is corrosion and name the methods for combating corrosion.

P.T.O

13. Suggest suitable size reduction equipment for elastic material with valid reasoning.
14. Write the applications of humidification in pharmaceutical industry.
15. Explain the working of bucket elevators.
16. Write about dimensional analysis
17. Explain why Reynold's number is dimensionless number.
18. Name the forces responsible for size reduction and give suitable examples.



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II/IV B.PHARMACY DEGREE EXAMINATIONS, JAN-2017

Third Semester

B.PHARMACY

PHARMACEUTICAL ENGINEERING-I

Time: Three Hours

Maximum marks:70

SECTION-A

Answer any FOUR Questions

4X10=40M

1. Give the classification of corrosion and enumerate the factors influencing corrosion and methods for its prevention.
2. Describe the working of V-cone blender and rotocube mixer and mention their advantages.
3. Explain the working of cooling towers.
4. Give the classification of different pumps used for transportation of liquids. Describe the working of a self priming pump.
5. Explain the working principle of ball mill and mention its advantages. What is critical speed and what is its significance?
6. Give the classification of equipment used for transportation of solids and explain the working of bucket elevator. Mention its advantages.

SECTION-B

Answer any TEN Questions

10X3=30M

7. Write about the mixing of semisolids.
8. Describe the working principle of cyclone separator and mention its advantages.
9. Write about different impellers suitable for liquid mixing.
10. How the chemical hazards in pharmaceutical industry are prevented?
11. What are the differences between screw and pneumatic conveyors?
12. What are the advantages of glass over other materials?
13. Suggest suitable size reduction equipment with its principle of working for thermolabile drug.
14. What is air binding and how it can be prevented?
15. Write about the working of inclined manometer.
16. Define humid heat and dew point and mention their significance.
17. Write Bernoulli's equation and mention the significance of different heads.
18. Write the salient differences between laboratory scale and pilot scale.

Total No. of Questions :18]

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II/IV B.PHARMACY DEGREE EXAMINATIONS, DECEMBER-2016

Third Semester

PHARMACEUTICAL ENGINEERING-I

Time: Three Hours

Maximum marks:70

SECTION-A

Answer any FOUR questions. (4 x 10=40 M)

1. Write about the factors influencing the powder mixing? What is the significance of solidsolid mixing in pharmacy?
2. Enumerate the methods available for dehumidification. What is its importance in pharmacy?
3. Explain the working of venturimeter and rotameter.
4. Write in detail about the factors influencing the size reduction. Explain the working of fluid energy mill and mention its advantages.
5. a) Write the differences between pilot scale and industrial scale operations.
b) Give the classification of different types of pumps.
6. Give the classification of materials of pharmaceutical plant construction and discuss about the use of non metals.

SECTION-B

Answer any TEN questions. (10 x 3=30 M)

7. Define the terms humidity, relative humidity, humid heat.
8. What is mixing index and mention its use.
9. Suggest suitable size reduction equipment for fibrous material with valid reasoning.
10. Why Reynolds number is called as dimensionless number? Mention its application.
11. Write about prevention of fire accidents in pharmaceutical industry.
12. Compare globe valve and gate valve.
13. Define Kick's law and mention its significance.
14. What is corrosion and name the methods for combating corrosion.
15. Write the applications of humidity chart?
16. Explain the working of bucket elevators.
17. What are the drawbacks of vortex formation and suggest methods for its prevention.
18. Write about dimensional analysis.

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II/IV B.PHARMACY DEGREE EXAMINATIONS, JAN/FEB- 2016

Third Semester

PHARMACEUTICAL ENGINEERING-I

Time: Three Hours

Maximum marks:70

SECTION-A

Answer any FOUR questions.

4X10=40M

1. Explain the working of a refrigeration system using compressor.
2. Give the classification of materials of pharmaceutical plant construction and write about the use of non-metals.
3. Write in detail about the factors influencing the size reduction. Explain the working of fluid energy mill and mention its advantages.
4. Name the hydrodynamic methods for measurement of fluid flow. Explain the working of venturimeter and rotameter.
5. Discuss the factors influencing the powder mixing? What is the significance of solid-solid mixing in pharmacy?
6. Differentiate between laboratory scale, pilot scale and industrial scale. What factors will influence the scale up process.

SECTION-B

Answer any TEN questions.

10X3=30M

7. Define the terms humidity, relative humidity, and dew point.
8. What is mixing index and mention its use.
9. Compare gate valve and diaphragm valve.
10. Define Kick's law and Rittinger's law.
11. What are the drawbacks of vortex formation and suggest methods for its prevention.
12. What is corrosion and name the methods for combating corrosion.
13. Suggest suitable size reduction equipment for fibrous material with valid reasoning.
14. What are the applications of humidity chart?
15. Explain the working of bucket elevators.
16. Write about dimensional analysis.
17. Why Reynolds number is called as dimensionless number? Mention its significance.
18. Write the reasons for restricting the use of asbestos in pharmaceutical industries.

SECTION-A

Answer any FIVE Questions

5X10=50M

1. Discuss the characteristics of different types of flow. Add a note on Reynolds number and its significance.
2. Explain various grades of powders official in pharmacopoeia. Write a note on principle and working of cyclone separator.
3. Derive an equation for heat transmission through a circular pipe from Fourier's law.
4. Describe the process of Fractional distillation and write about various fractionating columns.
5. Discuss the equipment used for solid-solid mixing of pharmaceutical materials.
6. Write the principle and applications of centrifugation. Add a note on construction and working of super centrifuge.
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SECTION-B

Answer any FIVE Questions

5X5=25M

8. Write a note on laws governing size reduction.
9. Explain the principle and working of climbing film evaporator.
10. Describe the drying rate curve and mention its applications.

11. Write the construction and working of pitot tube with a neat labelled sketch.
12. Explain the factors influencing filtration.
13. Write a brief note on Propellers and Paddles.
14. Describe stainless steel as a material of plant construction.

