JHARKHAND Rai University RANCHI

PRACTICE SET FOR SUBJECTIVE QUESTIONS
End Semester (III Semester) Examination

Program: B. Pharm

Subject: Pharmaceutical Engineering

Subject Code: BP304T

Unit I			
S No.	**Questions**	**CO**	**Bloom's Taxonomy Level**
Section II			**Questions for 5 marks**
1	Define Reynolds number and explain its significance in fluid flow.	CO1	Remember
2	State Bernoulli's theorem and mention any two applications in pharmacy	CO1	Understand
3	Differentiate between laminar and turbulent flow.	CO1	Understand
4	Define size reduction and state its main objectives in pharmaceutical processing	CO1	Remember
5	Write the laws governing size reduction (Kick's, Rittinger's, Bond's).	CO1	Remember
6	Explain the working and uses of sieve shaker in particle size analysis.	CO1	Apply
7	Describe the principle and construction of a cyclone separator.	CO1	Understand
Section III			**Questions for 10 marks**
8	Compare the construction, working, and efficiency of Ball Mill and Hammer Mill.	CO1	Analyze
9	Design a simple experimental setup to determine the flow rate of a liquid using Bernoulli's principle.	CO1	Create
10	Evaluate the advantages and limitations of fluid energy mill over ball mill.	CO1	Evaluate
Unit II			
S No.	**Questions**	**CO**	**Bloom's Taxonomy Level**
Section II			**Questions for 5 marks**
11	Mention the three mechanisms of heat transfer with one example of each.	CO2	Understand
12	List four factors influencing the rate of evaporation.	CO2	Remember
13	Explain the principle and working of a steam jacketed kettle.	CO2	Understand
14	Define distillation and state its main applications in pharmacy.	CO2	Remember
15	Explain the need for vacuum (reduced pressure) in distillation processes.	CO2	Apply
16	Define heat transfer and list its main objectives in pharmaceutical processes.	CO2	Remember
17	Describe the construction and working of a heat exchanger.	CO2	Understand

Section III			Questions for 10 marks
18	A drug decomposes at high temperature — which type of distillation would you choose and why?	CO2	Evaluate
19	Evaluate the efficiency of different heat exchangers used in pharmaceutical industries.	CO2	Evaluate
20	Compare the advantages and disadvantages of horizontal tube and climbing film evaporators.	CO2	Analyze
Unit III			
S No.	**Questions**	**CO**	**Bloom's Taxonomy Level**
Section II			**Questions for 5 marks**
21	Define drying and mention its objectives in pharmaceutical manufacturing.	CO3	Remember
22	What is equilibrium moisture content? Why is it important?	CO3	Understand
23	Write short notes on freeze drying and its advantages.	CO3	Remember
24	Define mixing and list the factors affecting mixing efficiency.	CO3	Remember
25	Explain the working of a double cone blender.	CO3	Apply
26	Explain the role of propellers and turbines in liquid mixing.	CO3	Understand
27	Write short notes on sigma blade mixer and planetary mixer.	CO3	Remember
Section III			**Questions for 10 marks**
28	Suggest suitable drying equipment for heat-sensitive antibiotics, giving reasons.	CO3	Analyze
29	Compare the tray dryer and fluidized bed dryer in terms of efficiency and suitability.	CO3	Analyze
30	Analyze the advantages and limitations of ribbon blender vs. twin shell blender.	CO3	Analyze
Unit IV			
S No.	**Questions**	**CO**	**Bloom's Taxonomy Level**
Section II			**Questions for 5 marks**
31	Define filtration and state its objectives in pharmaceutical processes.	CO4	Remember
32	Mention two important applications of filtration in pharmacy.	CO4	Remember
33	List any four factors influencing filtration.	CO4	Remember
34	Explain the working of a perforated basket centrifuge.	CO4	Understand
35	Write short notes on filter media used in pharmaceutical filtration.	CO4	Understand
36	State the principle and working of a rotary drum filter.	CO4	Understand
37	Describe the advantages and disadvantages of a cartridge filter.	CO4	Apply
Section III			**Questions for 10 marks**
38	Analyze the difference between perforated and non-perforated basket centrifuges.	CO4	Analyze
39	Evaluate the advantages and limitations of perforated basket centrifuge for continuous production.	CO4	Evaluate
40	Compare plate and frame filter with rotary drum filter in terms of operation and efficiency.	CO4	Analyze
Unit V			
S No.	**Questions**	**CO**	**Bloom's Taxonomy Level**
Section II			**Questions for 5 marks**

41	Define pharmaceutical plant materials and list their objectives of selection.	CO5	Remember
42	Mention the factors affecting material selection in pharmaceutical plant construction.	CO5	Remember
43	Explain the theories of corrosion (briefly).	CO5	Understand
44	Describe preventive measures for corrosion in pharmaceutical plants.	CO5	Understand
45	State the advantages of inorganic and organic non-metals in plant construction.	CO5	Remember
46	Define corrosion and mention its effects on pharmaceutical equipment.	CO5	Remember
47	Describe the role of environmental factors (temperature, pH, moisture) in corrosion.	CO5	Understand
Section III			**Questions for 10 marks**
48	Compare ferrous and non-ferrous metals in terms of corrosion resistance and cost.	CO5	Analyze
49	Analyze how environmental conditions influence the type of corrosion observed in plant equipment.	CO5	Analyze
50	Suggest a material selection strategy for acid-handling equipment in pharmaceutical plants.	CO5	Evaluate

Course Outcome (CO): On the successful completion of the Course, students will be able to:-

CO1	Identify the various unit operations used in pharmaceutical industries and to assess the material handling techniques
CO2	Demonstrate the various processes involved in pharmaceutical manufacturing process for Heat transfer, equipment's used for evaporation and Distillation and its purpose.
CO3	Demonstrate the various processes involved in pharmaceutical manufacturing process for Drying and mixing and the execution process of the equipment.
CO4	Demonstrate the various test to prevent environmental pollution through filtration process and Centrifugation process by handling equipment's of different methods.
CO5	Compile the comprehend significance of plant lay out design for optimum. Demonstrate the various preventive methods used for corrosion control in pharmaceutical industries.

Summary Sheet

CO Wise

CO	Q. No	Marks
CO1	1, 2, 3, 4, 5, 6, 7, 8, 9, 10	65
CO2	11, 12, 13, 14, 15, 16, 17, 18, 19, 20	65
CO3	21, 22, 23, 24, 25, 26, 27, 28, 29, 30	65
CO4	31, 32, 33, 34, 35, 36, 37, 38, 39, 40	65
CO5	41, 42, 43, 44, 45, 46, 47, 48, 49, 50	65
Total		**325**

Unit Wise

Unit	Q. No	Marks
Unit 1	1, 2, 3, 4, 5, 6, 7, 8, 9, 10	65
Unit 2	11, 12, 13, 14, 15, 16, 17, 18, 19, 20	65

Unit 3	21, 22, 23, 24, 25, 26, 27, 28, 29, 30	65
Unit 4	31, 32, 33, 34, 35, 36, 37, 38, 39, 40	65
Unit 5	41, 42, 43, 44, 45, 46, 47, 48, 49, 50	65
Total		**325**

Blooms Taxonomy Level (BTL) Wise

BTL	Q. No	Marks
LOT	1, 2, 3, 4, 5, 6, 7, 11 12 13 14 15 16 17, 21, 22, 23, 24, 25, 26, 27, 31, 32, 33, 34, 35, 36, 37, 41, 42, 43, 44, 45, 46, 47	175
HOT	8, 9, 10, 18, 19, 20, 28, 29, 30, 38, 39, 40, 48, 49, 50	150
Total		**325**

Note: All questions from **Section II** will be considered as **LOT.**
All questions from **Section III** will be considered as **HOT.**

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Disclaimer: -This is a Practice Set. The Question in End term examination will differ from the Practice Set. This Practice Set is meant for practice only.