

Department of Pharmaceutical Technology
Kolkata-700032.

B.Pharm/ 2nd year/ 3rdSem/Time 3 hrs/ FM 75/ 2024-25

Course: Pharm. Engineering

Code: BP 304T

Q1. Answer the following questions. (All are compulsory) 10x2M=20 Marks

- a. Classify powder as per IP.
- b. Define impact and attrition.
- c. Enlist the factors affecting size reduction.
- d. Write the pore size of sieve no. 22 and 60.
- e. Define fluidized state of powder in FBD.
- f. Name three heat exchangers.
- g. Why is simple distillation not always very effective for separation?
- h. Explain Raoult's law
- i. Discuss the differences between solid mixing and liquid mixing.
- j. How are mixing index values used to know mixing homogeneity?

Long Answer Questions 2 x 10Marks = 20Marks

(Answer 2 out of 3)

Q2. A layer of brick (6 inch thick) is used as layer of thermal insulation in a wall. The temperature at the hot side is 180°F and the temperature at cold side is 40°F. Thermal conductivity of the Wall is 0.026 BTU/ft.h°F. What is the rate of heat flow through the wall in BTU/hour?The area of the wall is 25 ft².

Q3. Explain drying theory with rate curve, EMC, Bound water and free moisture content (with diagram).

Q4. Write about the principle, construction, working, use, merits, and demerits (with diagram) of the freeze dryer.

Short Answer Question 7 x 5 Marks = 35 Marks

(Answer 7 out of 9)

Q5. Discuss Ribbon Blender's working (sketch is not needed).

Q6. Discuss the Steam distillation principle.

Q7. Explain in detail the working of the double pipe heat exchanger (sketch is needed).

Q8. Discuss in detail about Fourier's law.

Q9. Write down the applications of the heat transfer method.

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- Q10. Write about the principle, construction, working, use, merits, and demerits (with diagram) of the hammer mill.
- Q11. Write about the principle, construction, working, use, merits, and demerits (with diagram) of the cyclone separator.
- Q12. Differentiate drying and evaporation.
- Q13. Give application of drying in pharmaceutical industry.