

**Rajiv Gandhi University of Health Sciences, Karnataka**  
**Third Semester B. Pharm Degree Examination – 05-Jun-2024**

**Time: Three Hours**

**Max. Marks: 75**

**PHARMACEUTICAL ENGINEERING**

**Q.P. CODE: 5012**

Your answers should be specific to the questions asked

Draw neat labeled diagrams wherever necessary

All the questions are compulsory

**LONG ESSAYS**

**2 x 10 = 20 Marks**

1. Describe with a relevant equations for calculation of flow rates using orifice meter.  
**OR**  
Classify evaporators. Describe the principle and working of multiple effect evaporator.
2. Explain principle, construction and working of freeze dryer.

**SHORT ESSAYS**

**7 x 5 = 35 Marks**

3. Describe 'micronizer'. Describe aseptic grinding process of antibiotics.  
**OR**  
Explain the concept of settling behaviour using water with a suitable diagram.
4. Describe the construction and working of a distillation apparatus for the preparation of water for injection.  
**OR**  
Draw a neat labelled diagram of a shell and tube heat exchanger and explain its construction.
5. Give the characteristic of mixing impellers.
6. Describe the construction and working of a Seitz filter.
7. Explain the construction and working of under driven perforated basket centrifuge.
8. Describe the construction and working of a screw conveyor.
9. What is corrosion? Mention the factors that influence rate of corrosion.

**SHORT ANSWERS**

**10 x 2 = 20 Marks**

10. Name one mill each for fibrous materials and hard material.
11. Give the classification of fine powders with definitions.
12. State and explain Stefan Boltzmann's law of heat of radiation.
13. Define 'relative volatility' and write its significance.
14. Enumerate the mechanisms of solid mixing.
15. Write the principle of planteraty mixer.
16. List the factors influencing the rate of filtration.
17. Give the equation for centrifugal effect.
18. List the uses of rubber as a packaging material.
19. What are filter aids? Give examples.