



## Rajiv Gandhi University of Health Sciences, Karnataka III Year B.Pharm Degree Examination – NOV 2017

**Time: Three Hours****Max. Marks: 70 Marks**

### **PHARMACEUTICAL ENGINEERING (RS - 4) Q.P. CODE: 2638**

Your answers should be specific to the questions asked  
Draw neat labeled diagrams wherever necessary.

**LONG ESSAYS (Answer any Two)****2 x 10 = 20 Marks**

1. Explain the construction and working of a forced circulation evaporator and fluid bed dryer.
2. Explain the theory of centrifugation. Describe construction and working of the basket centrifuge.
3. Explain the theory of liquid-liquid mixing. Write the principle and working of Silverson emulsifier.

**SHORT ESSAYS (Answer any Six)****6 x 5 = 30 Marks**

4. Write the construction and working of a freeze dryer based on sublimation.
5. Explain the theory of evaporation. Mention the factors affecting rate of evaporation.
6. Derive an equation for heat transmission through metal wall.
7. Write the working of a ball mill explaining the importance of rpm.
8. What are constant boiling mixtures? How are they separated?
9. Explain the construction and working of cycloidal blower.
10. State and explain the laws governing size reduction.
11. Write the construction and working of a suitable crystallizer to obtain large crystals.

**SHORT ANSWERS****10 x 2 = 20 Marks**

12. Differentiate centrifugal pump and peristaltic pump.
13. Enlist the applications of molecular distillation.
14. Fluid energy mill is better equipment for size reduction of thermolabile substance compared to hammer mill substantiate the statement.
15. Write the principle involved in flash distillation.
16. Briefly explain sedimentation tank.
17. Give an example for dimensional formula and dimensionless equation.
18. Differentiate fixed and moving bed ion exchange methods.
19. Explain biological corrosion.
20. Why is humidity control important in pharmaceutical industries?
21. Name the conveyor suitable for transporting solids a) to a long distance b) to elevate large quantity of materials in a closed condition

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