

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-V (OLD) - EXAMINATION – SUMMER 2018

Subject Code:150505

Date:07/05/2018

Subject Name:Fundamentals of Chemical Engineering Unit

Operations(Institute Elective - II)

Time:02:30 PM to 05:00 PM

Total Marks: 70

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) Explain about the different modes of heat transfer. **07**
(b) Discuss about the various types of valve and their criteria for selection. **07**
- Q.2** (a) Define Unit Operation and list out the types of unit operations? Explain in brief any three of them. **07**
(b) Discuss the crushing laws and work index. **07**
- OR**
- (b) Explain the McCabe & Thiele method for calculation of number of trays and feed tray location. **07**
- Q.3** (a) Write a short note on Cooling Towers. **07**
(b) Explain with a neat sketch construction of tray drier. **07**
- OR**
- Q.3** (a) Explain construction and working principle of Rotameter with a neat sketch. **07**
(b) Write a brief note on Steam distillation. **07**
- Q.4** (a) Explain construction and working of Filter press with a neat sketch. **07**
(b) Define liquid-liquid extraction and the criteria for choice of solvent for extraction. **07**
- OR**
- Q.4** (a) Explain working of cyclone separator with a neat sketch. **07**
(b) Explain with a neat sketch construction and working of shell and tube heat exchanger **07**
- Q.5** (a) Define fluid and discuss their types. Discuss in detail about Newtonian and Non-Newtonian fluids. **07**
(b) List out the various types of pumps and explain working principle of Centrifugal pump. **07**
- OR**
- Q.5** (a) Explain construction and working of ball mill. **07**
(b) With a neat figure explain the construction and working of fluid energy mill. **07**
