

Roll No.

Total Pages : 02

BT-4/M-20

34133

MECHANICAL OPERATIONS

CHE-206-N

Time : Three Hours]

[Maximum Marks : 75

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. Assume missing data, if any.

Unit I

1. (a) What do you mean by Unit Operations ? Name different unit operations and also write their importance in chemical industry. **9**
(b) Write the construction and working of mechanical screen along with a neat sketch. **6**
2. (a) Discuss the theory of filtration. **6**
(b) Write the working of plate and frame filter press. **9**

Unit II

3. (a) Discuss various laws of size reduction. What do you mean by Work Index ? Write its importance. **7.5**
(b) Explain the construction and working of jaw crusher. **7.5**

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4. Explain the following :
- (a) Particle size enlargement techniques
 - (b) Ball mill. 15

Unit III

5. (a) State Stoke's law. 5
(b) Explain free and hindered settling. 10
6. State the difference between a classifier and clarifier ?
Explain the construction and working of a classifier and clarifier. 15

Unit IV

7. Discuss the construction and working of the following equipments :
- (a) Bag filter
 - (b) Cyclone separator. 15
8. Do any *two* of the following :
- (a) Storage of solids
 - (b) Elutriation
 - (c) Electrostatic precipitator. 7.5×2=15