

B.Tech.
ROLL NO- 2022
4th Sem.

B.TECH FOOD TECHNOLOGY

IV Semester Examination 2022

Course Code- BFTC-401

Course Title - Unit Operations in Food Processing

TIME: 3 hours

Max. Marks: 75

Note: 1. *It is compulsory to answer all the questions of Section-A.*
2. *Answer any four questions in Section- B.*

Section-A (30)

- Q1. Briefly explain demerits of size reduction? (5M)
Q2. How performance of size reduction machines can be improved? (5M)
Q3. Describe the methods of size reduction? (5M)
Q4. Briefly explain storage losses and damages to the stored products? (5M)
Q5. Write down the points to be considered while selecting the conveyor? (5M)
Q6. How grain transport can be made efficient? (5M)
Q7. Briefly explain Optical Properties? (5M)

Section- B (4*10=40)

- Q1. Derive an expression for power requirements in comminution of solids? Discuss the laws used to estimate the power requirements when energy per mass of solid is not too high (10M)
Q2. Describe why do we need to study flowability? How use of unit operations can control the filling of any product (esp. powders and liquids) into packets? (10M)
Q3. It is found that the energy required to reduce particles from mean diameter of 1cm to 0.3cm is 11 kJ kg^{-1} . Estimate the energy requirement to reduce the same particles from a diameter of 0.1cm to 0.01cm assuming Rittinger's Law and Bond's Law. (10M)
Q4. It is desired to crush 10 tonne per hour of grains, the size of the feed is such that 80% passes a 76.2 mm screen and 80% of the product is to pass a 3.17mm screen. Calculate the gross power requirement. Use work index for grinding as 12.68. (10M)
Q5. Explain the principle and segregation of the grinding units in ball mill. (10M)
Q6. Explain Screening and types of screens (any three)? (10M)