2007-NATIONAL INSTITUTE OF TECHNOLOGY(NIT)
III SEMESTER B.TECH MID TERM EXAMINATION
PARTICULATE TECHNOLOGY
(CHEMICAL ENGINEERING)

TIME-1HOUR
MARKS-40

Note: Answer all questions. Each question carries 8 marks.

1. Define particle size. What is shape factor. Based on size analysis how do you determine average surface area of a mixture. Give equations for 3 different mean diameters.

2. Define liberation size and explain the need for size reduction. Starting from basic differential equation derive the 3 laws of size reduction, and indicate the range of (feed size) application.

3. Describe the 3 industrial screens. Derive the expression for screen effectiveness. How does it vary with capacity.

4.a) Differential and cumulative analysis.

 5 cms feed is crushed to average size of 1 cm. consuming 10 kwh/ton. If feed size is altered to 4 cms what is the power consumption? Justify the law you use.