

Dr. S. S. Bhatnagar University Institute of Chemical Engineering and Technology,
Panjab University, Chandigarh
IIst Periodical Exam

Class: B.E.+MBA 1st and F.T. 1st

Subject: Introduction to Eng. and Tech.

Duration: 1 hour

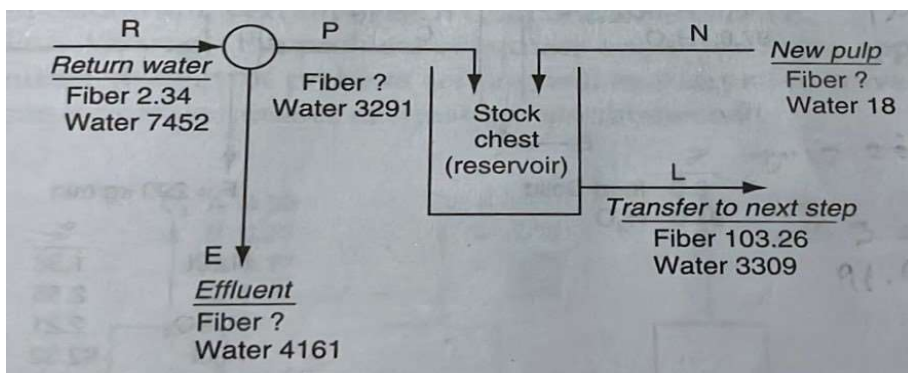
Total marks: 20

Instruction:

- Answer all questions.
- Write answers briefly
- Draw diagrams where necessary

1. (a) Write brief note on Raoult's and Henry's law (CO2) (2.5)
(b) Define absolute and relative humidity and explain difference between them. (CO2) (2.5)
2. A block of dry ice weighting 50 lb was dropped into an empty steel tank, the volume of which was 5 ft³. The tank was heated until the pressure gauge read 1600 psi. what was the temperature of the gas? Assume all of the CO₂ becomes gas. ($P_c = 1071.6$ psi, $T_c = 31.2^\circ\text{C}$) (CO2) (5)
3. (a) In a tissue paper machine (as shown in figure), stream N contains 85% fiber. Find the unknown

Fiber values (all values in figure are in kilograms) in kilograms for each stream.(CO3) (5)



- (b) A lacquer plant must deliver 100 lb of an 8 % nitrocellulose solution. The plant has in stock 5.5% solution. How much dry nitrocellulose must be dissolved in solution to fill the order?((CO3) (5)

