Assignment 9

The due date for submitting this assignment has passed. 
As per our records you have not submitted this assignment.

Based on the given statement, answer no (a), (b), (c), (d) & (e).

A protein solution of concentration 0.2 kg/m³ is concentrated by ultrafiltration. The operating pressure at the channel inlet is 10^5 Pa, with 0.3 m in and channel half length is 1 mm. The membrane permeability is 12–11 mm² Pa/s. The feed flow rate at the channel entrance is 10 L/h. The length of the channel is 2 m.

1) Find out Pressure drop across the channel. [Unit: Pa]

No, the answer is incorrect.
Score: 0
Accepted Answers:
(Type: Numerical) 105

2) What is the fractional recovery of feed?

No, the answer is incorrect.
Score: 0
Accepted Answers:
(Type: Numerical) 0.1

3) Find out velocity of channel outlet. [Unit: m/s]

No, the answer is incorrect.
Score: 0
Accepted Answers:
(Type: Numerical) 0.05

4) Find out concentration at channel outlet. [Unit: kg/m³]

No, the answer is incorrect.
Score: 0
Accepted Answers:
(Type: Numerical) 0.005

5) Find the value of limiting operating pressure. [Unit: K- Pa]

No, the answer is incorrect.
Score: 0
Accepted Answers:
(Type: Numerical) 105

6) What is the value of “a”? [Unit: x10^3 Pa/s]

No, the answer is incorrect.
Score: 0
Accepted Answers:
(Type: Numerical) 4.4

7) Find the gel layer resistance at this pressure. [Unit: x10^(-9) m²]

No, the answer is incorrect.
Score: 0
Accepted Answers:
(Type: Numerical) 2