Quiz 1
BT 601
Time: 45 min
Total Marks:10

[Show all steps and No part marking for numerical problems]

1. Calculate the number of theoretical pallets (N) and the plate height (H), when the retention time is 10.50 min and the half-base width is 1.2 min and the column length is 25 cm.

2. a) Show the relation (expression) of K_D and K_{p_r}.

b) Calculate the K_P of a compound, when 10 gm of the compound present in 300 ml water was shaken with 20 ml of acetone and 8 gm of the compound was transferred to acetone layer only.

3. Write the distribution of 1000 molecules of a compound in 5 theoretical plates with K_p=0.1 [Consider whole number for distribution].

4. a) Write the expression related to K_D and V_e based on the column parameters.

b) Modify the above expression for totally "exclude" and "Include" conditions.

5. a) Show the chromatogram of different Mw proteins in a gel filtration chromatography?

b) Show the plot to determine unknown Mw of a protein.

[Marks: 2+2+2+2+2= 10]