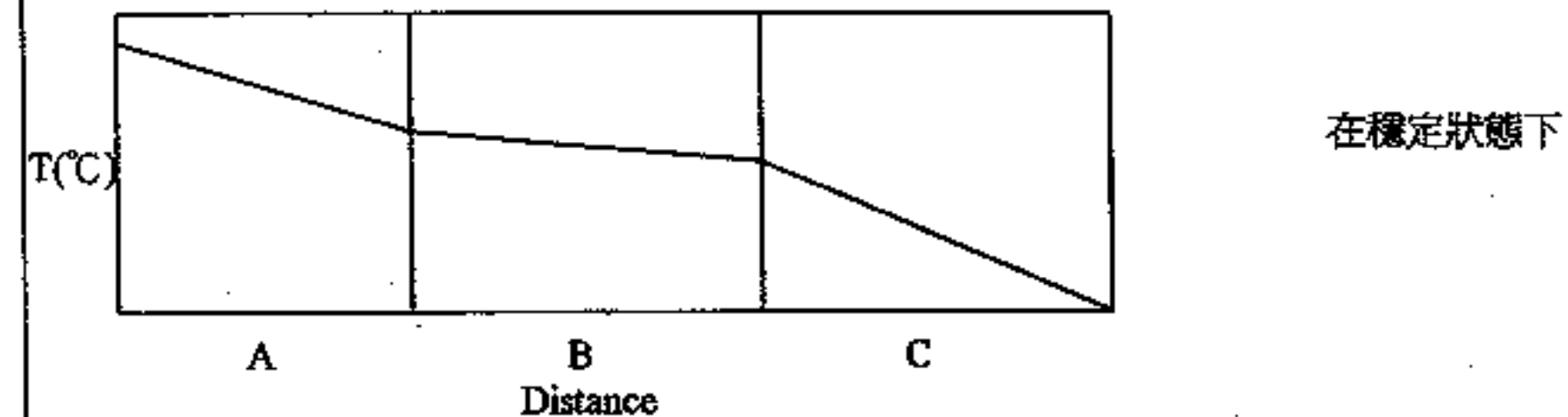


1. 解釋下列項目 (40%)

- (1) 平衡階 (equilibrium stage)
- (2) 回流比 (reflux ratio)
- (3) 自然對流 (natural convection)
- (4) 再沸器 (reboiler)
- (5) 雙膜理論 (two-film theory)
- (6) 質傳係數 (mass transfer coefficient)
- (7) 雷諾數 (Reynolds number)
- (8) 三效蒸發器 (Triple-effect evaporator)

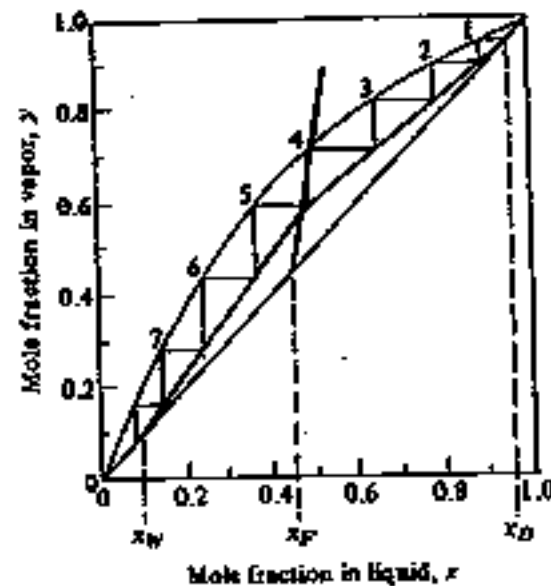
2. 下圖中何種材料之熱傳導度最大? 為什麼? (10%)



3. 請簡單描述 log mean temperature difference (LMTD) 在熱交換器設計中之意義。(10%)

4. 請就右圖回答 (20%)

- (1) Feed plate 在第幾理論板?
- (2) Feed 之狀態 (液或汽)?
- (3) 再沸器中之液汽組成為何?
- (4) 試估計最小回流比
- (5) Distillate 與 Bottoms 之莫耳流量比為何?



5. Acetic acid in water (10%) is extracted with pure diethyl ether in a single tank. The solvent / feed ratio is 0.5. Acetic acid has a partition coefficient in diethyl ether / water system of 2.4. Assuming water and diethyl ether are totally immiscible, calculate the compositions of the extract and raffinate phases. (20%)