※ 考生請注意：本試題可使用計算機。　請於答案卷(卡)作答，於本試題紙上作答者，不予計分。

1. The definition of terms: (a) Elutriation (b) Cylindrical mills (c) Sphericity (d) Jigging cycles (e) Natural floatability (15%)

2. Please compare advantage and disadvantage with ball mills and rod mills. (10%)

3. Please describe (a) path of a typical ball in a ball mill, (b) zones in a ball mill. (10%)

4. Define the principle of area. (5%) The sedimentation tank (depth=2 m, width=8 m) processes the treatment of wastewater (solid density= $2.65\frac{kg}{cm^3}$) with flow rate 10 m^3/hr and the maximum particle size of the suspended particles in the wastewater is 2×10^{-6} m after the agglomeration of the suspended particles. What is the length of the settling tank? (10%)

5. In typical flotation circuits, please try to draw (a) single-pass flotation, (b) single-pass flotation with splitting of a middling. (15%)

6. What is the mechanism of eddy current separation? What kind of function of material is related to the magnitude of current? Please give three examples of material. (15%)

7. Describe the mechanism of collection. (a) collection of Pyrite by Xanthates, (b) collection of Galena by Xanthates, (c) collection of Feldspar by Oleic acid.(10%)

8. Please describe the figure about electrostatic separator. (10%)