

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

1. Please define the meaning of calibration, calibration curve, and applicable calibration range. (20%)
2. While using a charcoal tube for conducting environmental monitoring, please define its minimum air sample volume, and its maximum air sample volume. (20%)
3. (1) Please define the grab sampling and explain the purpose for conducting grab sampling. (2) Please define the integrated sampling and explain the purpose for conducting integrated sampling. (20%)
4. Please describe the importance for assessing occupational dermal exposures, and briefly introduce one technology which can be used for assessing workers' dermal exposures. (20%)
5. An impinger is used for conducting environmental monitoring, if  $V$ : the total volume of liquid in the impinger;  $v$ : the volume of liquid used for analysis;  $m$ : mass of the contaminant is contained in  $v$ ;  $m_{\text{blank}}$ : mass of the contaminant is contained in  $v$  for the blank sample;  $\eta$ : the collection efficiency;  $Q$ : the sampling flow rate; and  $t$ : sampling time are known, please define the air concentration ( $c$ ) of the contaminant. (20%)