

系所組別： 環境醫學研究所甲組

考試科目： 作業環境測定

考試日期： 0308，節次： 3

※ 考生請注意：本試題 可 不可 使用計算機

1. Please describe following terms used in Gas Chromatography. (20%)
 - (1) mobile phase (5%)
 - (2) calibration standard (5%)
 - (3) resolution (5%)
 - (4) column efficiency (5%)
2. Please draw a figure to show the schematic of a set-up for calibration of a personal respirable dust sampling train. (20%)
3. Please calculate the limit of detection (LOD) for the following two scenarios: (20%)
 - (1) For an Andersen impactor with a sampling flow rate of 28.3 lpm and sampling time of 3 min. (10%)
 - (2) For an impinger operating at 12.5 lpm, a sampling time of 30 min, and a liquid volume of 20 ml out of which 1 ml is used to inoculate an agar plate. (10%)
4. Please describe factors affecting the adsorption of gaseous pollutants onto a sorbent surface and occurrence of break-through for a sorbent tube. (20%)
5. Please define and compare following paired terminologies (20%):
 - (1) active sampling vs. passive sampling (5%)
 - (2) primary standard vs. secondary standard (5%)
 - (3) systemic error vs. random error (5%)
 - (4) absorption vs. adsorption sedimentation vs. impaction (5%)