系所組別: 環境醫學研究所甲組
考試科目: 工業衛生　　　　　　　　　　　　　　　　考試日期：0308，節次：2

※ 考生請注意：本試題 ☑可　□不可 使用計算機

1. Mono-dispersed spherical particles (diameter= 10μm, density= 1g/cm^3) are found with a mass concentration of 100mg/m^3. Please calculate the corresponding number and surface area concentrations. (20%)

2. A workplace was found with a toluene (PEL-TWA=100ppm) consumption rate of 500g/h. If the general exhaust ventilation was used as its control measure, please calculate the required ventilation rate (unit: m^3/min) for the given workplace? Please also describe the assumptions which are used for the above calculation. (20%)

3. A worker was exposed to following industrial noise during one workshift: 70 dBA for 3 hrs, 85 dBA for 2 hrs, 90 dBA for 2 hrs, and 95 dBA for 1 hr. Please calculate the time-weighted-average noise exposure levels based on the 5-dBA rule and 3-dBA rule. (20%)

4. Please describe cumulative trauma disorders (CTDs). What are factors causing CTDs? (20%)

5. Please brief describe following terms: (20%)
   (1) Thermal comfort (4%)
   (2) Asbestos (4%)
   (3) Biological exposure index (4%)
   (4) Inert dusts (4%)
   (5) Biological hazard (4%)