

※ 考生請注意：本試題不可使用計算機

1. A worker working in a room (900m^3) is exposed to particle number concentration of 50000 \#/cm^3 , assume that the particle is monodisperse (200nm in diameter) and the particle density is 1.5g/cm^3 . What is the particle mass concentration (ug/m^3) that the worker is exposed to (10%)? What is the total particle surface area in the room (10%)? Please explain the limitations of personal protective equipment used for particle exposure (5%)?
2. Please explain the instruments used for detecting radiation and noise in a workplace? (10%) What are the common units used for radiation measurements (5%)?
3. Please explain in detail what temperature measurements are included in Wet Bulb Globe Temperature (WBGT)? (10%)
4. When we develop a strategy to investigate an Indoor Air Quality (IAQ) episode to investigate complaints related to stuffiness and dead air, what are the important factors that should be considered? (10%) What is the current progress of IAQ legislation in Taiwan? (5%)
5. Please briefly describe the things must be considered before collecting field samples. (12%)
6. Please briefly describe the factors affecting the collection of gases, vapors, and aerosols. (18%)
7. What control measures should we take to treat a room occupied by a Tuberculosis patient? (5%)
(a) HEPA filtration (b) Activated carbon (c) UVGI (d) Both a and c