

1. Please define following paired terminologies (20%)
 - (1) PELs vs. TLVs
 - (2) Ionized radiation vs. Non-ionized radiation
 - (3) Active sampling vs. Passive sampling
 - (4) Biological monitoring vs. Environmental monitoring
 - (5) Field blank vs. Sample blank
2. Please define aerodynamic diameter and Stokes diameter? (8%)
3. A aluminum smelter was found with a natural wet bulb temperature 37°C, globe temperature 42°C, and air temperature 39°C. What is the WBGT of this workplace environment? (7%)
4. What are asbestos and please describe the kinds of asbestos? (10%) What are effects of asbestos exposure? (5%) How to measure the concentration of asbestos in the workplace? (10%)
5. What is Similar Exposure Group (SEG)? How to identify SEG in the environmental monitoring? (20%)
6. Please identify the sampling methods and analytical instruments of solvents in the workplace? (20%)