

本試題是否可以使用計算機：☒ 可使用，☐ 不可使用（請命題老師勾選）

考試日期：0302，節次：2

1. Please specify and compare the most important characteristics of physical, chemical, and biological hazards in the general and occupational environments from the following perspectives: (1) sources of these hazards (2) types of health effects they are likely to impose on human populations (3) the preventive and control strategies. (15%)
2. Research progress in characterizing environmental quality in different indoor environments has been limited by factors of various aspects. To name just a few, type of instruments available to assess concurrently multiple exposures of vast diversity in nature, knowledge about the corresponding symptoms and diseases associated with quality of indoor air, and development of biomarkers to better correlate environmental exposures and outcomes of interest. With this premise, please identify one type of indoor environmental hazard that is considered to have been studied most over the recent years, and the advancement of knowledge for the above-mentioned perspectives has been recognized as most significant. Please also briefly describe why those findings have accomplished critical contribution to the field of "Indoor Air Quality and Health". (15%)
3. Please elaborate 5 major impacts on the global environments and human society as a result of climate change. Specifically, please discuss how it has changed the prevalence and profiles of selected infectious diseases around the world. (10%)
4. The highest levels of five air pollutants within 24 hours were determined from an air quality monitoring station of Tainan City and showed as follows (1) PM10 : 195  $\mu\text{g}/\text{m}^3$ 、(2)  $\text{SO}_2$  : 48 ppb、(3) CO : 7 ppm、(4)  $\text{O}_3$  : 180 ppb、(5)  $\text{NO}_2$  : 24 ppb. Use above data and following table to calculate the PSI and point out which pollutant is the indicator pollutant. (10 %)

PSI	Max. of hourly average of PM10 ( $\mu\text{g}/\text{m}^3$ )	Max. of hourly average of $\text{SO}_2$ (ppb)	Max. of hourly average of CO (ppm)	Max. of hourly average of $\text{O}_3$ (ppb)	Max. of hourly average of $\text{NO}_2$ (ppb)
50	50	30	4.5	60	-
100	150	140	9	120	-
200	350	300	15	200	600
300	420	600	30	400	1200
400	500	800	40	500	1600
500	600	1000	50	600	2000

(背面仍有題目,請繼續作答)



5. Explain the formation mechanisms of polychlorinated dibenzo-*p*-dioxins and dibenzofurans (PCDD/Fs) during the incineration of municipal solid waste. (15 %)
6.
  - (1) According to the **Kyoto Protocol**, what gases were classified as greenhouse gases? (6%)
  - (2) Explain the action mechanism of greenhouse gases to influence the temperature of atmosphere. (4 %)
  - (3) Describe the control measures of greenhouse gases emission (5 %).
7. Define the "Endocrine disruptor" (4 %) and describe the "Endocrine disruptor hypothesis" (6 %)
8. In general, which factors could influence the quantity and composition of municipal solid waste in a particular community? (10 %)