

※ 考生請注意：本試題不可使用計算機。請於答案卷(卡)作答，於本試題紙上作答者，不予計分。

1. Please define the following terms and describe the relationship between the following terms. (16%)
  - (1) Risk assessment,
  - (2) Risk management,
  - (3) Risk communication
  
2. Please describe the four major sources of the information for hazard identification and their priorities. (14%)
  
3. (1) Please explain the differences of pollution standard index (PSI) and air quality index (AQI)? (8%)  
 (2) And describe the differences between AQI that developed by Taiwan EPA and USEPA? (6%)  
 (3) The levels of air pollutants were determined from an air quality monitoring station of Tainan city and showed as follows (1)  $PM_{10}$  :  $175 \mu g/m^3$ 、(2)  $PM_{2.5}$  :  $37 \mu g/m^3$ 、(3)  $SO_2$  : 48 ppb、(4) CO : 7 ppm、(5)  $O_3$  (8 hours average: 90 ppb, 1 hour average: 140 ppb)、(6)  $NO_2$  : 120 ppb. Use above data and following table to calculate the air quality index (AQI). (6%)

AQI 指標	$O_3$ (ppm) 8 小時平均值	$O_3$ (ppm) 小時平均值 <sup>(1)</sup>	$PM_{2.5}$ ( $\mu g/m^3$ ) 24 小時平均值	$PM_{10}$ ( $\mu g/m^3$ ) 24 小時平均值	CO(ppm) 8 小時平均值	$SO_2$ (ppb) 小時平均值	$NO_2$ (ppb) 小時平均值
0~50	0.000 - 0.054	-	0.0 - 15.4	0 - 54	0 - 4.4	0 - 35	0 - 53
51~100	0.055 - 0.070	-	15.5 - 35.4	55 - 125	4.5 - 9.4	36 - 75	54 - 100
101~150	0.071 - 0.085	0.125 - 0.164	35.5 - 54.4	126 - 254	9.5 - 12.4	76 - 185	101 - 360
151~200	0.086 - 0.105	0.165 - 0.204	54.5 - 150.4	255 - 354	12.5 - 15.4	186 - 304	361 - 649
201~300	0.106 - 0.200	0.205 - 0.404	150.5 - 250.4	355 - 424	15.5 - 30.4	305 - 604	650 - 1249
301~400	-	0.405 - 0.504	250.5 - 350.4	425 - 504	30.5 - 40.4	605 - 804	1250 - 1649
401~500	-	0.505 - 0.604	350.5 - 500.4	505 - 604	40.5 - 50.4	805 - 1004	1650 - 2049

4. Please describe the mechanism of green-house gases influence the temperature of globe? (8%) and please describe the potential of six green-house gases? (10%)
  
5. Please define the term of “Environmental Inventory” and “Environmental Impact Assessment”? (8%) and briefly describe the five activities in the process of environmental impact assessment. (10%)
  
6. Please describe the definition of “Endocrine Disruptor”, “Persistent Organic pollutants” (6%), and then give an endocrine disrupting chemical as example to explain briefly the meaning of “Endocrine Disruptor Hypothesis” proposed by Theo Colborn (8%).