

各位考生請特別注意，請在下列十題題目中任選四題作答，每題 25 分，一共是一百分。若選擇作答的題目超過四題，則將挑選得分最低的四題計算總分。請務必標明選擇作答題目的題號但不用抄題目。

1. 何謂溫室效應？社會大眾在日常生活中的食、衣、住、行及其他方面可做到的全民二氧化碳減量工作有那些？
2. 常見的室內空氣污染物有那些？造成家中室內空氣污染的原因為何？如何預防及改善？
3. 請就下列新聞說明鋰電池會有甚麼樣的安全問題及其成因。
Sony issues global Li-ion battery recall (September 28, 2006):
They cite microscopic metal particles that enter the battery during the manufacturing process as the reason for the battery failures. The particles, they say, come into contact with other parts of the battery cell, causing the battery to short-circuit. Sony claims that these batteries would normally just power off, but in “rare cases” may overheat and cause flames.
4. 請就下列豐田汽車回收事件的新聞說明該車的安全性與可靠度之關係。
Toyota Dealers Nationwide Have Begun Fixing Accelerator Pedals On Recalled Vehicles (Jan. 28, 2010):
“Nothing is more important to us than the safety and reliability of the vehicles our customers drive, and we are determined to live up to the high standards people have come to expect from Toyota over the past 50 years,” said Jim Lentz. Toyota’s engineers developed and rigorously tested a solution to address the potential for sticking accelerator pedals that is both effective and simple. A precision-cut steel reinforcement bar will be installed into the accelerator pedal assembly on affected vehicles, thereby eliminating the excess friction that has caused pedals to stick in rare instances.
5. 請說明化學品光阻液(MICROPOSIT S1400) 和丙酮(ACETONE)在儲存時應注意事項及他們發生火災時可使用之滅火器。
6. 簡述光電式分離型探測器感知之動作原理及其設置規定。
7. 請說明半導體廠及光電廠發生排氣管火災/爆炸的可能原因以及防止和抑制其擴大的對策。

8. 以 CVD 方式長 Poly Si，需使用什麼氣體，這些氣體有何危險性？在此製程中，需注意哪些工安問題？
9. 試寫出正光阻之微影製程，正光阻之顯影液及光阻去除液有何危險性？其廢液處理要點為何？
10. 下列 IC 製程模組會採取哪些預防措施以防止地震所造成之傷害？
(1) Oxidation (2) CVD (3) Etching (4) Ion Implantation