

國立臺中教育大學 100 學年度研究所碩士班招生考試

環境科學概論試題

適用學系：科學應用與推廣學系環境教育及管理碩士班

一、選擇題：(每小題 3 分，共 6 分)

1. The CITES treaty has been helpful in protecting endangered animals and plants by
 - (A) listing all species that can be hunted, traded, and used commercially
 - (B) listing those species and products whose international trade is controlled
 - (C) funding projects for breeding endangered plants and animals
 - (D) preventing the hunting of whales and dolphins
 - (E) specifying prices for certain plant and animal products
2. Most of the Earth's deserts are at approximately 30° latitude, north and south, because these latitudes are characterized by
 - (A) generally warm ocean currents
 - (B) predominantly low atmospheric pressure
 - (C) descending dry air currents
 - (D) slow-moving jet streams
 - (E) enhanced solar radiation

二、名詞解釋：並說明其與環境的關聯性 (每小題 5 分，共 15 分)

1. Terrestrial systems
2. Dynamic equilibrium of ecosystem
3. Indicator organism

三、一有機廢水樣品要作 BOD 分析，第一位分析者於測試的過程誤將樣品置於 30°C 的培養箱中培養了 7 天，所測得 BOD 值為 208mg/L，已知 $k_{30^\circ\text{C}}=0.18/\text{天}$ ；而第二位分析者將樣品置於 20°C 培養箱中培養了 4 天($k_{20^\circ\text{C}}$ 數值不詳)，所測得的 BOD 值為 137mg/L。請問這樣品真正的 $\text{BOD}_{5\text{天}, 20^\circ\text{C}}$ 應該為多少 mg/L？(提示：BOD 反應式為： $\text{BOD} = \text{BOD}_{\text{最終}}(1 - e^{-kt})$ ， k 為反應常數，會隨著溫度變化； t 為反應天數) (10 分)

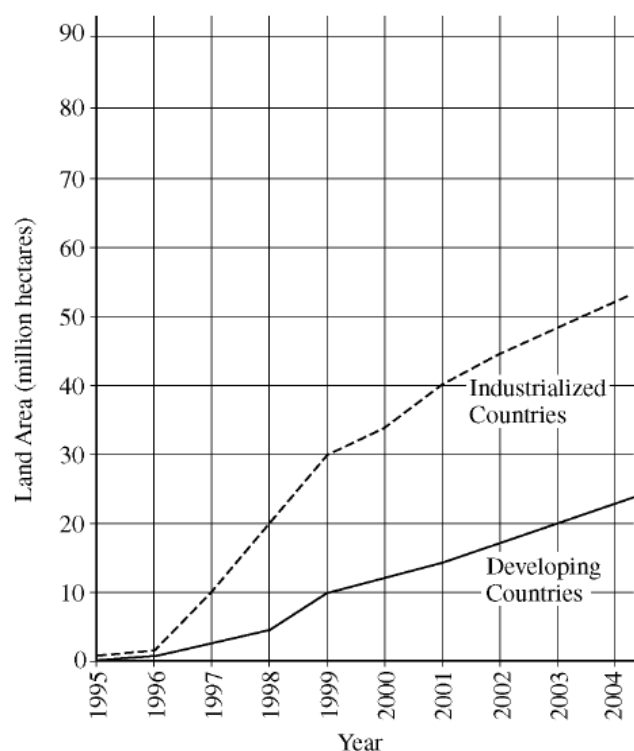
四、請分別說明 ISO9000、ISO14000、OHSAS18000、ISO26000 主要分別管制企業的什麼內容？並請以集合圈大小、相互包含及交集情形，來呈現相互之間關聯情形。(15 分)

五、天下雜誌從 1996 年開始到 2010 年針對高屏溪的看守工作，已出版 3 部「看河」影音紀錄片，從 1996 年的賀伯颱風重創、1999 年的九二一大地震至今，台灣，從中部、東部、北部到南部似乎全都陷入地震、颱風、水災、旱災循環衝擊的宿命。2009 年八月八日，莫拉克颱風，一場浩劫，上萬家庭流離失所。試簡述您所熟悉的一條河川之上中下游常見的破壞、污染，並提出最適當的規劃解決方案。(15 分)

六、The major issues in modern agriculture include the use of genetically modified (GM) crops and the implementation of sustainable agricultural practices. The following graph shows the increase in the use of GM crops in both developing and industrialized countries from 1995 to 2004. (可用中文回答)(14 分)

1. Reply to the following questions based on the data in the graph above. (6分)

- (1) Calculate the increase in the area of land used for growing GM crops in developing countries from 1999 to 2003. Express your answer as a percentage of the 1999 value.
- (2) Calculate the annual rate of increase in land area used for growing GM crops in industrialized countries from 1997 to 1999.



2. Identify and describe one environmental advantage and one economic advantage of consuming locally grown produce. (8分)

七、所有森林的死亡殘體，例如植物枝條和動物屍體等，都能供應為土壤的有機質以及腐植質之來源，而除了保護及養成土壤外，請說明森林的其他功能。(15分)

八、請問歐盟的環保指令計有哪些？並簡述其內容？(10分)