一、 請在閱讀完下列三篇文章後，以中文回答下列問題（35%）

Article 1:

Think about your life before the Internet. While the thought may evoke nostalgia for a simpler time, most of us can hardly imagine our lives without this technological wonder. It is fast becoming the first stop for shopping, planning a trip, or doing research. Now imagine that you have a physical impairment that prevents you from operating your computer software programs by using a mouse and that you want to review information about a drug prescribed for your young daughter on the Internet. You find the relevant Website, but you can only access information on the site by using a mouse. Unless you have someone nearby to manipulate the mouse, you and your daughter are out of luck. This is just one example of the difficulties faced each day by the disabled in using the Internet.

Other disability groups that often encounter inaccessible Websites are the blind, the deaf, and the learning disabled. The blind are unable to access unlabeled graphic images, text formatted in complex ways, Java applets, and video clips. The deaf are unable to use those portions of a Website that provide information solely in an audio format. Those with certain types of learning disabilities may be unable to process large amounts of text information without the use of assistive technology.

As people become increasingly reliant on the Internet, accessibility issues will certainly play an important part in the Internet's development. According to the National Center for the Dissemination of Disability Research, approximately 54 million people with disabilities live in the United States. This number continues to grow as the baby boomer population ages. With these large numbers, the economic and moral imperatives in making the Internet accessible become clear. Yet many companies today either choose to disregard the issue of accessibility or simply forget to consider the disabled when designing and updating their Websites.

...

(Maryland Bar Journal, November/December, 2000, T. Fleischaker)

Article 2:

As we enter an era where good employment opportunities rely on good computer skills, the digital divide takes on increasing social ramifications. The division between the digital have and have-nots is not only one of economic status, but splits along

social lines, as well. At a time when women are becoming more and more of a presence in the American workforce, they also run a greater risk of being shut out of the digital future. Part of the problem is the computer technology industry, a field in which men vastly outnumber women. However, the problem also exists in the schools themselves, in the ways that girls are taught to understand-or not understand- the role of technology in their lives. It took specific legislation to ensure that young women could have equal access to coaches, fields, and sports equipment in school. The access to technology and training for girls in no less important and the limits on it no less pronounced. In fact, girls may be at a technological disadvantage long before they ever graduate from high school and enter the job market.

…

(Digital Divide, Computer and Our Children's Future, D.B. Bolt & R.A.K. Crawford)

Article 3:

Home computer use and Internet access have increased sharply in many countries, but a survey released today showed a yawning "digital divide" between developed and developing nations was barely closing. (Andrew Wong/Reuters)

"It's still not an equal world… there are big and even growing gaps across countries in both personal computer ownership and Internet access…a tremendous inequality in being wired," said Tom Miller of marketing research firm Roper Starch Worldwide, who directed the study.

…

Miller said the top country for Internet use was Singapore with half (50 percentage points) of respondents saying they had gone online in the past 30 days. The United States was second on 44 percentage points, but given its much larger population, it had more actual Internet users than the small Southeast Asian island republic.

Indonesia was at the bottom of the 30-nation group on Internet use at three percentage points.

Regionally, North Americans were still more likely however, than people in other regions to have used the Internet in the past 30 days (41 percentage points), up 12 points since 1998.

Next was Developed Asia (32 points), up 10, trailed by Western Europe (23 points), up 8; and Latin America (11), Eastern Europe (11) and Developing Asia (10), each up four points.

Other highlights of the survey:

- On levels of PC ownership, half of North Americans (51 percentage points) own PCs, an eight-point gain over 1998, second only to developed countries of Asia.
- Latin America was third with almost three in 10 owning PC's, an increase of seven percentage points. Western Europe and developing nations of Asia were tied in fourth place at 17 percentage points, an increase in each region of four points.
- At a country level, Turkey's Internet use has grown fastest, up 14 points to 19.
- Internet use in the United States rose 13 points since 1998.
- Germany also boosted its use by 13 points to 23; Korea (25 points) was up 12, and Taiwan (27) scored an 11-point gain. Australia (43), Japan (22) and France (16) were each up 10 points. ■

(Closing in on the Digital Divide: Home PC Use Rises, Global Digital Gap Remains)

1. 請解讀以上不同來源之資料，定義"digital divide"(10%)，並舉例說明之(10%)。

2. 請就如何 "closing the digital divide" 提出你的見解。(15%)

二、 請閱讀 Statement A 與 statement B，並回答下列問題。(35%)

Statement A

壹、前言

全球人口在 2030 年預期將達 100 億人，為減少糧食不足之壓力，應增加穀物產量，創造更安全及永續之農業，並減少將天然棲息地轉換為農業用地之機會。生物科技將增加農民 20%生產量，而且不會破壞天然資源。前任總統卡特先生曾說：「生物科技不是我們的敵人，飢餓才是敵人。如未提供合理價格之食物來源，我們將無法期待全球之健康或和平。」

貳、生物科技之利益

一、環境利益

農業化學藥物雖可防制害蟲及植物疾病，但其之不當使用，對天然環境以及賴以維生之人類與動物均造成危害，因此有必要尋求替代方法。某些生物科技穀物可以減少殺蟲劑與除草劑之使用量，並增加使用農業化學藥物之選擇性。例如，馬鈴薯、玉米及棉花等已被基因改造產生一種抗菌素（bt 內毒素），可以自我抵抗害蟲，減少殺蟲劑之噴灑（噴灑會影響更多的非目標昆蟲及動物）。此外，抗除草劑之生物科技棉花、玉米及黃豆之產製，可減少除草劑用量並利用更多親環境之除草劑。

生物科技也可解決霜害、乾旱或洪水所造成對產量之不利影響，此外也可增加土壤及邊際土地之適耕性，減少其他土地改為農業用地之機會。生物科技可增加穀物之固氮性，使土壤維持必要之養分，減少肥料之使用量。由於降低耕種頻率，減少土壤及其內含養分與水源之逕流，進而增加土壤壽命。

二、農夫利益

生物科技可增加農人利益，例如改進種子品質，增加產量。此外，化學藥物與人工成本之減少，相對也增加農民收益。透過高科技之研發，提升農民生產技術能力，以較簡易之處理、貯存、毋須冷藏、延長上架壽命等方式，減少農民成本。

三、人類健康

全球人類健康繫於農產品之生產，營養失調的問題也漸有改善，但隨著人口的快速擴張，尤其是開發中國家，如何維持人類健康仍是亟待解決之問題，而生物科技是最重要的解決方案。

生物科技減少農業化學藥品的使用，進而降低該等藥品之逕流，對地下水的威脅相對也降低許多，如眾所周知，地下水與人類健康的關聯相當顯著。由於農業化學藥品用量之減少，生物科技也可保護工作人員之健康。此外，生物科技可降低穀物中危害人類健康成分之含量，例如，降低玉米、黃豆等植物中飽和脂肪含量；馬鈴薯於油炸時，可吸附較少之油脂；含高量營養成分（如維生素C及E）之水果與蔬菜，減少慢性疾病（如癌症及心臟病）；改進稻米之蛋白質組成份，增加必要氨基酸等。另外也可利用生物科技方法排除食物中可能引發過敏之蛋白質或製造可食用之疫苗。

四、動物健康

生物科技可提供更高營養份量之動物飼料，以及抗病疫苗。

五、消費者利益

蔬果口味及品質之穩定性可透過生物科技加強。生物科技產品之生產、通銷、包裝以及處理等成本均相對降低，消費者負擔隨之減少。生物科技同時提供傳統加工之新技術，如釀造、烘培以及乳酪製造等，改進食品加工之關鍵成份，如酵素、蛋白質以及維生素。例如，製造乳酪之酵素（rennin）係來自屠宰牛隻之胃壁，研究者分離產生 renin 之特定基因並予複製，並再製於細菌中，此即可藉由細菌培養 renin。目前已有近 50%之 renin 係由此方式培養，成為一項提供更為穩定及純化之酵素來源。

未來的研究與發展將改進確認食物中毒素、致病原或污染物之方法，而基礎建設與資訊分享將更支持生技產品之全球貿易。

(Cite from:www.trade.gov.tw/impt_issue/impt_index.xhm)

Statement B

Genetic engineering creates whole new life forms - completely unnatural - yet it refuses to acknowledge that the risks involved in releasing them are huge. All over the world when non-indigenous species have been introduced into new environments they have caused long term damage. We know that changing one element of the environment sets off a domino effect of cascading changes throughout entire eco-systems. Yet industry maintains that it's foreign species will not cause problems.....

They're alive....

that means that genetically engineered organisms can mutate, multiply, breed with other living things and go on breeding for generations to come.

They're unstable....

it's nonsense to think that genetic engineering is a precise science. There are literally millions of genes in a living organism and they don't just work on a "one gene, one trait" system. Genes are complex and work together to perform certain functions. Many of the trials conducted on genetically engineered organisms have gone badly wrong- cotton crops, designed to fight off insects, were still devoured. Thousands of hectares of the crop were lost with an estimated $1 billion worth of damage; A bacteria genetically altered to make it clean up soil polluted by a chemical herbicide worked on the herbicide, but killed crucial soil fungi, putting basic soil fertility at risk.

They pose risks to human health....

Never before have genes from bacteria, rats, or scorpions, to name a few, been part of the human diet. Yet tests on the safety of new foods containing strange genes have been terrifyingly inadequate. Tests have focused more on limited field trials and not on the impact on human health and the environment. Governments have expressed fears, for example, that crops containing an ampicillin resistance gene could undermine the treatment of human and animal disease. Ampicillin is one of our most important antibiotics. Its feared the resistance gene could spread to harmful bacteria - making them immune to this vital treatment. Allergies could also increase. Many

people are allergic to food plants because of proteins produced by the plant as a defence against diseases and pests. Since genetically engineered plants are specifically designed to produce increased quantities of these proteins, the risk of allergies is also increased.

They could change the environment irreversibly....

We could be releasing "biological pollutants" into the environment which are even more damaging than chemical pollutants. Because they are alive, genetically engineered crops may end up spreading their genes to related plants growing around them. Pesticide resistance genes could turn weeds into super weeds, and insects into super bugs - both difficult to control without massive use of chemicals. Crops developed to produce their own insecticide could end up killing harmless birds and butterflies. It is also naive in the extreme to believe, as industry suggests, that genetically engineered crops will stay confined to the agricultural field they are grown in; or that genetically engineered fish will stay in the pens where they are bred without spreading further into the environment.

(Genetic Engineering: A Costly Risk,Greenpeace International, February 1997)

1. 請說明 statement A 中關於 GMOs 對環境議題之主要貢獻，並闡述 statement B 中對同一論點之不同意見(以英文回答)(20%)

2. 在看完 statement A 與 statement B 之後，你將建議相關部門對 GMOs 產品之引進採取開放或限制政策？請附三項理由(均以五十字為限，含標點符號)說明你的決定。(15%)

三、 請在閱讀完下列文章後，請以英文回答下列問題（30%）

The convenience and pervasiveness of e-mail communication on office computers leaves employers with an easily monitored digital record. With the increase in workplace technologies, both employers and employees are wrestling with the balance of e-mail privacy expectations and the need for secure, productive work habits. Although many companies have established policies that vaguely warn against personal use of e-mail accounts, compiled dossiers of their e-mail activities are surprising a growing number of workers.

Recent cases have held that employers have a right to search an employee's e-mail. Some have held that the employer must give the employee notice; however, the major case in this area has held that notice was not needed because the e-mail was on the equipment or property of the employer. Employers are now using e-mail monitors or scanning programs in order to monitor their employees' e-mail usage. This e-mail dilemma is not only being faced by U.S. employers; on October 24, 2000, the new Regulation of Investigatory Powers Act went into effect in Great Britain. This new regulation permits employers to monitor staff phone calls, e-mails and Internet activity without consent, and demonstrates that e-mail issues have become a global technology problem.

Employers Have a Right to Search E-mail

E-mail privacy cases have started cropping up around the country. Employees are arguing that their privacy is being invaded by employers without adequate notice. Although the case law is very murky in this area, employers generally are given wide discretion on how to regulate their Internet and e-mail services. In recent cases, state courts have ruled that, even without notice, employers have a right to search e-mail.

Employers argue that an employee is at work to do work and that they (employers) have a legitimate interest in their worker's performance. Privacy advocates claim that companies should not be monitoring their employees unless they have proof that the employee is failing to complete his or her work or is misusing company resources.

Several states, including California, Illinois, and Massachusetts, are developing legislation to limit an employer's ability to read workers' e-mail without his or her knowledge or without good cause.

Smyth v. Pillsbury Company

Smyth v. Pillsbury is the largest case to date pertaining to e-mail privacy. A United States District Court in Pennsylvania ruled that the Pillsbury Company did not have to notify Mr. Smyth that his e-mails would be examined. The court reasoned that since it was Pillsbury's equipment, the company was entitled to examine its contents. Smyth received certain electronic messages on his home computer from his supervisor over the company e-mail system. He then exchanged e-mail that contained offensive references and threats concerning the company's sales management. Specifically, Smyth's e-mail derided the company's sales management team and referred to a holiday office party as the "Jim Jones Kool-Aid affair." Company executives saw a printout of that message, then read all of his e-mail messages and terminated him for "inappropriate and unprofessional comments" over the company system. Smyth proved that the company had repeatedly assured employees that all e-mail would remain confidential and privileged.

New York Times

E-mail privacy issues have occurred at many well-known companies and employees are being fired over those funny little forwards that many of us send out each morning. On November 30, 1999, the New York Times Co. fired 23 employees who were accused of contributing to a hostile work environment because they repeatedly traded unsavory batches of unsolicited personal e-mail messages that contained dirty jokes and nude pictures. The New York Times also reprimanded several more employees who had simply received the offensive e-mail and then deleted it. Those workers were punished for failing to alert management to the offending e-mail messages, a direct violation of company policy.

...

E-mail Monitors

E-mail monitors are programs that are used by employers to scan the e-mail of employees. While critics say this is a violation of an employee's privacy, employers respond that this measure is needed to monitor worker productivity, as well as protect against potential sexual harassment incidents. Employers feel they need to protect themselves and their companies.

E-mail security programs are increasingly being used by employers to continuously scan employee e-mail for key words. One such program is called

MailMarshal. Another product, Spector, can take snapshots of employees' computer monitors, rendering encryption and other privacy tools ineffective. Employers have the ability to scan e-mails for such things as unusually large file sizes, confidential information or inappropriate words.

A recent Seattle Times survey noted that more than 73% of large U.S. companies record and review phone calls, e-mail, Internet connections and computer files. Some predict that within the next year that figure will rise to 80%. A recent ACLU study estimates that more than 20 million workers have their e-mail, computer files or voice mail messages searched by employers.

...

As e-mail becomes a utility of the modern workplace, clashes are bound to escalate.

(Employers and E-mail: Where to Draw the Line, The Internet Law Journal/ Published: Dec. 26, 2000 by Jeffrey Bartow)

1. **Please identify the conflicting considerations discussed in this article in English.(10%)**

2. **How to balance the conflicting considerations identified in question 1 in English.(20%)**