

MARKSCHEME

NOVEMBER 2005

INFORMATION TECHNOLOGY IN A GLOBAL SOCIETY

Standard Level

Paper 2

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SECTION A

Answer **all** parts of the question.

Area of Impact: Business and Employment

1. (a) **Identify *two* developments in recent years that make India, and other developing countries, suitable locations for BT call centres.** [2 marks]

Award [1 mark] for each development clearly identified up to a maximum of [2 marks].

- improved education standards in IT (e.g. knowledgeable IT personnel, improved IT educational programmes)
- telecommunication improvements (e.g. wider access, more bandwidth)
- reduced cost in telecommunications

Reward other acceptable answers only with the approval of the team leader.

- (b) **Describe *two* technical issues that need to be addressed to allow the call centres in India to access the necessary BT files.** [4 marks]

Award [1 mark] for a relevant technical issue clearly identified up to a maximum of [2 marks].

Award [1 additional mark] for further description of the technical issue up to a maximum of [2 additional marks].

- security issues concerning access to the data base (Login and password) [1 mark] *description/example* (e.g. workers at call centres must have a login and a password to use when they begin their shift to access the data base.) [1 additional mark]
- security issues concerning protection of the data in the data base against virus [1 mark] *description/example* (e.g. computers at call centres must have appropriate antivirus software to prevent virus from infecting the UK data base.) [1 additional mark]
- security issues – preventing hackers from capturing information [1 mark] *description/example* (e.g. encryption of data to prevent hackers to have access to information requested.) [1 additional mark]
- call centres need to be part of WAN or private network to communicate with central database [1 mark] *description/example* (e.g. a permanent open line for reliable immediate access to the database.) [1 additional mark]
- UK database must allow multiple accesses to allow several workers at call centres to access information simultaneously [1 mark] *description/example* (e.g. different calls may ask similar questions and different workers at call centres should be able to search and extract data from the database simultaneously.) [1 additional mark]
- ensure the compatibility of software between the remote call centre and the existing database [1 mark] *description/example* (e.g. consequences if it is not compatible, significance if it is compatible) [1 additional mark]
- sufficient bandwidth [1 mark] *description/example* (e.g. to ensure an acceptable level of performance for the personnel at the call centre) [1 additional mark].

Reward other acceptable answers only with the approval of the team leader.

- (c) Describe *two* benefits to developing countries of establishing these overseas call centres. **[4 marks]**

Award [1 mark] for clearly identifying a relevant benefit to developing countries up to a maximum [2 marks].

Award [1 mark] for further description up to a maximum of [2 additional marks].

- increased employment **[1 mark]**
description/example (e.g. economically beneficial for the country, improved standard of living) **[1 additional mark]**
- more emphasis on raising educational standards **[1 mark]**
description/example (e.g. an example of better prospects for individuals) **[1 additional mark]**
- encourage the growth of other related businesses **[1 mark]**
description/example (e.g. an example of how this has happened, growth of more IT support companies) **[1 additional mark]**
- developing countries benefit from the establishment of the technical infrastructure/expertise in the area **[1 mark]** *description/example* (e. g. this infrastructure could be used also in other areas/expertise in the area could be used by other businesses.) **[1 additional mark]**
- increase profit from taxes **[1 mark]** *description/example* (e. g. businesses have to pay taxes to the countries they operate in.) **[1 additional mark]**
- increase of foreign investment in the country **[1 mark]** *description/example* (e.g. BT pays for the installation of the equipment and the facilities making an investment in the country) **[1 additional mark]**.

Reward other acceptable answers only with the approval of the team leader.

- (d) Discuss *two* possible concerns that residents of the UK may have about the trend of establishing overseas call centres. Evaluate your arguments. **[10 marks]**

Award only [1 mark] for a concern that is only identified.

Award up to [3 marks] for each concern that is fully examined.

Award up to [4 additional marks] for evaluation of the arguments relating to the possible concerns anywhere in the response.

Award a maximum of [10 marks].

concerns:

- loss of jobs caused by outsourcing **[1 mark]**
description/example (e.g. causing the closing of the local call centre)
[1 additional mark]
discussion at different level/perspective (e.g. either a contrary argument or impact such as family problems) **[1 additional mark]**
- influx of foreign employees coming to the developed country **[1 mark]**
description/example (e.g. because they have been pulled in by BT)
[1 additional mark]
discussion at different level/perspective (e.g. difficulties with integrating foreign employees into the culture of the company, possible resentment)
[1 additional mark]
- pressure from BT for employees to spend time in foreign call centre **[1 mark]**
description/example (e.g. in order to train local employees)
[1 additional mark]
discussion at different level/ perspective (e.g. disruption of the person's family life) **[1 additional mark]**
- deterioration of quality of service **[1 mark]**
description/example (e.g. customers in developed countries may not be able to understand the foreign accents) **[1 additional mark]**
discussion at different level/ perspective (e.g. dissatisfaction with call centre service, inability to use the service) **[1 additional mark]**.

Evaluation or weighing up of arguments may include:

- evaluate impact of positive aspects vs. negative aspects
- comparisons between items (apportioning priority)
- evaluation of solutions to address concerns and their effectiveness
- short term and long term comparison and evaluation
- long range impact of the concerns and evaluation.

Reward other acceptable answers only with the approval of the team leader.

SECTION B

Area of Impact: Education

2. (a) Identify *two* technical precautions that would need to be implemented to ensure that scanned versions of the examination papers are not altered and the marks are secure. **[2 marks]**

Award [1 mark] for each development clearly identified up to a maximum of [2 marks].

- examination papers are saved as pdf files
- examiners use password access to the examination papers
- firewall prevents unauthorized access to the server
- examiners have limited access to only those examination papers which they are marking
- marks are encrypted before transmission.

Reward other acceptable answers only with the approval of the team leader.

- (b) Describe *two* administrative advantages for the examination organization of marking examinations online. **[4 marks]**

Award [1 mark] for identifying a relevant administrative advantage up to a maximum of [2 marks].

Award [1 additional mark] for a description of an administrative advantage up to a maximum of [2 additional marks].

- reduction in time delay of returning marked examination papers **[1 mark]**
description/example (e.g. time delay is reduced due to the examiner being directly linked to the server) **[1 additional mark]**
- exam board can issue results sooner **[1 mark]**
description/example (e.g. less movement of examination papers by post) **[1 additional mark]**
- losses of examination papers in the post is reduced **[1 mark]**
description/example (e.g. the examiner no longer sends the examination papers back to the organization by post but submits the marked papers electronically) **[1 additional mark]**
- same examination paper can be quickly sent electronically to a number of examiners for marking **[1 mark]**
description/example (e.g. examining board always check on the accuracy of examiners and this provides an efficient method for doing this) **[1 additional mark]**
- project management software can be included in the system **[1 mark]**
description/example (e.g. tracks the progress of marking by examiners) **[1 additional mark]**
- cost saving **[1 mark]** *description/example* (e.g. saving on all the postage to examiners around the world) **[1 additional mark]**
- scanned papers may be saved and organized in computer directories **[1 mark]**
description/example (e.g. this allows for easier access and does not occupy the physical space papers do) **[1 additional mark]**.

Reward other acceptable answers only with the approval of the team leader.

(c) Describe *two* advantages to students of having their papers marked online.

[4 marks]

Award [1 mark] for identifying a relevant advantage up to a maximum of [2 marks].

Award [1 additional mark] for a description of an advantage up to a maximum of [2 additional marks].

- students can receive their marks earlier **[1 mark]**
description/example (e.g. sometimes students have missed their placements in university due to delayed results) **[1 additional mark]**
- results will be more accurate **[1 mark]**
description/example (e.g. easier to detect unreliable examiners and marking) **[1 additional mark]**
- students can theoretically receive quickly an electronic copy of a marked examination paper **[1 mark]**
description/example (e.g. students are able to determine if an appeal is necessary and request it quicker) **[1 additional mark]**.

Reward other acceptable answers only with the approval of the team leader.

- (d) **Discuss *two* social issues, which need to be considered before an examination organization can implement an online marking system. Evaluate your arguments.**
[10 marks]

Award only [1 mark] for a social issue that is only identified.

Award up to [3 marks] for each social issue that is fully examined.

Award up to [4 additional marks] for evaluation of the arguments relating to social issues anywhere in the response.

Award a maximum of [10 marks].

- health /ergonomic issues for examiners **[1 mark]**
description/example (e.g. online marking involves extended periods of using a computer) **[1 additional mark]**
discussion at different level/ perspective (e.g. resulting in eye strain, RSI, backaches) **[1 additional mark]**
- cost issues **[1 mark]**
description/example (e.g. examiners must have requisite facilities at home) **[1 additional mark]**
discussion at different level/ perspective (e.g. address specific computer or Internet connection issues or issues such as who is going to pay the costs) **[1 additional mark]**
- home telephone lines can be blocked **[1 mark]**
description/example (e.g. the examiner only has a modem connection via the phone line) **[1 additional mark]**
discussion at different level/ perspective (e.g. family tension because the telephone is not available) **[1 additional mark]**
- organization must train examiners/admin staff to use the system **[1 mark]**
description/example (e.g. the marking processes are completely different from before) **[1 additional mark]**
discussion at different level/ perspective (e.g. cost and time implications) **[1 additional mark]**
- some examiners are unwilling to change to the new system **[1 mark]**
description/example (e.g. causing problems for the organization) **[1 additional mark]**
further discussion at different level/ perspective (e.g. shortage of examiners, recruiting problems, problems in having to run two types of marking) **[1 additional mark].**

Evaluation or weighing up of arguments up to a maximum **[4 marks]** may include:

- evaluate impact of positive aspects vs. negative aspects
- comparisons between items (apportioning priority)
- evaluation of solutions to address problems and their effectiveness
- short term and long term comparison and evaluation
- long range impact of developments and evaluation.

Reward other acceptable answers only with the approval of the team leader.

Area of Impact: Health

3. (a) **Identify *two* distinct types of medical information that could be stored about an individual on a smart card.** **[2 marks]**

Award [1 mark] for each type of medical information identified up to a maximum of [2 marks].

- allergies (i.e. penicillin, hay fever)
- diagnoses (i.e. hepatitis, diabetes, migraine headaches, epilepsy)
- continuing medications (i.e. blood pressure medication)
- blood type
- immunizations
- disabilities (i.e. partial blindness, paralysis)
- DNA.

Reward other acceptable answers only with the approval of the team leader.

- (b) **Describe *two* advantages to an individual cardholder of having a smart card containing medical information.** **[4 marks]**

Award [1 mark] for clearly identifying a relevant advantage to an individual cardholder up to a maximum [2 marks].

Award [1 additional mark] for a description of an advantage up to a maximum [2 additional marks].

- useful in the event of an emergency **[1 mark]**
description/example (e.g. patient details would be immediately available to doctors) **[1 additional mark]**
- patient gets quicker treatment if the network is not available **[1 mark]**
description/example (e.g. doctors can still have access to patient information stored on the smartcard) **[1 additional mark]**
- the smart card can provide health clearance without a doctor visit **[1 mark]**
description/example (e.g. expedites applying for employment) **[1 additional mark].**
- patient's information is kept private because it is in digital form **[1 mark]**
description/example (e.g. digital data needs a device to be read – paper files handled by hospital staff are available for many individuals to read) **[1 additional mark]**
- less mistakes by misinterpretation of handwriting **[1 mark]** *description/example* (e.g. information in the smart card is in digital form and easier than doctor's handwriting to read in paper files) **[1 additional mark]**
- smart card provides data about a senior (old age) person/person with communication problems **[1 mark]** *description/example* (e.g. senior citizens or people with disabilities might not remember details of medical conditions that will be in the smart card) **[1 additional mark]**
- no need to carry papers to medical appointments/no need to carry a card with blood type, allergies, etc **[1 mark]** *description/example* (e.g. smart card will contain this information and can be read by doctors in an appointment/by emergency doctors in an emergency – or – allows doctors to access the data base with all the information X rays and test results) **[1 additional mark].**

Reward other acceptable answers only with the approval of the team leader.

- (c) Describe *two* benefits for doctors or medical institutions from having a national system for accessing and storing medical records. **[4 marks]**

Award [1 mark] for clearly identifying relevant benefits up to a maximum [2 marks]

Award [1 additional mark] for a benefit fully described up to a maximum [2 additional marks].

- eliminates paperwork being transferred between doctors **[1 mark]**
description/example (e.g. all medical records for a patient are located in one centralized database) **[1 additional mark]**
- less danger of losing the archive of a patient's medical data **[1 mark]**
description/example (e.g. patient's paper files containing the results of medical examinations and x-rays are eliminated) **[1 additional mark]**
- centralized files allow for more thorough and reliable analysis of illnesses across a national population **[1 mark]**
description/example (e.g. allows for the analysis of specific illnesses leading to improved treatments, better overview of national health patterns) **[1 additional mark]**
- more efficient health care can be provided **[1 mark]**
description/example (e.g. This means no paper or x-rays need be physically produced and taken from the place where the tests are conducted and from the doctor's office) **[1 additional mark]**
- doctors with access to the national system of medical information may have better reputation **[1 mark]** *description/example* (e.g. as they can make a better/faster diagnosis as previous exams will be available in the database facilitating their work) **[1 additional mark]**
- medical institutions and doctors from all over the country can offer their services to patients who have their records in these files **[1 mark]** *description/example* (e.g. they may have patients who travel and would otherwise phone their doctors or fly back home) **[1 additional mark]**
- doctors and medical institutions will rely on the system to keep the information (including backups) **[1 mark]** *description/example* (e.g. no need for them to worry about cabinets for paper files or backups of hard disks with their patient's information/less physical space used up by paper files/smaller offices can opt to work without a secretary) **[1 additional mark]**.

Reward other acceptable answers only with the approval of the team leader.

- (d) **Discuss *two* ethical policies, which must be implemented regarding the storage of patients' medical information. Evaluate your arguments. [10 marks]**

Award only [1 mark] for an ethical policy that is only identified.

Award up to [3 marks] for each ethical policy that is fully examined.

Award up to [4 additional marks] for evaluation of the arguments relating to ethical policies anywhere in the response.

Award a maximum of [10 marks].

- the patient's data must be accurate **[1 mark]**
description/example (e.g. there is a risk that the patient will receive the wrong treatment **[1 additional mark]**
discussion at different level/perspective (e.g. processes are needed to ensure the accuracy of patient information) **[1 additional mark]**
- the patient has the right to view his/her personal data **[1 mark]**
description/example (e.g. to ensure its accuracy **[1 additional mark]**
discussion at different level/ perspective (e.g. patient may request modifications) **[1 additional mark]**
- security measures must be implemented **[1 mark]**
description/example (e.g. to ensure the privacy of individuals' web-based medical records **[1 additional mark]**
discussion at different level/perspective (e.g. secure access to web-based personal medical files is only possible through a patient's PIN and a doctor's PIN access or through the patient's biometric data stored on the card) **[1 additional mark]**
- personal data cannot be shared without the patient's permission **[1 mark]**
description/example (e.g. to protect the patient's privacy rights) **[1 additional mark]**
discussion at different level/ perspective (e.g. patient information cannot be shared with employers or other parties) **[1 additional mark]**.

Evaluation or weighing up of arguments up to a maximum **[4 marks]** may include:

- evaluate impact of pros and cons of each ethical concern
- comparisons between items (apportioning priority)
- evaluation of solutions to address problems and their effectiveness
- short term and long term comparison and evaluation
- long range impact of developments and evaluation.

Reward other acceptable answers only with the approval of the team leader.

Area of Impact: Arts, Entertainment and Leisure

4. (a) Describe *two* problems involving technical standards, which must be overcome in order for effective on-demand services to be provided to home users. [4 marks]

Award [1 mark] for clearly identifying a problem involving technical standards up to a maximum [2 marks].

Award [1 additional mark] for a description of each problem up to a maximum [2 additional marks].

- possible insufficient bandwidth [1 mark]
description/example (e.g. causing problems with the transfer of digital images, movies and sound/remarks about large file sizes involved)
[1 additional mark]
- ineffective compression/decompression algorithms [1 mark]
description/example (e.g. causing slow display of video images or the playing of sound/comments about how decompression is done ‘on the fly’)
[1 additional mark]
- lack of common standards [1 mark]
description/example (e.g. transmission protocol or storage formats)
[1 additional mark].

Reward other acceptable answers only with the approval of the team leader.

- (b) Describe *three* advantages for consumers of distributing video films through on-demand services on the Internet instead of on DVDs. [6 marks]

Award [1 mark] for clearly identifying three advantages up to a maximum [3 marks].

Award [1 additional mark] for a description of each advantage up to a maximum [3 additional marks].

- customers worldwide will have access to films when they are released [1 mark]
description/example (e.g. films can be distributed immediately and customers do not need to wait for translations and other distribution processing)
[1 additional mark]
- access to a greater number and types of video films [1 mark]
description/example (e.g. individuals will be able to access from worldwide sources) [1 additional mark]
- customers have unlimited access to films [1 mark]
description/example (e.g. films will be available from a person's home 24 hours a day/7 days a week) [1 additional mark].
- the customer has a digital product so there is no physical product that may get lost or damaged [1 mark] *description/example* (e.g. DVDs can break or get damaged or even get lost while if the file is lost the customer may be able to request it again – depending on the type of contract) [1 additional mark].
- there is no need to travel to the store [1 mark] *description/example* (e.g. customers can buy / request the product from home without spending time traveling to the shop) [1 additional mark]

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Question 4 continued...

- use of space at home is more effective **[1 mark]** *description/example* (e.g. there is no need to assign cupboards or boxes for CDs and DVDs as digital data will be kept in the computer) **[1 additional mark]**
- cost – this on demand service could be cheaper than buying CDs or DVDs **[1 mark]** *description/example* (e.g. it does not involve the production of a physical media and the distribution to the stores) **[1 additional mark]**.

Reward other acceptable answers only with the approval of the team leader.

- (c) **Examine two strategies, which could be adopted by entertainment industries to try to eliminate the piracy of digital entertainment files (e.g. music, film and television programs). Evaluate your arguments.** **[10 marks]**

Award only [1 mark] for a strategy that is only identified.

Award up to [3 marks] for each strategy that is fully examined.

Award up to [4 additional marks] for evaluation of the arguments relating to strategies anywhere in the response.

Award a maximum of [10 marks].

- push for anti piracy laws **[1 mark]** *description/example* (e.g. international approach, agreements) **[1 mark]** *discussion at different level/perspective* (e.g. system for industry-wide co-operation must be established) **[1 additional mark]**
- establish an online system for locating and tracking the illegal access and distribution of films **[1 mark]** *description/example* (e.g. detect IP addresses of users) **[1 mark]** *discussion at different level/ perspective* (e.g. requires co-operation of ISPs, difficulties with worldwide cooperation) **[1 additional mark]**
- develop information programs for the public to educate them about the negative impacts of piracy **[1 mark]** *description/example* (e.g. it is unjust and illegal) **[1 mark]** *discussion at different level/ perspective* (e.g. realise that it is in their own interests to co-operate) **[1 additional mark]**
- develop a security system which prevents the downloading of on-demand videos to recording devices **[1 mark]** *description/example* (e.g. encryption techniques) **[1 mark]** *discussion at different level/ perspective* (e.g. users must have appropriate decoders) **[1 additional mark]**.

Evaluation or weighing up of arguments up to a maximum [4 marks] may include:

- evaluate impact of pros and cons of each strategy
- comparisons between items (apportioning priority)
- evaluation of solutions to address problems and their effectiveness
- short term and long term comparison and evaluation
- long range impact of developments and evaluation.

Reward other acceptable answers only with the approval of the team leader.

Area of Impact: Science and Environment

5. (a) **Outline how remotely sensed digital data from geographical features and objects on the earth's surface can be used to construct photographs.** [2 marks]

Award [1 mark] for clearly outlining an aspect of how remotely sensed data can be used to construct photographs up to a maximum of [2 marks].

Response should include two aspects of remote sensing from the following:

- reflected energy from the earth's surface is measured according to different wavelength 'bands' [1 mark]
- Satellites collect data from a particular footprint of geographical area (e.g. 30 square meters) for measuring reflected energy [1 mark]
- Data is converted and represented in red, green and blue on the computer screen representing the different wavelength bands and produces a true color image) [1 mark]
- A particular location is revisited on regular intervals and can be used to record the change in geographical conditions and make comparative images (e.g. changes in vegetation, forestation, coastlines) [1 mark].

Reward other acceptable answers only with the approval of the team leader.

- (b) **Describe two benefits of using data collected from satellites compared with data collected from ground level.** [4 marks]

Award [1 mark] for clearly identifying a benefit up to a maximum of [2 marks].

Award [1 additional mark] for further description of a benefit up to a maximum of [2 additional marks].

- reliability of the data [1 mark]
description/example (e.g. wider sampling possible over a long period of time which may not be possible with ground systems that can be subject to ground conditions) [1 additional mark]
- continuous collection 24/7 [1 mark]
description/example (e.g. data is collected and recorded from the same geographical region on a regular basis whenever the satellite passes over the region) [1 additional mark]
- can survey inaccessible areas [1 mark]
description/example (e.g. data can be collected from some areas that cannot be easily reached by land/example given such as oceans or mountain tops) [1 additional mark]
- data can be used for creating more accurate real-world models (simulations) [1 mark]
description/example (e.g. larger sampling and more accurate data is possible from satellite systems than ground systems) [1 additional mark].

Reward other acceptable answers only with the approval of the team leader.

- (c) Describe *two* ways that data collected from satellites could benefit the public.
[4 marks]

Award [1 mark] for clearly identifying a benefit up to a maximum of [2 marks].

Award [1 additional mark] for a description of a benefit up to a maximum of [2 additional marks].

- Enables professionalism in the drawing of accurate maps of geographical regions
[1 mark]
description (e.g. images of geographical areas can be created over a period of time, areas that are difficult to access can be represented by digital images)
[1 additional mark]
- Changes in geographical areas can help concerned people in determining the deterioration or improvement in conditions **[1 mark]**
description (e.g. wind erosion, water logging and flooding, vegetation growth to benefit various groups of people)
- help farmers improve management decisions and economic growth **[1 mark]**
description (e.g. monitoring crop yield) **[1 additional mark]**
- benefits people doing research into location of metal ores **[1 mark]**
description (e.g. magnetic fields can be measured) **[1 additional mark]**
- warnings of disasters (floods, hurricanes) **[1 mark]**
description (e.g. agencies may have access to real time information from satellites and send warnings to residents of areas in danger to prevent loss of lives)
[1 additional mark]

Reward other acceptable answers only with the approval of the team leader.

- (d) **Discuss *two* ethical concerns that the public may have about the collection of data by remote sensing and its use to produce satellite images. Evaluate your arguments.** **[10 marks]**

Award only [1 mark] for an ethical concern that is only identified.

Award up to [3 marks] for each ethical concern that is fully examined.

Award up to [4 additional marks] for evaluation of the arguments relating to ethical concerns anywhere in the response.

Award a maximum of [10 marks].

Ethical concern:

- to what extent is the software reliable? **[1 mark]**
description/example (e.g. geometrical distortions can affect the accuracy of the data collected) **[1 additional mark]**
discussion at different level/ perspective (e.g. faulty conclusion could be drawn from the results, reliable methods for correcting distortions need to be applied) **[1 additional mark]**
- how can the privacy of individuals and their property be protected? **[1 mark]**
description/example (e.g. people's activities may be observed) **[1 additional mark]**
discussion at different level/ perspective (e.g. possibility of intrusive actions taken as a result of covert observations) **[1 additional mark]**
- Is the data stored on secure servers with only authorized access? **[1 mark]**
description/example (e.g. data may be tampered with) **[1 additional mark]**
discussion at different level/perspective (e.g. could be dangerous consequences if changed data used for planning plane flight paths) **[1 additional mark]**
- who owns the data that has been collected? **[1 mark]**
description/example (e.g. does the data belong to the owner of the satellite or the organization commissioning the work?) **[1 additional mark]**
discussion at different level/ perspective (e.g. may be subject to legal action if contentious, ethical responsibility to report suspicious images) **[1 additional mark]**.

Evaluation or weighing up of arguments up to a maximum **[4 marks]** may include:

- evaluate impact of pros and cons of each ethical concern
- comparisons between items (apportioning priority)
- evaluation of solutions to address problems and their effectiveness
- short term and long term comparison and evaluation
- long range impact of developments and evaluation.

Reward other acceptable answers only with the approval of the team leader.

Area of Impact: Politics and Government

6. (a) **Explain how governments are able to monitor the Internet activities of their citizens.** **[2 marks]**

Award [1 mark] for identifying how governments monitor the Internet activities of their citizens up to a maximum [1 mark].

Award [1 additional mark] for an explanation.

- Internet filter installed by ISPs **[1 mark]**
description/example (e.g. filters dictated by government, reports of attempted access can be passed back) **[1 additional mark]**
- employ people to monitor to websites, chat rooms and emails accessed by the people **[1 mark]**
description/example (e.g. penalties for improper use) **[1 additional mark]**
- tight control on Internet cafes **[1 mark]**
description/example (e.g. required to report misuse, register users) **[1 additional mark]**
- collect IP addresses of those accessing certain sites **[1 mark]**
description/example (e.g. locate individuals from these addresses) **[1 additional mark]**.

Reward other acceptable answers only with the approval of the team leader.

- (b) **Describe two reasons why such governments would want to limit the access to foreign search engines.** **[4 marks]**

Award [1 mark] for identifying a reason up to a maximum of [2 marks].

Award [1 additional mark] for a reason that is described up to a maximum of [2 additional marks].

- national bias perceived in foreign search engines **[1 mark]**
explanation (e.g. foreign bias perceived and/or bias against the country's policies) **[1 additional mark]**
- foreign advertisements can be angled towards foreign companies **[1 mark]**
explanation (e.g. stimulating online purchases and decreasing local sales) **[1 additional mark]**
- restrict availability of foreign ideas and information **[1 mark]**
explanation (e.g. protect local culture) **[1 additional mark]**
- fear of search engines which could find information against the interests of the government **[1 mark]**
explanation (e.g. prevent awareness of foreign governments' policies, local people may become dissatisfied with their government and could lead to unrest) **[1 additional mark]**.

- (c) Describe *two* methods that governments can use to control online information available to the national population. **[4 marks]**

Award [1 mark] for identifying a reason up to a maximum of [2 marks].

Award [1 additional mark] for a reason that is described up to a maximum of [2 additional marks].

- Internet access to some websites could be limited by ISPs through their computers **[1 mark]**
description/example (e.g. certain websites could be banned by government, reports of attempted access can be passed back) **[1 additional mark]**
- government laws banning access to certain online information sources **[1 mark]**
description/example (e.g. legal action for offences) **[1 additional mark]**
- Downloading and installation of blocking software on client computers by ISPs **[1 mark]**
description/example (e.g. can be regularly modified and updated) **[1 additional mark].**

Reward other acceptable answers only with the approval of the team leader.

- (d) **Discuss *two* social or ethical outcomes, which could result from a large number of the residents of the country having access to the Internet. Evaluate your arguments.** **[10 marks]**

Award only [1 mark] for a social and/or ethical outcome that is only identified.

Award up to [3 marks] for a social and/or ethical outcome that is fully examined.

Award up to [4 additional marks] for evaluation of the arguments relating to a social and/or ethical outcome anywhere in the response.

Award a maximum of [10 marks].

- more websites will be developed in a local indigenous style **[1 mark]**
description/example (e.g. such as local language) **[1 mark]**
discussion at different level/ perspective (e.g. promote local culture, businesses) **[1 additional mark]**
- more foreign websites will create advertising aimed at that country **[1 mark]**
description/example (e.g. try to sell goods into that market) **[1 mark]**
discussion at different level/ perspective (e.g. wider choices for local population) **[1 additional mark]**
- change in lifestyle for local people **[1 mark]**
description/example (e.g. develop tastes for new ideas, goods) **[1 mark]**
discussion at different level/ perspective (e.g. enriched lifestyle, opportunities) **[1 additional mark]**
- increase in Internet related business and employment in the country **[1 mark]**
description/example (e.g. expansion of e-business, Internet cafes) **[1 mark]**
discussion at different level/ perspective (e.g. general boost to economy) **[1 additional mark]**.

Evaluation or weighing up of arguments up to a maximum **[4 marks]** may include:

- evaluate impact of positive aspects vs. negative aspects
- comparisons between items (apportioning priority)
- evaluation of solutions to address problems and their effectiveness
- short term and long term comparison and evaluation
- long range impact of developments and evaluation.

Reward other acceptable answers only with the approval of the team leader.
