

Effects of Using ICT

1. Discuss the use of blogs and social networking sites as means of communication.

Six from:

1. Blog is public/anyone can see it
2. Blog is online diary/personal opinions
3. Viewers can only add comments on blogs/authors can reply to comments
4. Only author can edit blog
5. Social networking sites might only be available to friends of user
6. Social networking site enable users to send messages to small group of 'friends' to arrange meetings
7. Friends can respond more quickly to messages within the group to confirm availability
8. Easier to share photographs with others
9. Social networking sites can lead to seclusion from society
10. Social networking sites can lead to cyber bullying

2. Robots are now used on many car production lines.

Tick four ways that their use has affected workers in the car industry.

	✓
More technical staff have been employed	
Car workers can have more breaks	
Car workers have to lift all the heavy parts	
Car workers get paid less	
Car workers have been made unemployed	
Car workers have had to be retrained	
Work areas are dirtier	
There are fewer manual tasks to do	

	✓
More technical staff have been employed	✓
Car workers can have more breaks	
Car workers have to lift all the heavy parts	
Car workers get paid less	
Car workers have been made unemployed	✓
Car workers have had to be retrained	✓
Work areas are dirtier	
There are fewer manual tasks to do	✓

3. A bank is looking into a variety of security measures to protect its customers' data. It is worried that hackers may gain access and cause viruses to infect the system.

(a) Explain what is meant by a virus and what it does.

(b) Describe three ways in which a bank customer could protect their computer from becoming infected.

(a) Three from:

1. A piece of programming code/software/program/script
2. It replicates itself
3. Attaches itself to files
4. Corrupts/deletes files/data
5. Can corrupt or erase the contents of the hard disk
6. Can completely fill the hard disk/memory making it unusable/slows down operations
7. Makes software/operating system unusable
8. One mark is available for an accurate description of method of transmission

(b) Three from:

1. Regularly update antivirus/use/install antivirus
2. Only use storage media from known sources
3. Only accept software/download software from known/trusted websites
4. Only visit trusted websites
5. Only open attachments from known sources/people you know

4. Describe what is meant by a

(a) Blog and

(b) A wiki.

(a) Two from:

1. Web log
2. Personal journal/online diary
3. Owners' observations/opinions on a topic
4. Can have links to other sites
5. Others can post comments
6. Frequently updated by owner

(b) Two from:

1. Allows users to create/edit web pages using a web browser
2. Many people can contribute/edit/update entries
3. Anyone can contribute so not to be taken as totally accurate
4. Holds information on many topics which can be searched

5. (a) Explain what is meant by software copyright.

(b) Explain how software manufacturers attempt to prevent copyright being broken.

(a) Two from:

1. Lawful protection.....given to authors/software companies and publishers
2. Relates to the software the author/publisher/company created/published
3. Prohibits purchaser from making unlimited copies/lend it to others/change the software/sell it without the company's permission

(b) Two from:

1. Encryption of the execution code requires a key to run
2. Use of a dongle
3. Registration system requiring the typing in of a registration code
4. "Guards" are hardware or software modules that monitor the running program and ensure that it has not been tampered with in any way
5. Activation code which can be used only on a limited number of machines

6. Robots are now used on many car production lines.

Discuss the benefits and drawbacks to the car company of using robots.

Seven from:

1. Car production is more consistent/robots produce the same standard every time
2. Cost – once bought they do not have to be paid/fewer employees so lower costs/don't have to pay robots wages/lower running costs
3. No industrial disputes
4. Greater productivity
5. Greater accuracy/robots are more accurate
6. Can work in hazardous/extreme conditions/can lift heavier loads
7. Robots don't take breaks/can work 24 hours a day 7 days a week/can work continuously
8. Robots have to be reprogrammed when there is a small change/can't think for themselves
9. Robots need programming in order to be adaptable
10. Expensive start up costs – redundancy payments
11. Expensive start up costs – have to spend money on training workers to use robots
12. Expensive start up costs – buying of robots/programming of robots
13. Computer crash would halt production
14. Maintenance/repair costs can be expensive

7. Describe how the following health problems can arise due to the use of computers. Give a different cause for each.

1. RSI in the wrists

2. RSI in the fingers

3. Headaches

4. Back pain

RSI in the wrists – caused by repetitive typing/prolonged gripping of mouse

RSI in the fingers – caused by repetitive clicking of mouse

Headaches – staring at the screen for too long

Back pain – sitting in the same position for long periods

8. Tick whether the following statements apply to Blogs or apply to Wikis.

	Blogs	Wikis
Usually in some form of chronological order		
Usually many contributors and authors		
Usually personal		
Postings tend to be short in length		

	Blog	Wiki
Usually in some form of chronological order	✓	
Usually many contributors and authors		✓
Usually personal	✓	
Postings tend to be short in length	✓	

9. Describe three differences between a blog and a wiki.

Three from:

1. Blog usually has a single author/ a Wiki usually has many authors
2. Blog is usually in reverse chronological structure/ a Wiki has a structure determined by content and users
3. Blog is usually personal/someone's opinion/ a Wiki is usually objective
4. Can't edit a blog/ a Wiki can be edited/ Can only add comments to a blog

10. There are many safety issues associated with the use of computers.

Tick three methods which could be used to avoid these issues.

	✓
Take regular breaks from working at the computer.	
Do not overload electrical sockets.	
Make sure all cabling is securely tied.	
Sit with your back upright at all times.	
Always have a CO ₂ fire extinguisher in the room.	
Use a wrist rest when typing.	

Take regular breaks from working at the computer	
Do not overload electrical sockets	✓
Make sure all cabling is securely tied	✓
Sit with your back upright at all times	
Always have a CO ₂ fire extinguisher in the room	✓
Use a wrist rest when typing	

11. A company uses robots to manufacture cars.

(a) Tick four advantages to the company of using robots rather than humans to manufacture cars.

	✓
Robots are cheap to buy	
Running costs are lower as humans have to be paid wages	
Robots never need maintenance	
Humans cannot work continuously	
Robots can work in hazardous conditions	
There is lower productivity with robots	
Robots produce the same standard of finished product every time	
Humans have greater accuracy than robots	

(a)

Robots are cheap to buy	
Running costs are lower as humans have to be paid wages	✓
Robots never need maintenance	
Humans cannot work continuously	✓
Robots can work in hazardous conditions	✓
There is lower productivity with robots	
Robots produce the same standard of finished product every time	✓
Humans have greater accuracy than robots	

(b) Describe three tasks that humans will have to do when robots are used to manufacture cars.

(b) Three from:

1. Programming robots
2. Changing robot arm tools/end effectors
3. Maintaining robots
4. Supervising operations
5. Quality control/inspecting finished cars

12. Describe what is meant by pharming.

Three from:

1. Installing malicious code on a PC or server
2. User is redirected to bogus website
3. User accesses websites which look authentic but belong to the fraudster/hacker
4. Are used to gain bank/personal details

13. A company owns several stores which offer internet shopping to customers.

(a) Give three advantages to the company of internet shopping.

(b) Give three disadvantages to the company of internet shopping.

(a) Three from:

1. Fewer staff needed – less spent on wages
2. Fewer shops needed – less spent on rates/rent/utilities
3. Less actual cash handled – fewer robberies
4. Less money spent on security staff
5. Potentially larger customer base

(b) Three from:

1. Initial cost of hardware/software is expensive
2. Need to retrain staff
3. Less customer loyalty/loss of customers/more difficult to sell other services/product due to lack of personal touch
4. Costs of system maintenance
5. Greater costs due to more delivery staff

14. Describe what is meant by phishing.

Three from:

1. Fraudster sends an e-mail which appear to be authentic
2. Is sent by a fraudster posing as a bank/organisation
3. In order to get the target's bank details/personal details

15. Students at a school use the internet to research their work.

Discuss the reliability of information found on the internet.

Six from:

1. Internet is not policed so information is not necessarily reliable
2. Anybody can have a website so information is not necessarily reliable
3. Anybody can publish their understanding of a topic so information is not necessarily reliable
4. If site has excessive advertising it could be unreliable

5. If the advertising is related only to its own products it could be unreliable
6. The final part of a URL can help to identify reliability...
7.ac, .gov, .org are usually fairly reliable
8. Can compare information from sites to see if it is reliable
9. If site is endorsed by reliable/reputable people/organisations it can be accepted as being reliable
10. If it has links to other reliable sites it is usually reliable
11. If it has testimonials it is likely to be reliable
12. If the author's credentials are good it is likely to be reliable
13. If information is comparable to information from reliable/authenticated/text books it is likely to be reliable
14. If the date of the last update was a long time ago it is likely to be unreliable

16. Give four benefits of using social networking sites.

Four from:

1. Easy to keep in immediate contact with friends/make new friends
2. Easy to communicate to more than one friend/to communicate with people overseas
3. Can search for people who you've fallen out of touch with
4. Easy to arrange meetings/visits to cinemas/theatre
5. Can share photographs/videos/images/opinions/views

17. The growth of the internet has led to many new developments.

Explain what the following terms mean.

- Spyware

- Spam

- Social networking site

Spyware

Two from:

1. Software that gathers data from computers without the user realising
2. It monitors and records all key presses
3. It sends this information back to the hacker who sent it out

Spam

Two from:

1. Electronic junk mail/sending of unsolicited emails
2. Sent to everybody on a mailing list/many emails sent at once
3. Can slow down networks
4. Can fill up the receiver's mail box and therefore hard disk

Social networking site

Two from:

1. Online communities of like minded users
2. Enables users to share photos
3. Enables users to communicate with each other
4. Enables users to organise meetings
5. Allows users to set up profiles

18. Sarbjit has a desktop computer at home which he uses for internet banking.

(a) Identify two other computer systems he could use to do internet banking when away from home.

(b) Discuss the advantages and disadvantages to banks of using internet banking.

(a) Two from:

Smart phone

Laptop with internet access

Tablet computer

(b) Six from:

Advantages:

1. Fewer bank tellers so less paid out in wages
2. Less actual cash handled – fewer robberies
3. Have access to a wider customer base
4. Fewer branch offices needed – less spent on rates/rent/utilities
5. Less money spent on security staff

Disadvantage:

1. Initial cost of hardware/software is expensive
2. Need to retrain staff
3. Loss of customers/more difficult to sell other services due to lack of personal touch
4. Costs of system maintenance

19. Computers can cause health problems. Identify two of these problems and for each problem write down a method which would help you avoid it. Do not use the same method for both answers.

Two problems from:

1. Headaches (from staring at screen continuously)
2. Eyestrain (from staring at screen continuously)
3. RSI in fingers (from continual typing/repetitive clicking of mouse)
4. RSI in wrists (from continual typing/repetitive clicking of mouse)
5. Backache from sitting in same position all day

Two matching methods from:

1. Use anti-glare screen (headaches/eyestrain)
2. Take regular breaks (all)
3. Use ergonomic keyboard (RSI)
4. Use wrist rests (RSI)
5. Use straight backed chair/maintain good posture (backache)

20. In online banking data can be misused by hackers. Name three types of security measure which can be used to help to prevent this. For each one give an advantage and a disadvantage.

Three matched triples from:

Authentication technique/User ID and Passwords/PIN/memorable data

Advantage

Only person who knows password can access data

Disadvantage

Key logging software can detect key presses/passwords can be intercepted by expert hackers/user can forget password

Encryption

Advantage

Data is scrambled into unreadable form/only person/computer with key can understand data

Disadvantage

Data can still be deleted from system

Firewall

Advantage

Only allowed users/computers can access data

Disadvantage

It is not necessarily the hacker that is excluded but the computer/hackers might use an acceptable computer

Digital certificates

Advantage

Only computer with certificate can access data

Disadvantage

Can be expensive to purchase

Anti Spyware

Advantage

Prevents spyware from invading your computer and gaining personal information

Disadvantage

Doesn't work for all invasions/needs to be continually updated

TANs

Advantage

It is a double layer of security

Disadvantage

PIN can be forgotten/if misused can generate wrong TAN

21. A number of people use methods to defraud online bank customers. Name and describe two of these methods.

Two matched pairs from:

Phishing

Hackers send an e-mail asking for a customer's details/appear to be from the bank/says that the bank needs the information/asks the customer for password, card or account number

Pharming

Redirects a genuine website's traffic to hacker's website

Spyware/key logging software

Soft ware which detects key presses on the keyboard when the user logs on to bank account

22. A school teacher is creating a slide show to describe a typical week in her life. She has been advised that it could be easier to use a Blog rather than create a slide show. Give one advantage and one disadvantage of using a Blog.

One advantage from:

1. She can update it more regularly
2. More personal
3. Can be used as a diary
4. More interactive

One disadvantage from:

1. Has to be continually updated
2. Animation/video/sound more difficult to incorporate
3. It's possible for people she might not want (e.g. outside school) to see her blog
4. Not everyone she would want to see it might have the internet

23. Explain the difference between phishing and pharming.

Three from:

1. Phishing is done by email
2. Can invite you to go to a website/respond to an email
3. Pharming is done by installing malicious code on a pc or server
4. Redirects a genuine website's traffic to hacker's websites

24. Explain what is meant by hacking.

Two from:

1. Gaining unauthorised access to a computer system
2. (May lead to) illegally copying data from a system
3. (May lead to) illegally amending data in a system
4. (May lead to) illegally deleting data from a system
5. Gaining authorised access to a system but exceeding their authoritys

25. There are many microprocessor controlled devices in the modern home. Describe the effects of these on people's lifestyles.

Four from:

1. Microprocessor controlled devices do much of housework
2. Do not need to do many things manually
3. Do not need to be in the house when food is cooking
4. Do not need to be in the house when clothes are being washed
5. Can leave their home to go shopping/work at any time of the day
6. Greater social interaction/more family time
7. More time to go out/more leisure time/more time to do other things/work
8. Are able to do other leisure activities when convenient to them
9. Can lead to unhealthy eating due to dependency on ready meals
10. Can lead to laziness/lack of fitness
11. Can encourage a healthy lifestyle because of smart fridges analyzing food constituents

26. A school encourages its students to use the Internet for research purposes. Discuss the issues relating to such use with reference to the reliability and desirability of the information.

Eight from:

Drawbacks:

Not all information is accurate
Some information is purely for advertising/selling purposes
Might need proxy server to prevent access to certain types of site
Some information is pornographic
Anyone can put information on the Internet
Much of the information on the Internet is not filtered
Need to identify the validity of the author
Need to be careful about whether information is fact or opinion
Information can be biased
Results from search engine could be skewed because of sponsorship/marketing
Internet is not policed
So much information available which might be unreliable

Benefits:

Wide range of information to select (desirable/reliable information)
Able to search quickly (using search engines) to find (reliable/desirable) information
Information can be downloaded and edited (to make it desirable/reliable)
Can use the final part of a URL to identify reliability
Information can be up to date/real time so reliable
.ac, .gov, .org are usually fairly reliable
Can compare information from sites to see if it is reliable

27. Many people are now using the Internet for banking, shopping, booking holidays and theatre tickets. Discuss this development and its effect on the general public.

Eight from:

Advantages

1. Less danger of mugging
2. Saves time rather than queuing
3. Don't have to waste time travelling to shops / banks / theatres etc.
4. Disabled people don't have to travel / leave home
5. Don't have to spend money on travelling expenses (travelling long distances to shops / banks / theatres)
6. Greater choice of goods / seats
7. Can shop when shops / bank are closed / can book tickets when theatres are closed / can shop / bank / book 24/7
8. Less traffic pollution

Disadvantages

1. Lack of socialising / social contacts
2. Customers must have a computer / (basic) computer skills
3. Hackers may intercept data / defraud customer
4. Deprived of personal touch
5. Phone bills can increase
6. Without broadband other family members cannot use the phone
7. Cannot see / feel goods in reality
8. More vulnerable to phishing
9. Lack of exercise
10. May not get the exact goods they ordered