Edexcel

Principal Learning

Information Technology

Level 2

Unit 1: The Potential of Technology

Thursday 15 January 2009 – Morning

Time: 1 hour

Materials required for examination
Nil

Items included with question papers
Nil

Instructions to Candidates

In the boxes above, write your centre number, candidate number, your surname, initial(s) and signature.
Check that you have the correct question paper.
Answer ALL the questions. Write your answers in the spaces provided in this question paper.
Do not use pencil. Use blue or black ink.
Some questions must be answered with a cross in a box (☒).
If you change your mind about an answer, put a line through the box (☒) and then mark your new answer with a cross (☒).

Information for Candidates

The marks for individual questions and the parts of questions are shown in round brackets: e.g. **(2)**.
There are 7 questions in this question paper. The total mark for this paper is 60.
There are 20 pages in this question paper. Any blank pages are indicated.

Advice to Candidates

You are advised to read the questions carefully.

Turn over

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Answer ALL the questions.

1. HFM Bank has decided to introduce home banking for customers as an additional service.

    (a) Which **one** of these statements about online banking is correct?

The security of customers' personal data will be improved.	☒
Charges to customers will be reduced.	☒
The bank will have access to a larger customer base.	☒
Costs will be increased as more staff are required.	☒

    (1)

    (b) Customers will be able to do most of their banking online.

    Which one of these will they **not** be able to do from home?

Pay utility bills.	☒
Check recent statements.	☒
Withdraw cash 24 hours a day.	☒
Transfer funds between accounts.	☒

    (1)

    (c) Some people have concerns about the security of online banking.

    Which of these is the most appropriate advice for customers to maximise their security?

Install spyware and choose a password that is easy to remember.	☒
Install a virus checker and regularly change your password.	☒
Install a virus checker and choose a password that is easy to remember.	☒
Install a firewall and regularly change your password.	☒

    (1)

(d) Many banks now contact customers via email.

A customer receives an email from a bank asking for their password and other personal information.

What action should the customer take?

Provide the information required as soon as possible.	☒
Reply to the email asking why their personal information has not been held securely.	☒
Forward the email to the bank and then delete it.	☒
Provide the information required and then delete the email.	☒

(1)

(e) Put a cross (☒) in the correct box to complete each sentence below.

ATMs are used by individuals to withdraw cash from their bank accounts.

A customer wanting to withdraw cash inserts a(n) identity ☐ / loyalty ☐ / debit ☒

card into the ATM. The electronic data is read from either the magnetic stripe or

the hologram ☐ / chip ☐ / account number ☐ on the card.

The customer enters their PIN using a key pad. In order to reduce fraud the data

is filtered ☐ / encrypted ☐ / encoded ☐ before being transmitted electronically via

a network ☐ / telephone system ☐ / mobile device ☒ to the bank. The details are

then checked against the details held in the bank's database.

(4)

(f) ATMs are available outside banks, in supermarkets and in many other places.

Which of these is the most likely explanation for the increasing number of ATMs?

Convenience for staff and a reduction in the banks' operating costs.	☒
Customer convenience and a reduction in the banks' operating costs.	☒
Convenience for both staff and customers.	☒
Reduction in banks' operating costs, leading to an increase in bank charges for customers.	☒

(1)

(g) Banks monitor the use of each ATM.

Why do banks need to do this?

To identify which ATMs are fully utilised and where additional machines may be required.	☒
To ensure that customers do not exceed their cash withdrawal limit.	☒
To prevent customers from rival banks using the ATM.	☒
To ensure that bank staff are fully employed.	☒

(1)

(Total 10 marks)

Q1

2. (a) Many supermarkets operate loyalty card schemes.

   (i) Supermarkets use loyalty card schemes to collect and analyse customer purchase data.

   This enables them to:

increase revenue by putting up prices on regularly purchased items.	☒
offer 24/7 shopping.	☒
increase sales by targeting advertising.	☒
offer a wider range of products for sale.	☒

   (1)

   (ii) By joining a loyalty card scheme, customers:

save time shopping by using dedicated loyalty card tills.	☒
are given special offer vouchers, to encourage them to return to the store.	☒
can get cash back at the tills.	☒
are able to reduce the amount of time they spend shopping.	☒

   (1)

(b) What device would be used to capture the electronic data from a loyalty card?

Chip and PIN reader.	☒
Barcode scanner.	☒
Magnetic stripe reader.	☒
Sensor.	☒

   (1)

(c) When customers join a loyalty card scheme their personal information is stored electronically.

Which piece of legislation restricts the way personal information can be used?

Computer Misuse Act.	☒
Data Protection Act.	☒
Copyright, Design and Patents Act.	☒
Data Misuse Act.	☒

(1)

(d) Many supermarkets provide self-service checkouts. Customers scan and pack items themselves.

What are the main advantages of providing self-service checkouts?

Supermarkets need less equipment. Customers save money as fewer errors are made.	☒
Supermarkets need less equipment. Customers spend less time queuing.	☒
Supermarkets need fewer staff. Customers save money as fewer errors are made.	☒
Supermarkets need fewer staff. Customers spend less time queuing.	☒

(1)

(e) EPOS systems are used in supermarkets.

Here are some statements about EPOS systems. **Four** of these statements are correct.

Place a cross in the box next to each of the **four** correct statements.

EPOS systems increase efficiency and reduce the amount of stock supermarkets need to hold.	☒
When a barcode is scanned the stock level is automatically reduced on a data file.	☒
EPOS systems can only be used in supermarkets.	☒
When an item is scanned the price is extracted from the barcode and displayed on a screen.	☒
The amount of stock stolen from supermarkets is reduced as all items are scanned at point of sale.	☒
EPOS systems allow managers to monitor the demand at checkouts and ensure the correct staffing level.	☒
EPOS systems reduce the number of errors made by checkout operators.	☒
EPOS systems prevent the supermarket from selling out-of-date stock.	☒

(4)

(Total 9 marks)

Q2

3. (a) The list on the left shows problems that can occur when using the internet.

Draw a straight line to link each Problem to its Solution. Each Problem has only one Solution.

Problem   **Solution**

Passwords
on folders

Spam

Firewall

Internet filter

Hacking
attempts

Access rights

Viruses

Email filter

Backup files

Anti-social
material

Anti-virus
software

(4)

(b) Online auction sites are a popular way of buying and selling items.

Which of these statements is correct?

Items bought are always cheaper than they would be in shops.	☒
Cash, vouchers, debit cards and secure payment systems can be used to pay for items.	☒
Items bought from online auction sites are always true to the description given by the seller.	☒
Prospective buyers can make and monitor bids over a period of time.	☒

(1)

(c) Remaining safe whilst using auction sites is important.

Which of these is **not** sensible advice?

Always use a secure method of payment.	☒
Use a 'nickname' and do not give your name and contact details to a buyer/seller.	☒
Arrange to meet a buyer/seller in a private place to exchange goods.	☒
Do not give out your personal information and bank details until a successful bid has been accepted.	☒

(1)

(d) Downloading music from the internet is very popular.

Which of these statements is true?

All music files take the same amount of time to download.	☒
Downloading individual tracks, rather than complete CDs, does not need the owner's permission.	☒
It is illegal to download music without the owner's permission.	☒
Downloaded music can always be legally copied and passed on to other people.	☒

(1)

Turn over

(e) JayJay Sports is a small company selling sports equipment.

They have decided to introduce a website to allow customers to buy equipment over the internet.

Which statement accurately identifies the advantages of online ordering?

The customers benefit as the goods are always cheaper. The company benefits as it has access to a wider market.	☒
The customers benefit as they no longer need to travel to the shop. The company benefits as it has access to a wider market.	☒
The customers benefit as they no longer need to travel to the shop. The company benefits as it is able to keep sales information secure.	☒
The customers benefit as the goods are always cheaper. The company benefits as it is able to keep sales information secure.	☒

(1)

(Total 8 marks)

Q3

4. (a) Car manufacturers use technology in many different ways. A robot can be used to move car parts around a factory. It must be programmed to stop if an object is in its way.

Which device would be used to detect the object?

Plotter.	☒
Scanner.	☒
Sensor.	☒
Actuator.	☒

(1)

(b) Technology systems are used widely in manufacturing.

Here are some statements about these systems.

Four of these statements are correct.

Place a cross in the box next to each of the **four** correct statements.

More mundane tasks are carried out using CAM leaving more interesting tasks for workers.	☒
Process control systems reduce the need for monitoring by staff.	☒
The equipment needed to carry out process control is relatively cheap and reduces manufacturers' overheads.	☒
The introduction of CAM may lead to some workers being unhappy as they will need retraining.	☒
Process control systems can instantly respond to changing conditions.	☒
Working conditions are improved as CAM is used to carry out unpleasant tasks.	☒
CAM always prevents delays occurring in the manufacturing process.	☒
CAM will reduce industrial pollution.	☒

(4)

(c) The increased use of technology systems in manufacturing has led to a changing pattern of employment.

Which group of statements best describes this changing pattern?

Fewer skilled staff required. More unskilled staff required. More training required.	☒
More skilled staff required. Fewer unskilled staff required. More training required.	☒
More skilled staff required. Fewer unskilled staff required. Less training required.	☒
Fewer skilled staff required. More unskilled staff required. Less training required.	☒

(1)

(d) Kitchen manufacturers use CAD packages to produce individual designs for customers.

Which of these would be the most likely reason for using CAD rather than manual methods?

To attract more customers by improving the quality of the kitchens installed.	☒
To reduce costs as fewer items will need to be built to order.	☒
To reduce the time taken to manufacture and install a kitchen.	☒
To attract more customers by providing a virtual representation of their kitchen.	☒

(1)

(Total 7 marks)

Q4

5. (a) Large organisations often communicate using an internal network of computers.

This type of communication can help organisations by:

improving the quality of communication with customers, which leads to more reliable and up-to-date information.	☒
improving the effectiveness of communication between departments, which leads to more reliable and up-to-date information.	☒
increasing the amount of communication between departments, which leads to more reliable and up-to-date information.	☒
improving the effectiveness of communication with customers, which leads to increased sales.	☒

(1)

(b) One facility that can be provided on an internal network is an intranet.

Which of these statements is correct?

An intranet only allows information to be accessed by members of the organisation when they are in the office. This ensures that business-critical data is kept secure.	☒
An intranet allows information to be accessed by anyone via the internet. Sensitive data is kept secure by installing firewalls.	☒
An intranet only allows information to be accessed by members of the organisation. This ensures that business-critical data is kept secure.	☒
An intranet allows information to be accessed by members of the public. Passwords must be used to access sensitive data.	☒

(1)

(c) Many organisations provide laptops for employees to use when they are away from the office on company business.

Which of these is **not** a reason for providing employees with laptops?

Contact between the employee and home can be maintained.	☒
The employee will be able to access the internet if additional information is required.	☒
Contact between the employee and the company can be maintained.	☒
The employee will be able to process information provided by the customer.	☒

(1)

(d) Most laptops come equipped with wireless adaptors; however there is a risk to data held on laptops.

Which of these poses the least risk to data held on a laptop?

Using the laptop in an internet café.	☒
Accessing the internet using a secure network.	☒
Accessing the internet using an unsecure network.	☒
Using the laptop at home.	☒

(1)

(e) Technology is changing the way organisations operate.

Four of these statements are correct.

Place a cross in the box next to each of the **four** correct statements.

The increased use of mobile technologies has changed the way many individuals work.	☒
The availability of the internet gives organisations access to more information.	☒
The increased use of computers has made it easier for organisations to safeguard sensitive data.	☒
The increased use of mobile technologies has led to an improvement in communications between organisations and customers.	☒
The increased use of mobile technologies has led to concerns about the health of individuals.	☒
The increased use of mobile technologies has reduced the responsibility of organisations for the health and safety of their employees.	☒
The increased use of computers has reduced the need to store large amounts of data.	☒
The increased use of computers has reduced energy consumption in offices.	☒

(4)   **Q5**

(Total 8 marks)

H 3 5 7 5 2 A 0 1 5 2 0

6. (a) Patients in many areas have the opportunity to make hospital appointments online.

Put a cross (☒) in the correct box to complete each sentence below.

In order to use the online appointment system a patient must have access to

a laptop ☐ / the internet ☐ / a server ☐ .

A unique password ☐ / name ☐ / number ☐ will be used to identify the patient.

When the patient has made the appointment the

database ☐ / computer ☐ / operating system ☐ at the hospital will be updated.

The patient can output a hard copy of the details using a

scanner ☐ / printer ☐ / monitor ☐.

(4)

(b) Hospitals use advanced technology systems to monitor the progress of patients in departments, such as intensive care.

Which group of devices will be used in the monitoring system?

Sensor, monitor, plotter.	☒
Camera, monitor, printer.	☒
Biometric scanner, monitor, printer.	☒
Sensor, biometric scanner, plotter.	☒

(1)

H 3 5 7 5 2 A 0 1 6 2 0

(c) Expert systems are used to help doctors diagnose patients' illnesses.

Which of these is an accurate description of an expert diagnostic system?

Computer hardware which simulates the actions of a human expert.	☒
Computer hardware which simulates the knowledge of a human expert.	☒
Computer software which simulates the knowledge of a human expert.	☒
Computer software which simulates the actions of a human expert.	☒

(1)

(d) Which of these statements is correct?

An expert system has a wider knowledge base than a doctor:

therefore its diagnosis is always accepted.	☒
although there may be errors in its knowledge base.	☒
and is used by hospitals as a substitute for a doctor.	☒
therefore the suggested diagnosis is always correct.	☒

(1)

(e) The most likely reason for introducing an expert diagnostic system is to:

improve the accuracy of a diagnosis and make more efficient use of the doctor's time.	☒
save money by reducing the amount of time spent with patients.	☒
improve communication between doctors and patients.	☒
reduce costs by limiting surgery opening hours.	☒

(1)

Q6

(Total 8 marks)

7. (a) New technologies have had a huge impact on the way in which organisations, individuals and society operate.

Four of these statements are correct.

Place a cross in the box next to each of the **four** correct statements.

All members of society have equal opportunity to access the information and resources available on the internet.	☒
The availability of the internet has had a positive effect on many housebound individuals.	☒
A wider variety of learning methods have emerged from the use of the internet.	☒
New technologies have led to organisations outsourcing work to other countries.	☒
Improved technologies have reduced the gap between rich and poor countries across the world.	☒
The increased use of the mobile technologies has allowed for a greater flexibility in peoples' lives.	☒
All learning materials found on the internet have been verified as an acceptable source for education.	☒
Mobile technologies can only be used outside the workplace.	☒

(4)

(b) Some people are concerned that the increased use of technology systems is leading to a lack of privacy for individuals.

Which group of systems is most likely to contribute to the loss of an individual's privacy?

Computerised databases, biometric controls, virtual communities.	☒
CCTV, computerised databases, virtual communities.	☒
CCTV, biometric controls, virtual communities.	☒
CCTV, biometric controls, computerised databases.	☒

(1)

(c) Advances in technologies, such as mobile communication, and the ease of internet access have given people the opportunity to work from home.
Home working has both advantages and disadvantages for employers and employees.

Here is a list of statements.
Home working:

A	reduces space required in company premises.	E	enables flexible working.
B	increases travelling time.	F	reduces the number of working hours.
C	increases relocation costs.	G	makes team management more difficult.
D	can create a feeling of isolation.	H	reduces the need for internet security.

Insert the letter corresponding to each correct answers into the table.

(i) Select **one** advantage and **one** disadvantage for an employee.

Advantage	
Disadvantage	

(2)

(ii) Select **one** advantage and **one** disadvantage for an employer.

Advantage	
Disadvantage	

(2)

(d) New technologies have provided the opportunity for online training.

Which of these statements is **not** correct?

Online training can be done in the learner's own time and the learner can work at their own pace.	☒
Learners must be self disciplined if they are to complete an online training course.	☒
Online training is suitable for all training needs.	☒
The quality of online training materials must be of a very high standard if the training is to be successful.	☒

(1)

(Total 10 marks)

Q7

TOTAL FOR PAPER: 60 MARKS

END

H 3 5 7 5 2 A 0 2 0 2 0