

Please check the examination details below before entering your candidate information

Candidate surname					Other names				
Centre Number					Candidate Number				

Pearson Edexcel International Advanced Level

Thursday 28 May 2026

Morning (Time: 2 hours)

Paper reference **WIT13/01**

Information Technology

International Advanced Level

UNIT 3

You do not need any other materials.

Total Marks

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided
– *there may be more space than you need.*

Information

- The total mark for this paper is 80.
- The marks for **each** question are shown in brackets
– *use this as a guide as to how much time to spend on each question.*
- Calculators are **not** allowed.

Advice

- Read each question carefully before you start to answer it.
- Try to answer every question.
- Check your answers if you have time at the end.

Turn over ►

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P:1/1/1/1/1/1



Answer ALL questions. Write your answers in the spaces provided.

1 Pearson Park is a theme park for people of all ages.

(a) Visitors to the park with smartphones can take advantage of augmented reality applications.

Give **two different** ways a visitor to the park can use augmented reality on their smartphone.

(2)

1

.....

.....

2

.....

.....

(b) Pearson Park wants a new roller coaster.

The project manager uses SMART criteria to write project objectives.

This is one of the project's objectives.

The buying team will assign two experienced members of staff to obtain and present quotes from three different companies to design the new roller coaster. Each quote must be presented using a separate form RC37c on 17 September 2027.



Complete the table to show how this objective fits the SMART criteria.

One row has been completed for you.

(4)

Criterion	How the objective meets the criterion
Specific	
Measurable	
Achievable	
Relevant	This objective is relevant to the buying team, as it is within their job role to obtain competing quotes.
Time-bound	

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(c) The Internet of Things is different to the internet.

(i) Describe the Internet of Things.

(2)

(ii) All of Pearson Park is covered by a publicly accessible Wi-Fi network.

All employees wear a wristband that tracks their location and allows them to use the Wi-Fi network to send and receive messages.

The wristbands interact with other devices and services to make this possible.

Structured data is stored on local machines in the office.

A ride has broken down in the Forbidden Forest area and the managers need to send a mechanic there.

Some employees are mechanics.

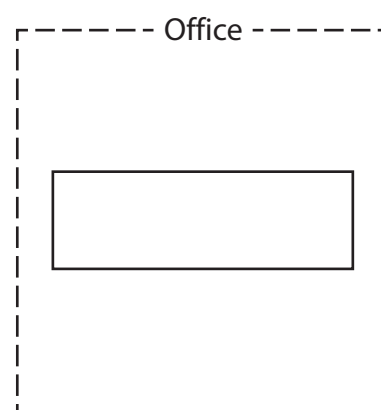
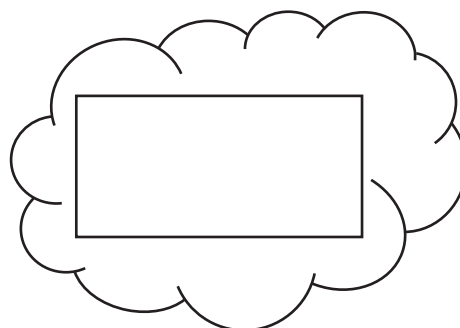
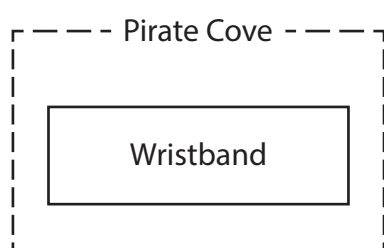
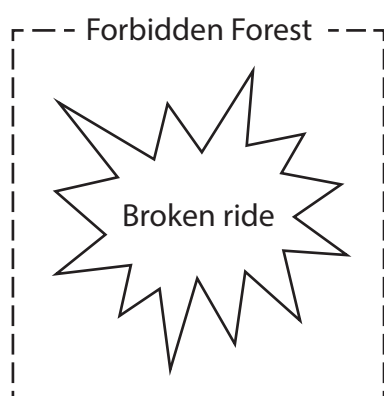
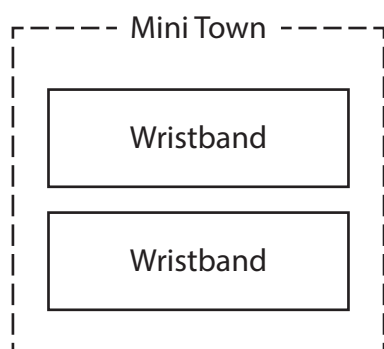
A partially completed high-level design for the system is on the opposite page.

Complete the diagram by adding:

- **two** labels to show devices
- directional lines to show communications.

(4)



**Key:**

device



area of the park

(Total for Question 1 = 12 marks)

- 2 Waste Not is a company that saves excess food from shops and restaurants going to waste.

It has a website where shops, restaurants and users can sign up.

It has a smartphone application that enables users to select excess food items, pay a reduced price for them and collect them from shops and restaurants.

- (a) Explain which interface design is most suitable for a smartphone application.

(2)

- (b) Waste Not employs a team of developers to maintain the smartphone application and the website.

System maintenance can be corrective, adaptive or perfective.

Complete the table to show the type of system maintenance for **each** situation.

(4)

Situation	Type of system maintenance
A user of the smartphone application has reported that the ordering system is not sending a confirmation email	
The application development team is adding new security features to the payment system	
A restaurant cannot register on the website because there is a special character in its name	
New legislation requires that the weight and value of food, that is saved, is reported to a data collection agency	



- (c) Waste Not uses a database to keep track of suppliers and buyers.
- (i) Explain **one** benefit of removing data redundancy from a database.

(2)

(ii) Complete the data dictionary by:

- adding **two** missing items
- circling **two** inaccurate items.

(4)

Name	Data type	Size	Primary key	Validation
Email	String	255		None required
User ID	Integer	32		None required
Mobile number	Integer	11		Length Digits only
Total spend		8		None required

(Total for Question 2 = 12 marks)



P 7 9 9 8 7 A 0 7 2 0

3 Starfish.com is an online greetings card company.

Visitors to its website select, customise and pay for greetings cards.

Starfish.com then prints and posts the cards.

(a) Starfish.com uses containerisation.

Explain **one** benefit of using containerisation.

(2)

(b) Starfish.com uses replication in its distributed database.

Explain **one** reason for using replication.

(2)

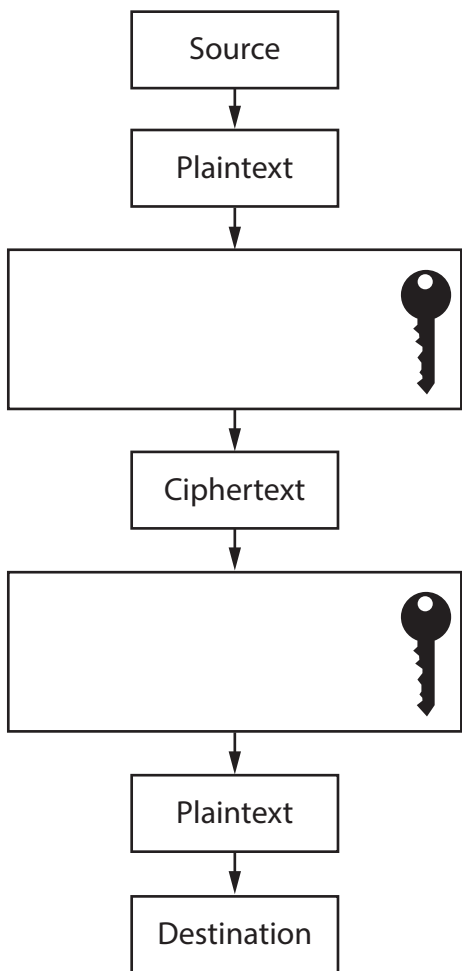


(c) The website uses encryption.

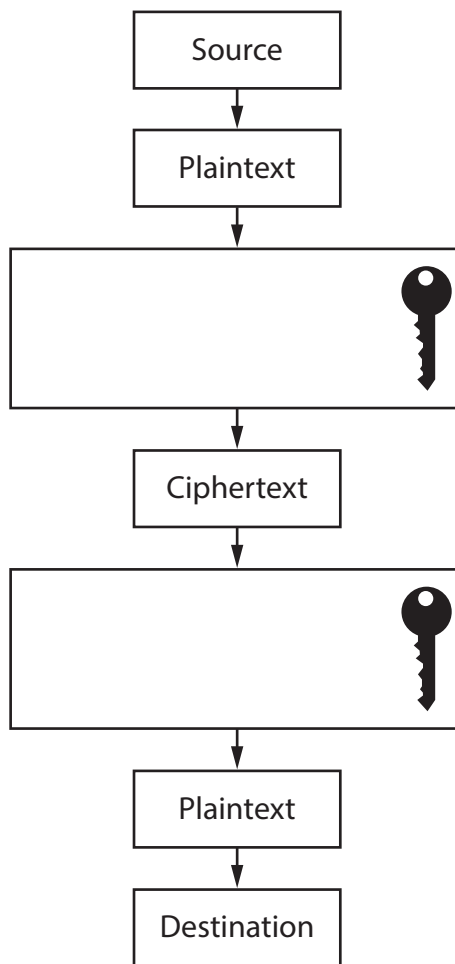
Complete the diagram to show the keys used for **each** type of encryption.

(4)

Symmetric encryption



Asymmetric encryption



P 7 9 9 8 7 A 0 9 2 0

(d) Starfish.com is moving its operations to the cloud.

It has developed a project plan for the move.

On the opposite page are:

- a partially completed precedence table for the activities in the plan
- a partially completed activity on arc network diagram representing the precedence table.

Complete the precedence table by:

- adding a value for the predecessor of Activity F
- adding the values for the predecessors of Activity G.

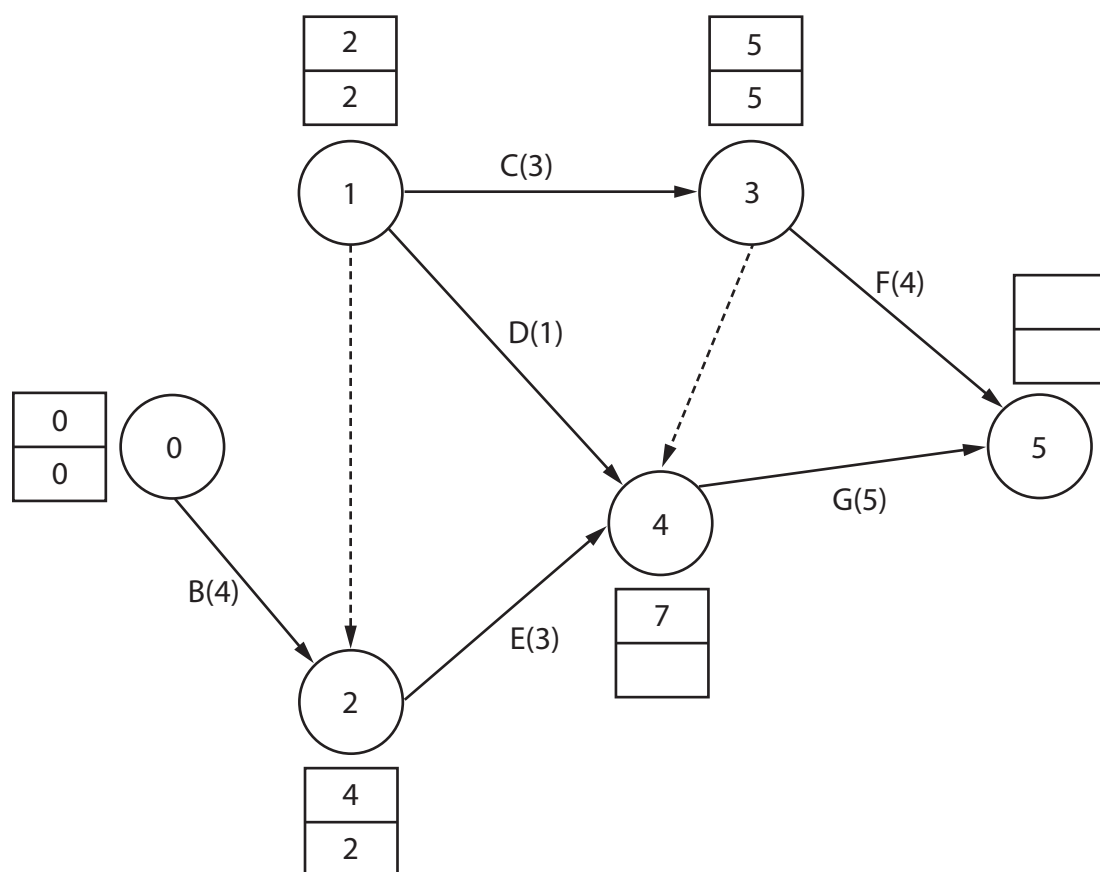
Complete the activity on arc network diagram by:

- adding and labelling **one** arrow
- adding **three** missing values for the early and late event times.

(6)



Activity	Duration	Predecessor
A	2	–
B	4	–
C	3	A
D	1	A
E	3	A, B
F	4	
G	5	

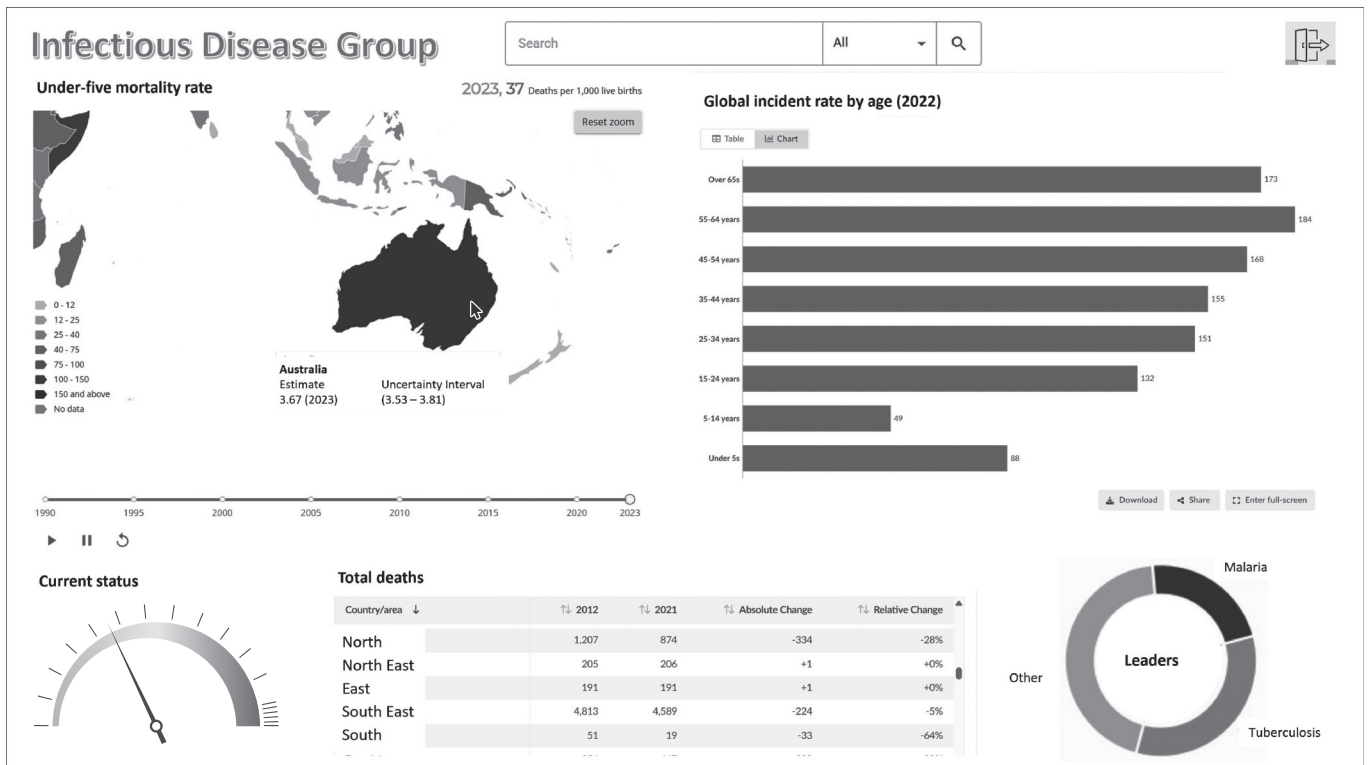


(Total for Question 3 = 14 marks)

- 4 The Infectious Diseases Group (IDG) holds worldwide data about diseases, such as tuberculosis (TB) and malaria.

- (a) A web page is being developed to share historical datasets about the diseases and their effects on people worldwide.

Figure 1 shows a mock-up of a web page.



(Source: © <https://childmortality.org/all-cause-mortality/data/map?refArea=PNG>,
© <https://ourworldindata.org/grapher/global-tuberculosis-incidence-rate-by-age>,
© Pearson Asset Library)

Figure 1

An intuitive human user computer interface (HCI) is an interface that works exactly as the user expects it to.

Discuss the way in which this mock-up demonstrates intuitive HCI design and how this affects the user experience.

(6)

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Handwriting practice area with 20 sets of horizontal dotted lines.



(b) The group has employees to work on projects.

Details about the employees and projects are going to be stored in a relational database.

Employees work on more than one project at a time.

Employees have more than one contact telephone number. Telephone numbers are variable in length.

Some employees share the same office telephone number.

Figure 2 shows part of the data held by the group. Not all fields are complete.

emplID	projID	empName	telephone	postcode	projName
6294	301	Hudson	143739820 173542831 150660238	29730	TB
5822	302	Wolfe	2076150	86300	Malaria
6463	303	Giorello	64366258 64366905	37404	Cholera
2690	304	Musenero	2076150 2076869 2076905	86300	Measles
1833	305	Hetzel	35154112 35145792	76592	Ebola
6294	302	Hudson	143739820 173542831 150660238	29730	Malaria
5822	303	Wolfe	2076150	86300	Cholera
6463	304	Giorello	64366258 64366905	37404	Measles
2690	303	Musenero	2076150 2076869 2076905	86300	Cholera
1833	303	Hetzel	35154112 35145792	76592	Cholera

Figure 2



Create a model for the data in third normal form.

Use single line, parenthetical notation. **Do not** draw a diagram.

Primary keys **must** be underlined.

Foreign keys **must** be indicated by an asterisk *.

(12)

(Total for Question 4 = 18 marks)



5 FunFone is a national telecommunications company.

The company:

- sells smartphones and contracts to customers
- has a loyalty scheme
- runs marketing campaigns via email and social media
- has a customer relationship management (CRM) system.

Evaluate the benefits and drawbacks for the company of using the CRM system to synchronise marketing events, to identify buying trends and to upsell products.

(12)

[illegible]

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Handwriting practice area with 24 horizontal dotted lines.

(Total for Question 5 = 12 marks)



6 A college employs teachers, bus drivers and technicians.

Each student has a unique identification number (student ID).

Each classroom has a unique identification number (room ID).

When a teacher needs to speak to a student urgently, the teacher enters the student ID into the timetabling system.

The system displays the student's timetable including the room IDs.

The teacher enters the room ID to find the telephone number for that room.

Each bus has a unique identification number (bus ID).

When a bus driver needs a bus for a trip, the bus driver enters the number of seats required into the fleet management system.

The system allocates a bus that is available and has the number of seats required.

The bus driver records the details of the trip.

The bus driver reports any problems with the bus on the system.

Technicians receive the problem report for a bus.

They check the bus and give a status update.

Each bus has a digital device to plan routes and give driving instructions for trips.

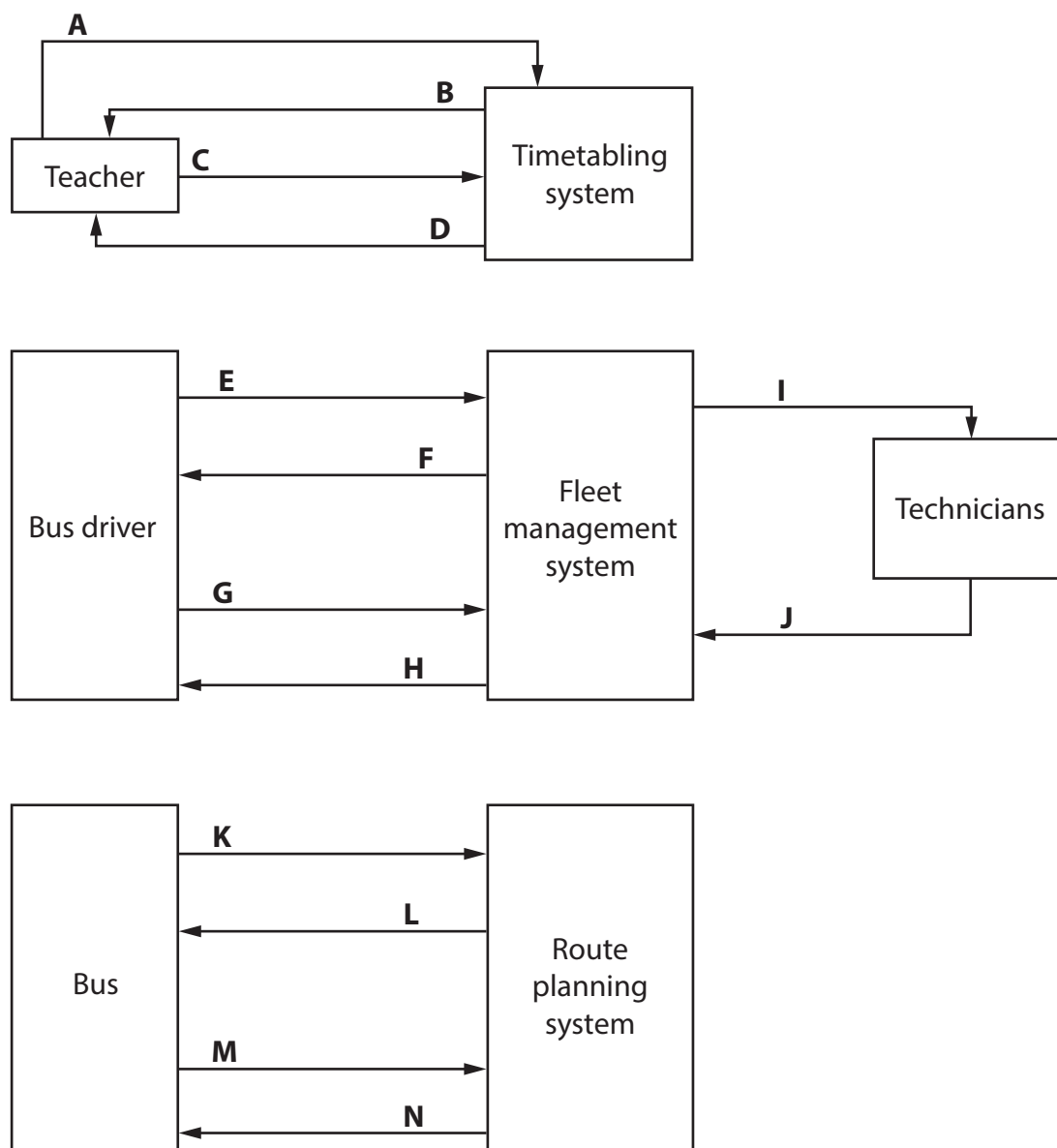
A bus driver enters the starting location and the destination into the route planning system.

The system generates a route plan.

During the trip, the system tells the driver the next instruction, based on the current location.

Figure 3 shows a partially completed information flow diagram showing how the college employees use these systems.



**Figure 3**

Complete the table by adding values for the labels to show the information flows.

Two rows are done for you.

Label	Value
A	
B	Student's timetable
C	
D	
E	Number of seats required
F	
G	
H	
I	
J	
K	
L	
M	
N	

(Total for Question 6 = 12 marks)

TOTAL FOR PAPER = 80 MARKS

