

Please check the examination details below before entering your candidate information

Candidate surname

Other names

Pearson Edexcel
International
Advanced Level

Centre Number

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Candidate Number

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Additional sample assessment material for first teaching
September 2018

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.*

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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Pearson

(c) Amala wants her app to use speech recognition software.

This will allow users to control IoT devices by talking to the app.

One problem with speech recognition software is that it can be confused by background noise.

The software will use machine learning.

Explain how machine learning will help to overcome this problem.

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(d) Amala's app will control IoT devices on a home network.

She has developed a specification for this system.

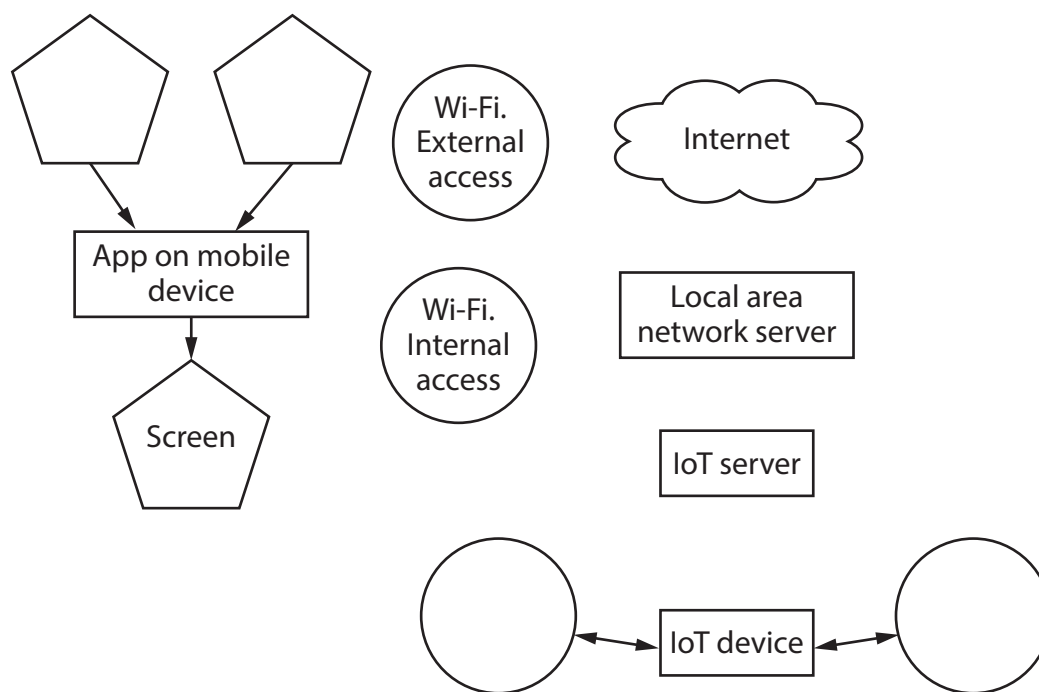
The specification states that the system will:

- be controlled by a user speaking into a mobile device
- be controlled via a touchscreen on a mobile device
- connect a mobile device to an IoT device using a Wi-Fi internet connection
- use Bluetooth or Wi-Fi to connect from a local area network (home network) to IoT devices
- provide feedback from the IoT devices to a mobile device.

Here is Amala's partially completed high-level design for the system.

Complete this high-level design.

(6)



Key

Circle – Communication methods

Rectangle – Digital device

Pentagon – Input/output

(Total for Question 1 = 16 marks)



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QUESTION 2 BEGINS ON THE NEXT PAGE.



(b) Companies use backup systems to protect business-critical data.

When planning a backup system, a number of factors need to be considered.

One factor is the amount of storage space that will be needed.

State **six** other factors that should be considered when planning a backup system.

(3)

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(c) An insurance company intends to archive some of its data.

This is the task list for the archive project.

Archive task list. Approved May20th.			
Task No.	Task description	Date due	Notes
1	Compile catalogue of existing data files	June 5th	Start May 25th
2	Get list of files to be archived from department heads	June 12th	Department heads need copy of catalogue
3	Allocate index and tracking numbers to files selected for archiving	June 15th	Start as soon as first department list is produced
4	Create templates for department heads to list files	June 5th	Start May 25th
5	Ensure there are sufficient DVDs to hold the archive	June 15th	Calculate number of items from department file lists
6	Digitise hard copy material	June 20th	Start as soon as first department list is produced
7	Copy archive material to DVDs	June 20th	Start as soon as first department list is produced

Create a Gantt chart in the boxed area for the tasks listed.

Your chart should indicate any dependencies.

Your chart should indicate any constraints.

You should assume that the company works seven days a week.

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3 Sarah is a website developer.

A client has given her this brief for a new homepage for a website.

- Page size 2560 pixels wide, 1440 pixels high.
- Title 'gifimalations.com' in pale green with red shadow.
- Title changes from pale green with red shadow to purple with blue shadow.
- Navigation bar top right.
- Colourful, animated GIFs of animals, two rows of five.
- GIFs run when page loads.
- Clicking a GIF expands it to run in a pop-up window.
- Music plays when the page loads, using file 'catchy_tune.wav'.
- Bee moves continuously to and fro along the arrow track.
- Catching and clicking the bee makes the music louder or quieter, louder to the right of page.

Figure 1 shows a sketch of the required screen for the home page.

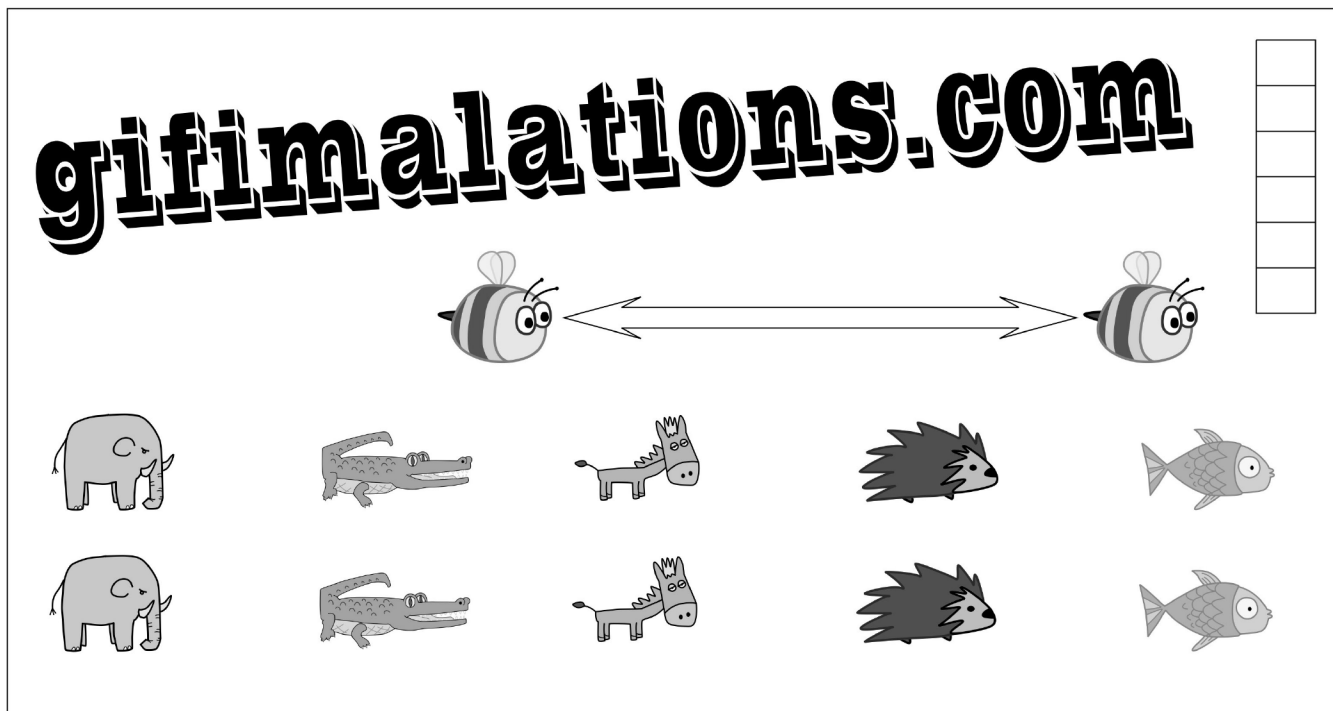


Figure 1

If Sarah were to implement this design there would be a number of ergonomic and accessibility issues relating to the page.

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Evaluate these issues and their possible solutions.

(12)

Handwriting practice area consisting of 20 horizontal dotted lines for writing.

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Handwriting practice area with 20 horizontal dotted lines.

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QUESTION 4 BEGINS ON THE NEXT PAGE.



- 4 Talitha runs a small online business, selling clothing. At present she keeps her product information in a spreadsheet.

Figure 2 shows an extract from the spreadsheet.

Product name	Product ID	Manufacturer	Manufacturer ID	Colour	Size	Gender
K-Mex T-shirt	2322	Indieshirts	3	Green	S,M,L,XL	F,M
K-Mex T-shirt	2324	Indieshirts	3	Blue	S,M,L,XL	F,M
K-Mex T-shirt	2325	Indieshirts	3	Red	S,M,L	F,M
Oahu cargo shorts	1323	Legwares	5	Stone	26,28,32,34,36	M
Oahu cargo shorts	1325	Legwares	5	Hot lava	30,32,34,36,40	M
Fern sarong wrap	1754	Superbeach	2	Red, Blue	Fits all sizes	F
Flower sarong wrap	1755	Superbeach	2	Gold, Purple	Fits all sizes	F
Fruit sarong wrap	1756	Superbeach	2	Black, Silver	Fits all sizes	F

Figure 2

Talitha wants to sell a wider range of clothing. She has been advised that she should store the product information in a database instead of a spreadsheet.

You must develop a normalised database solution for Talitha.

- (a) Create tables showing the database in third normal form.

Identify all primary keys (single attribute or composite) and foreign keys.

You do not need to include any data in the tables.

(12)



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(b) Talitha has a store of historical sales data.

She considers using predictive data analytics on her sales.

Explain **two** ways in which she could use predictive data analytics.

(4)

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(Total for Question 6 = 12 marks)

TOTAL FOR PAPER = 80 MARKS

