



Information and Communication Technology

-0417-

Chapter One: Types and Components of Computer Systems

0417 Past Paper Questions with Mark Scheme

2021-2024



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1 Tick (✓) whether the following are examples of internal or external hardware devices.

	internal (✓)	external (✓)
Mouse		
Video card		
Printer		
Actuator		

[2]

2 Describe **four** characteristics of a tablet computer.

1

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2

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3

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4

[4]

3 Tick (✓) whether the following are examples of **control**, **measurement** or **modelling** applications.

	control (✓)	measurement (✓)	modelling (✓)
Personal finance			
Weather forecasting			
Burglar alarms			
Weather stations			

[4]

4 (a) Circle **two** items that could be used to output data directly from a smartphone.

Blu-ray disc microphone mouse screen
 SD card sensor speaker webcam

[2]

(b) One of the uses of a smartphone is the sending and receiving of emails.

Describe **four** other uses of a smartphone.

1.....

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2.....

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3.....

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4.....

.....

[4]

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5 A computer consists of both hardware and software.

(a) Define the term hardware.

.....
.....

[1]

(b) Give **two** examples of internal hardware devices.

1

2

[2]

(c) Define the term software.

.....
.....

[1]

(d) There are two types of software: system and applications.

Give **two** examples of applications software.

1

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2

.....

[2]

6 Describe **two** advantages of using a tablet computer rather than a laptop computer.

1

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2

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[2]

7 A computer consists of both hardware and software.

(a) Give **two** examples of input devices which are part of a laptop computer.

1

2

[2]

(b) There are two types of software: system and applications.

Give **two** examples of system software.

1

.....

2

.....

[2]

8 Rockit Motors has opened a car store in a shopping mall.

Customers can test drive the cars they are planning to purchase using virtual reality systems within the store.

(a) Name **two** devices which would be used in this virtual reality system.

1

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2

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[2]

(b) Explain the term virtual reality.

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.....
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[3]

9 A tablet computer consists of both hardware and software.

(a) Define the term hardware.

.....
.....

[1]

(b) One input device used on a tablet computer is a touch screen.

Name **two** other input devices built into a tablet computer.

1

2

[2]

(c) Write down **two** examples of system software.

1

2

[2]

10 The internal memory of a computer consists of both ROM and RAM.

Describe the terms ROM and RAM.

ROM

.....

.....

RAM

.....

.....

.....

[4]

11 Tick (✓) whether the following statements refer to control, measurement or modelling systems.

Only tick (✓) one answer for each statement.

	control (✓)	measurement (✓)	modelling (✓)
Maintaining the growing conditions in a glasshouse			
Aircraft flight simulation			
Monitoring the pollution in a river			
Using what-ifs			

[4]

12 Describe the advantages and disadvantages of using a smartphone rather than a laptop computer to access the internet.

[6]

13 Complete each sentence using the most appropriate item from the list. Your answers must be different in each case.

ADC

an applet

hardware

HDD

a router

a sensor

software

SSD

(a) The physical components of a computer are called

[1]

[1]

(b) Programs and data are examples of

[1]

[1]

(c) A small application performing one or two simple functions is called

[1]

[1]

(d) An input device used in measurement applications is called

[1]

[1]

14 Identify **two** devices which are used in control systems.

1

2

[2]

15 Smartphones and smartwatches can be used in everyday life. A smartwatch is a wearable computer in the form of a wrist-watch.

(a) Apart from accessing the internet, give **three** other uses of a smartphone.

1

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2

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3

[3]

(b) Give **two** advantages of using a smartwatch rather than a smartphone.

1

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2

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(c) Give **two** disadvantages of using a smartwatch rather than a smartphone.

1

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2

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[2]

16 Use of smartphones to access the internet has increased by over 200% in the past five years.

Compare the use of smartphones to access the internet with the use of desktop computers to access the internet. Your answer must include similarities and differences.

Handwriting practice lines consisting of ten sets of horizontal lines. Each set includes a solid top line, a dashed midline, and a solid bottom line, intended for practicing letter formation and alignment.

[6]

17 Database, presentation, spreadsheet and word processing software are used by a medical centre.

Tick (✓) the most appropriate piece of software to carry out the tasks shown.

	database (✓)	presentation (✓)	spreadsheet (✓)	word processing (✓)
Producing a letter to send out to patients				
Creating graphs to show numbers of people attending the medical centre				
Creating queries from patients' details				
Creating an interactive display of services offered				

[4]

18 Smartphones use a Graphical User Interface (GUI).

(a) Give **three** benefits of using a GUI.

1

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2

.....

3

.....

[3]

(b) Give **three** characteristics of a smartphone.

1

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2

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3

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[3]

19 Sensors are placed in the river to check the water level. If the water level in the river rises more than 5m above normal river levels, a flood barrier is raised to safeguard the village. The flood barrier remains raised until the water level drops to normal levels.

(a) Explain why the data from the sensors cannot be read directly by the computer and name the device that needs to be used so that the computer can read the data.

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[3]

Chapter Six

(b) Describe how a microprocessor uses the data from the sensors to raise and lower the flood barrier.

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[6]

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20 A computer system uses a Graphical User Interface (GUI).

Write down **two** features of a GUI and for each give a reason why they are needed.

Feature 1

Reason 1

Feature 2

Reason 2

[4]

21 Each box delivered to the school shop includes a QR code.

Explain why QR codes are used.

[4]

22 Rockit Aircraft manufactures and flies aeroplanes.

(a) The pilots at Rockit Aircraft are trained using extended reality.

Describe what is meant by extended reality.

[2]

Chapter Two

(b) Some of the components used in the manufacture of aircraft are produced using a 3D printer.

Analyse the use of a 3D printer to make the components rather than making the components by hand.

[6]

23 A computer system consists of both hardware and software.

(a) Explain what the following types of software provide in the computer system.

Applications

System

[2]

(b) Give two examples of each type of software.

(i) Applications

1 _____

2

[2]

(ii) System

1 _____

2

[2]

24 There are two forms of data: analogue and digital.

Contrast analogue and digital data.

[4]

25 Computers contain a Central Processing Unit (CPU).

Describe the role of the CPU in processing instructions to produce an output.

[4]

26 A doctor uses a gesture-based user interface.

State **two** other types of user interface.

1
2

[2]

27 Augmented Reality can be used with a Global Positioning System (GPS) device.

(a) State two other uses of Augmented Reality.

1

2 _____

[2]

(b) Describe the differences between Augmented Reality and Virtual Reality.

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[2]

28 More people use desktop computers rather than tablet computers when working at home.

(a) Discuss the advantages and disadvantages of using desktop computers rather than tablet computers for doing work at home.

[6]

(b) Desktop computers use input and output devices.

(i) State **two** input devices that can be used in a desktop computer for working at home.

1

2

[2]

(ii) State **two** output devices that can be used in a desktop computer for working at home.

1

2

[2]

29 Circle **two** internal hardware components.

Actuator

Cloud

DVD

HDD

Motherboard

Printer

ROM

SD Card

[2]

30 One benefit of using a command line interface (CLI) is that it uses less computer memory.

(a) State **two** other benefits of a command line interface (CLI).

1

2

[2]

(b) State **two** other types of user interface.

1

2

[2]

31 An organisation has provided laptops for its sales team to use when working at home and in the office.

(a) Give **two** benefits to the employees of using these laptops for their work.

Benefit 1

Digitized by srujanika@gmail.com

[2]

(b) Give two issues that may arise from providing employees with these laptops.

Issue 1 _____

Issue 2

Chapter Seven

[2]

(c) The network manager of the organisation has been asked to record the details of the employees who have been provided with laptops. The network manager has decided to produce an online data capture form.

Describe the main design features that should be considered to make the online data capture form easy to complete accurately.

[4]

(d) The employees are given a list of strategies to follow to reduce the health risks of using laptops.

State **four** strategies that could be included in the list.

1

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2

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3

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4

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[4]

32 Circle **two** items of internal memory.

Actuator

Cloud

DVD

Memory stick

Printer

RAM

ROM

Sensor

[2]

33 Virtual reality can be used when training for sports.

(a) State **two** other uses of virtual reality.

1

2

[2]

(b) Discuss the impact of virtual reality on everyday life.

[6]

34 One difference between a command line interface (CLI) and a graphical user interface (GUI) is that a GUI takes up more memory.

(a) State **two** other differences between a CLI and a GUI.

1

2

[2]

(b) State **two** other types of user interface.

1

2

[2]

35 A college principal has decided that students can use mobile devices to take notes in lessons. Some students use laptop computers whilst others use smartphones.

Describe the benefits and drawbacks of using laptop computers rather than smartphones for this purpose.

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[4]

36 (a) Explain the differences between virtual reality (VR) and augmented reality (AR).

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[2]

(b) Discuss the impact of augmented reality (AR) on everyday life.

[6]

37 One of the benefits of a Graphical User Interface (GUI) is that it is user friendly.

(a) State two other benefits of a GUI.

1

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2

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[2]

(b) State two other types of user interface.

1

2

[2]

38 Artificial Intelligence (AI) is having an impact on everyday life. Social media now uses AI for many tasks.

(a) State what is meant by Artificial Intelligence (AI).

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[2]

(b) Evaluate the impact of Artificial Intelligence (AI) in the use of social media.

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[4]

39 Analogue and digital data are used by computer systems.

(a) State **one** reason why analogue data has to be converted to digital data.

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.....

[1]

(b) State **one** reason why digital data might have to be converted to analogue data.

.....
.....

[1]

40 Complete each of the following sentences.

(a) Software that the user requires to carry out a task is called

..... [1]

(b) Software that the computer requires to operate is called

..... [1]

(c) The collective name for the physical components of a computer is

..... [1]

(d) The component used to process instructions in a computer is called

..... [1]

41 A Graphical User Interface (GUI) can be used in an expert system.

(a) Discuss the benefits and drawbacks of using a GUI.

[6]

Ch.6 (b) Describe the inputs and outputs involved in the use of an expert system.

[4]

42 An organisation is planning to replace its desktop computers with laptop computers.

Contrast a laptop computer with a desktop computer.

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[6]

43 A computer contains internal memory and backing storage.

Both ROM and RAM are examples of internal memory.

(a) Explain the differences between ROM and RAM.

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[4]

Ch.3 (b) Describe the characteristics of backing storage.

[4]

44 A dialogue based interface can be used to program a satellite navigation device in a vehicle.

Discuss the benefits and drawbacks of using a dialogue based interface in this scenario.

[6]

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45 Phablet computers can be used rather than smartphones.

Discuss the advantages and disadvantages of using a phablet computer rather than a smartphone.

[6]

46 A computer can use both ROM and RAM.

(a) State the characteristics of:

(i) ROM

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.....

[2]

(ii) RAM

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[2]

Ch.3 (b) State **one** use for each of the following storage devices and media.

(i) ROM

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[1]

(ii) RAM.

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.....

[1]

(iii) Blu-ray disc

.....
.....

[1]

(iv) Magnetic tape

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.....

[1]

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47 Smartphones and desktop computers can be used to play video games.

Discuss the advantages and disadvantages of using a smartphone rather than a desktop computer to play video games.

[6]

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48 A gesture based user interface can be used in gaming devices to play games.

Describe the benefits and drawbacks of using a gesture based interface in this scenario.

[6]

Mark Scheme

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Question	Answer			Marks
1		internal	external	
	Mouse		✓	
	Video card	✓		
	Printer		✓	
	Actuator		✓	
	2 marks for 4 correct ticks 1 mark for 2 or 3 correct ticks 0 marks for 0 or 1 tick			

Question	Answer	Marks
2	Four from: Screens tend to be anti-glare Uses touch screen Front and back facing cameras are included Has a built in battery Lightweight Uses Bluetooth/WiFi/3G/4G/5G Uses solid state memory Uses an onscreen keyboard Portable Small footprint	4

Question	Answer				Marks
3		control	measurement	modelling	
	Personal finance			✓	
	Weather forecasting			✓	
	Burglar alarms	✓			
	Weather stations		✓		

Question	Answer	Marks
4a	Speaker Screen	2
4b	Four from, for example: Order goods from the internet Use it to surf/search the internet GPS Telephone/internet banking Make/receive phone calls Instant message Streaming of music Streaming videos Text messaging Taking photos	4

Question	Answer	Marks
5a	The physical components of the computer	1
5b	Two from: Processor Motherboard Video/graphic card Sound card	2
5c	One from: Programs for controlling the operation of a computer Programs for processing of electronic data Program/data/applications	1
5d	Two from for example: Word processing Spreadsheet Database Presentation	2

Question	Answer	Marks
6	Two from: Tends to be faster to load up the operating system They are more lightweight so can be carried anywhere//More portable Don't generate as much heat Lower power consumption therefore batteries last longer	2

Question	Answer	Marks
7a	<p>Two from:</p> <p>Touchscreen Touchpad Webcam Microphone Keyboard</p>	2
7b	<p>Two from:</p> <p>Compilers Linkers Device drivers Operating systems Utilities</p>	2

Question	Answer	Mark
8a	<p>Two from:</p> <p>Headset/head mounted displays/HMD Data goggles Steering wheel Large monitor/screen/projector Surround Speakers</p>	2
8b	<p>Three from:</p> <p>A computer-generated simulation Uses a three-dimensional environment Can be interacted within a real or physical way The equipment is fitted with sensors</p>	3

Question	Answer	Marks
9a	Physical components of a computer system	1
9b	<p>Two from:</p> <p>Microphone Camera Sensors</p>	2
9c	<p>Two from:</p> <p>Compiler Linker Operating system Utilities Device driver Interpreter</p>	2

Question	Answer	Marks
10	<p>Four from: ROM Read Only Memory Non-volatile//Data is not lost when the computer is switched off Used to store the startup instructions/BIOS</p> <p>RAM Random Access Memory Volatile//Data is lost when the computer is turned off Stores the current running program/instruction RAM can be written to and read from</p> <p>To gain full marks the description must have correct answers for both ROM and RAM</p>	4

Question	Answer	Marks																				
11	<table border="1"> <thead> <tr> <th></th> <th>Control</th> <th>Measurement</th> <th>Modelling</th> </tr> </thead> <tbody> <tr> <td>Maintaining the growing conditions in a glasshouse</td> <td>✓</td> <td></td> <td></td> </tr> <tr> <td>Aircraft flight simulation</td> <td></td> <td></td> <td>✓</td> </tr> <tr> <td>Monitoring the pollution in a river</td> <td></td> <td>✓</td> <td></td> </tr> <tr> <td>Using What-ifs</td> <td></td> <td></td> <td>✓</td> </tr> </tbody> </table>		Control	Measurement	Modelling	Maintaining the growing conditions in a glasshouse	✓			Aircraft flight simulation			✓	Monitoring the pollution in a river		✓		Using What-ifs			✓	4
	Control	Measurement	Modelling																			
Maintaining the growing conditions in a glasshouse	✓																					
Aircraft flight simulation			✓																			
Monitoring the pollution in a river		✓																				
Using What-ifs			✓																			

Question	Answer	Marks
12	<p>Six from: Advantages Smartphone can access the internet in more places Smartphone is more likely to retain the connection whilst on the move They can access the internet quickly as they are more likely to have the smartphone with them</p> <p>Disadvantages Websites displayed on the smartphone are not full versions of the website Browsing/reading the website is more difficult due to smaller screen size More difficult to type in/navigate the websites/emails due to smaller onscreen keyboard As children can access the internet from anywhere it leaves them more vulnerable to exploitation</p> <p>To gain full marks the description must have correct answers for both advantages and disadvantages</p>	6

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Question	Answer	Marks
13a	hardware	1
13b	software	1
13c	an applet	1
13d	a sensor	1

Question	Answer	Marks
14	<p>Two from:</p> <p>Computer</p> <p>Analogue to digital convertor/ADC</p> <p>Digital to Analogue convertor/DAC</p> <p>Actuator</p>	2

Question	Answer	Marks
15a	<p>Three from, for example:</p> <p>SMS</p> <p>Making/receiving a phone call</p> <p>Checking the time</p> <p>Use appointments/calendar</p> <p>Taking pictures</p> <p>Record sound</p> <p>Bluetooth to share files</p>	3
15b	<p>Two from:</p> <p>More accessible/portable as it is on the wrist</p> <p>Less chance of being lost/stolen/forgotten</p> <p>Less chance of it being dropped as it is fastened to the wrist</p> <p>Can access simple apps easier for example heart rate/timer</p>	2
15c	<p>Two from:</p> <p>Smaller screen size therefore difficult to see</p> <p>More difficult to enter the data</p> <p>More difficult to access detailed apps for example, email</p>	2

Question	Answer	Marks
16	<p>Six from:</p> <p>Similarities</p> <p>Both can use Wi-Fi to access the internet Both can access the internet use hotspots Both can use Bluetooth Tethering to allow access to the internet</p> <p>Differences</p> <p>Desktops</p> <p>More websites will work with the desktop Larger keyboards to type in a web address Larger screens to see the whole webpage More stable and reliable connections Tends to be a clearer layout to make it easier to access the internet More accessible information A desktop can connect to the internet via an ethernet cable</p> <p>Smartphones</p> <p>Access the internet from more locations Easier to look things up on the go Screen/keyboard built into the device therefore easier to access websites A smartphone can use mobile data/4G/3G to access the internet A smartphone is more portable therefore you can access the internet while travelling</p> <p>To gain full marks the comparison must have correct answers for both similarities and differences</p>	6

Question	Answer					Marks
17		database (✓)	presentation (✓)	spreadsheet (✓)	word processing (✓)	4
	Producing a letter to send out to patients				✓	
	Creating graphs to show numbers of people attending the medical centre			✓		
	Creating queries from patient's details	✓				
	Creating an interactive display of services offered		✓			

Question	Answer	Marks
18a	<p>Three from:</p> <p>Quick to enter commands Easy to enter commands Do not have to learn commands Less errors as commands not typed Works with a touch screen Intuitive Easy to select options/tasks</p>	3
18b	<p>Three from:</p> <p>Connectivity – can connect using Wi-Fi/3G/4G/5G/Bluetooth/NFC Touch screen technology Camera Technology Responds to physical world using sensors GPS/Sat nav Audio technology Messaging technology</p>	3

Question	Answer	Marks
19a	Data from sensor is in analogue form Computer only reads digital data Analogue to Digital Convertor	3
19b	Six from: Microprocessor reads the data from the ADC Microprocessor stores pre-set value Microprocessor compares current water level with preset value If the current water level is greater than the pre-set value the microprocessor sends a signal to the DAC to convert data to analogue ... signal sent to an actuator Actuator raises the flood barrier Continual process	6

Question	Answer	Marks
20	One mark for correct feature and one mark for correct associated reason Feature: Windows Reasons: See more than one task at a time Each task can be in a separate window To display the task Feature: Icons Reasons: Tasks can be recognised Click on an icon and it opens (a task/app) Easy/faster to open an app by clicking on it Feature: Menus Reasons: To choose all the available options Feature: Pointers Reasons: To select tasks/icons	4

Question	Answer	Marks
21	Four from: <ul style="list-style-type: none"> They can be read from many angles The physical size of the QR can be small therefore takes up less space on the box Can be used to track stock Can contain links to more information about the products It contains information about the product Can be read by any device with a camera and suitable software 	4

Question	Answer	Marks
22a	<p>Two from:</p> <ul style="list-style-type: none"> • Mixture of Virtual reality and Augmented reality • Combines real/physical world with digital world and interacts with each • Allows seamless interaction between the real and virtual worlds 	2
22b	<p>Six from:</p> <p>The manufacture of components is cheaper The whole process of setting up and printing the components can be quicker Quality is consistent Minimises waste Fewer sub-components making it stronger and safer The size of the component is limited to the size the 3D printer can product If the initial design is incorrect it is harder to correct Initial cost of the printer could be more costly Requires skilled programmers/operators therefore the initial costs could be higher</p>	6

Question	Answer	Marks
23a	<p><i>Applications</i></p> <p>One from:</p> <p>This provides the services that the user requires to solve a task Allows the user to perform a task</p> <p><i>System</i></p> <p>One from:</p> <p>This provides the services that the computer requires to operate Controls the hardware and software This provides a link between the user and the hardware Acts as a platform for other software to run</p>	2
23b(i)	<p>Two from, for example:</p> <p>Word processing software Spreadsheet Database management system Applets</p>	2
23b(ii)	<p>Two from:</p> <p>Compilers Linkers Device drivers Operating system Interpreters Utilities</p>	2

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Question	Answer	Marks
24	<p><i>Analogue data</i> Max three from: Is continuous In waveform Low bandwidth <u>Needs to be converted to be processed/read/stored by a computer</u></p> <p><i>Digital data</i> Max three from: Is discrete In the form of 1s and 0s/binary Uses sampling to capture the data High bandwidth Can be processed by a computer without conversion</p>	4

Question	Answer	Marks
25	<p>Four from: Controls all CPU operations Controls the input and output devices Controls the movement of data within the computer</p> <p>Retrieves instructions Retrieves data from memory Decodes instructions</p> <p>Executes instructions sent from the hardware and software Carries out calculations and comparisons Makes logical decisions Registers/stores the results from the ALU</p>	4

Question	Answer	Marks
26	<p>Two from: Command Line/CLI Dialogue based Graphical user/GUI</p>	2

Question	Answer	Marks
27a	<p>Two from:</p> <p>Looking at a screen to control devices Point device at a building/object and info is displayed Gaming AR glasses in healthcare Immersive learning Layering filters in social media</p>	2
27b	<p>Two from:</p> <p>AR uses a real-world setting whereas VR only enhances a fictional reality AR can be accessed with a smartphone whereas VR usually requires a headset device AR enhances both the virtual and real world whereas VR is completely computer generated/virtual world</p>	2

Question	Answer	Marks
28a	<p><i>Advantages</i></p> <p>Max five from:</p> <p>All the peripherals are separate therefore easier to customise to user's needs All the peripherals are separate therefore it is easier to repair Connected to the mains electricity therefore no battery issues Tends to have a stronger internet signal as it can use wired connections More expandable Has a physical/larger keyboard makes it easier to enter data/fewer data entry mistakes Has a larger screen makes it easier to read the documents</p> <p><i>Disadvantages</i></p> <p>Max five from:</p> <p>More difficult to move around Has a larger footprint Has trailing leads therefore can be a safety issue If there is a power outage the unit will lose power instantly whereas the tablet may operate for longer The tablet can use wifi and 4/5/6G whereas the desktop tends to use wifi or wired</p>	6
28b(i)	<p>Two from, for example:</p> <p>Keyboard Mouse Touch screens Scanners Digital Cameras Microphones</p>	2
28b(ii)	<p>Two from, for example:</p> <p>Printer Monitor/projector Speakers/headphones</p>	2

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Question	Answer	Marks
29	Motherboard ROM	2

Question	Answer	Marks
30a	Two from: Experts can operate the user interface faster Does not require a high resolution monitor Requires less processing power to run the CLI	2
30b	Two from: Graphical User Interface (GUI) Dialogue based Gesture based	2

Question	Answer	Marks
31a	Two from: Data can be stored on the laptop Does not require the use of external storage devices when transferring data to and from the office Employee does not have to use his own equipment saves the employee money Would only be used by the employee therefore improves security	2
31b	Two from: Laptop can be lost/stolen in transit Laptop can be more easily damaged Risk of uploading/downloading a virus/malware by use of own devices Security could be compromised if own storage devices are used Device could be used for other work/personal activities (causing security problems)	2

31c	<p>Four from:</p> <p>Navigation buttons to move to next page Help button to get help with filling in the form Drop down lists to enter the address/name Auto-complete to speed up the process to add addresses Character boxes to make it easier to type in the data Good use of white space to make it easier to read Layout of form to make it easier to read Easy to understand instructions to help fill out the form correctly Use of radio buttons/tick boxes for gender Font size to make it easier to read Font style so it is easier to read Well designed layout to make it easier to fill in</p>	4
31d	<p>Four from:</p> <p>Regularly rest the eyes Sit at arm's length from the screen Use a foot rest Use a wrist rest Arrange the workspace so that there is enough space to work Use an ergonomic chair/mouse/keyboard Maintain correct posture Use blue light glasses Ensure the room lighting matches the screen brightness Keep the laptop screen clear of dust and dirt</p>	4

Question	Answer	Marks
32	RAM ROM	2

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Question	Answer	Marks
33a	<p>Two from:</p> <p>Gaming</p> <p>Example of walk through systems</p> <p>Example of training</p>	2
33b	<p>Max Six from:</p> <p>People can be trained allowing them to practice over and over until they have perfected a particular task</p> <p>People can be trained in a virtual environment without risk to themselves/others</p> <p>Allows training in dangerous situations where it is impossible to practice the real thing</p> <p>Can give people a much more interactive experience when they are trained</p> <p>Allows people to retain knowledge much better than reading about it in a book/training room</p> <p>Allows people to walk through to check for potential errors/tested before the design is implemented</p> <p>Designs can be modified quickly therefore better objects can be made</p> <p>Confusion between real life and the game</p> <p>Causes headaches/eye strain/motion sickness/falling over</p> <p>Can become addicted to gaming with this system</p>	6

Question	Answer	Marks
34a	<p>Two from:</p> <p>GUI</p> <p>Is a WIMP system</p> <p>More user friendly</p> <p>Can be customised more easily</p> <p>Has limited options</p> <p>They are intuitive</p> <p>CLI</p> <p>The user has to type in commands</p> <p>The user needs a good knowledge of commands/system</p> <p>Users need to remember/learn the commands</p>	2
34b	<p>Two from:</p> <p>Dialogue based</p> <p>Gesture based</p>	2

Question	Answer	Marks
35	<p>Max three from:</p> <p>Benefits of using laptop computers</p> <p>It has a large screen making it easier to read back the notes</p> <p>The software used is more compatible with other devices</p> <p>More ports on a laptop therefore easy to transfer data</p> <p>Has a large/separate keyboard therefore less errors on data entry//Has a large/separate keyboard therefore making it easier to type in the data</p> <p>Max three from:</p> <p>Drawbacks of laptop computers</p> <p>Laptops are less portable</p> <p>More difficult to take pictures using a laptop</p> <p>Laptops need a flat surface to work on</p> <p>Large footprint</p> <p>Smartphones can use 4G/5G/mobile data</p>	4

Question	Answer	Marks
36a	<p>Two from:</p> <p>Virtual Reality is completely computer generated world</p> <p>Virtual Reality may require a headset/goggles</p> <p>Virtual Reality only enhances a fictional reality</p> <p>Augmented Reality can be accessed with a smartphone</p> <p>Augmented Reality combines both the virtual and real world</p> <p>Augmented Reality creates a new layer on top of existing reality</p>	2
36b	<p>Six from:</p> <p>It can help people connect with others to improve communication skills</p> <p>Overlays information/warnings on the display therefore leads to safer activities</p> <p>Produces more efficient/engaging shopping as user could look at a product and information can be displayed</p> <p>The user can try on clothing electronically so you can see what the clothes look like (on you) before buying</p> <p>Used in walk through systems to give a greater experience for users</p> <p>Using it in (interactive) gaming could allow people to have a better experience of the game</p> <p>As it is used in gaming it could lead to safety issues as the player could be immersed in the game</p> <p>Could damage social relationships/skills as it removes face to face interaction</p> <p>On screen information could be distracting</p> <p>Allows us to interact with various characters/situations in real-time but not necessarily the real life</p>	6

Question	Answer	Marks
37a	<p>Two from:</p> <p>Uses a WIMP system It can be customised Don't have to learn commands They are intuitive</p>	2
37b	<p>Two from:</p> <p>Dialogue based Gesture based Command line interface</p>	2

Question	Answer	Marks
38a	<p>Two from:</p> <p>It's a computer system It can simulate human intelligence Mimics human problem solving/decision making/behaviour It can learn from previous decisions</p>	2
38b	<p>Four from:</p> <p>It targets advertisements allows advertisers to attract more relevant customers But targetted adverts may not be relevant/wanted Influences the user to buy articles by advertising by analysing the items they searched for/interests of users on the site/comments made by users Allows for better content on the site as customised to the user Makes it easier to locate/communicate with people therefore improve communication skills It can recognise people's faces/tag people in photographs posted to reduce the user's work in doing this It can easily detect spam/inappropriate material therefore making the social media site safer</p>	4

Question	Answer	Marks
39a	So it can be processed by a computer	1
39b	<p>One from:</p> <p>So it can be used in control systems So that the data can be understood by a human</p>	1

Question	Answer	Marks
40a	Applications	1
40b	System	1
40c	Hardware	1
40d	One from: Central Processing Unit Micro processor	1

Question	Answer	Marks
41a	<p><i>Benefits</i> Max five from: Easy to use especially for a beginner Commands tend to be intuitive Commands do not need to be typed in therefore less typing errors No need to learn complex syntax A GUI lets users exchange data between different software applications</p> <p><i>Drawbacks</i> Max five from: GUIs take up a large amount of hard disk space They need a significant amount of RAM to run They use a lot of processing power They can be slow for experienced programmers to use Restricted to pre-determined options</p>	6
41b	<p><i>Inputs</i> Max three from: Data from experts is entered into the expert system Corrections are entered The user answers the question by typing yes or no</p> <p><i>Outputs</i> Max three from: The data entered is displayed on the screen The question is displayed A list of diagnoses / probabilities / results is displayed An explanation is displayed</p>	4

Question	Answer	Marks
42	<p>Six from:</p> <p>Laptop computers are mobile computers Laptop computers have a smaller footprint Laptop computers tend to be lighter in weight Laptop computer the main components are integrated Laptop computers can be run by battery power The components of a desktop tend to be standardised therefore if one breaks its easy to replace Laptop computers are more difficult to repair Laptop computers are more expensive to repair Laptop computers tend to have smaller screens Desktop computers tend to have a more stable internet connection</p>	6

Question	Answer	Marks
43a	<p>Max three from:</p> <p>ROM is non-volatile memory ROM is permanent memory ROM is read only</p> <p>Max three from:</p> <p>RAM is volatile memory RAM stores data temporarily RAM can be static or dynamic RAM needs power to keep the data refreshed RAM has a larger memory capacity than ROM RAM can be written to and read from</p>	4
43b	<p>Four from:</p> <p>Non-volatile Permanent storage Storage devices have slow access rates Large storage Can be removable storage Secondary storage Can be written to and read from</p>	4

Question	Answer	Marks
44	<p><i>Benefits</i> Max five from: Allows hands free control Speeds up the entry of data Distraction free interface Simpler system for the driver Less errors made on data entry</p> <p><i>Drawbacks</i> Max five from: Background noise can affect the data entry Less features than other interfaces Issues with accents/understanding commands The user needs to be trained with the system Commands need to be spoken clearly Commands may have to be learnt May have a limited number of commands</p>	6

Question	Answer	Marks
45	<p><i>Advantages</i> Max five from: Larger screen therefore data is easier to see the written content Larger screen so less strain on the eyes Larger screen allows many users to view the screen at the same time Larger onscreen keyboard making data entry easier Larger onscreen keyboard means less typing errors Larger onscreen keyboard means faster data entry Higher memory storage allows for faster processing More ports to attach devices therefore is expandable</p> <p><i>Disadvantages</i> Max five from: A smartphone can be used with one hand A phablet computer has a larger footprint A smartphone is more portable Larger in size than a smartphone making it more cumbersome (1)</p>	6

Question	Answer	Marks
46a(i)	Two from: Data can only be read Non-volatile memory Stores data permanently	2
46a(ii)	Two from: Data can be written to and read from Volatile memory Stores data temporarily	2
46b(i)	One from: Contains: Start-up instructions BIOS Hardware initialisation routines Self-test procedures	1
46b(ii)	Stores the data the computer is currently processing	1
46b(iii)	One from, for example: Storing HD movies Video games Data backup	1
46b(iv)	One from: Storing backup data Stores an archive	1

Question	Answer	Marks
47	Advantages Max two from: Smartphones are more portable therefore can play the game in different places More varieties of games as the smartphone is more likely to be used Disadvantages Max five from: Smaller screen makes it difficult to see the content of the game Smaller controls makes it more difficult to use Drains the battery more on the smartphone Desktop computers not reliant on batteries Takes up more of the processing power of a smartphone meaning that hardware intensive games not used The game can be interrupted more due to the functions of the phone The smartphone is more likely to be with the user therefore there can be more issues with gambling Excessive use of the smartphone can lead to more health issues As storage is smaller on a smartphone the game can take up a lot of storage space some games cannot be downloaded / run on a smartphone Causes distractions which could lead to injury	6

Question	Answer	Marks
48	<p><i>Benefits</i> Max five from: The screen lasts longer as no physical contact with the user Natural form of communication which makes the game more realistic Fast form of data entry Do not require additional devices The screen display is free of buttons</p> <p><i>Drawbacks</i> Max five from: Reduced commands Commands have to be learnt correctly Causes fatigue Immersion syndrome Distinct physical actions needed as gestures can be mistaken The device can be triggered accidentally If the system is too complex more gestures have to be learnt Uses more processing power Requires a good camera More physical space needed</p>	6