

- 1 The 2020 Olympic Games committee is producing a database to show the medal winners in the cycling events.

It is important that the correct data type is used in each of the fields.

- (a) Tick (✓) the most appropriate data type for each of the following fields.

	Boolean (✓)	Numeric (✓)	Text (alphanumeric) (✓)
Athlete_name			✓
Gold_medal (Y/N)	✓		
Age		✓	
Name_of_country			✓

[4]

- (b) A report has been produced that shows the male gold medal winners from the past three Olympic Games.

Write down **six** of the formatting features that have been used in the report.

Press Release: Mountain Bike competitions

The gold medalists for the 2008 to 2016 games in the Mountain Bike competitions are:

2008 Julien Absalon

Julian is a French rider who won at the Laoshan Mountain Bike course in Beijing, China. In 2012 he abandoned the race but came 8th in 2016.

2012 Jaroslav Kulhavy

Jaroslav is a member of the Czech Republic team who won at Hadleigh Farm, UK.

2016 Nino Schurter

Nino is from Switzerland. He won the Rio Mountain Bike competition in 34.617 mins at the Deodoro cycling base.

1. *Border* - The entire document is under a bold border.

2. *Bold* - The heading "Press Release:..."

3. *Superscript* - 8th in 2016.

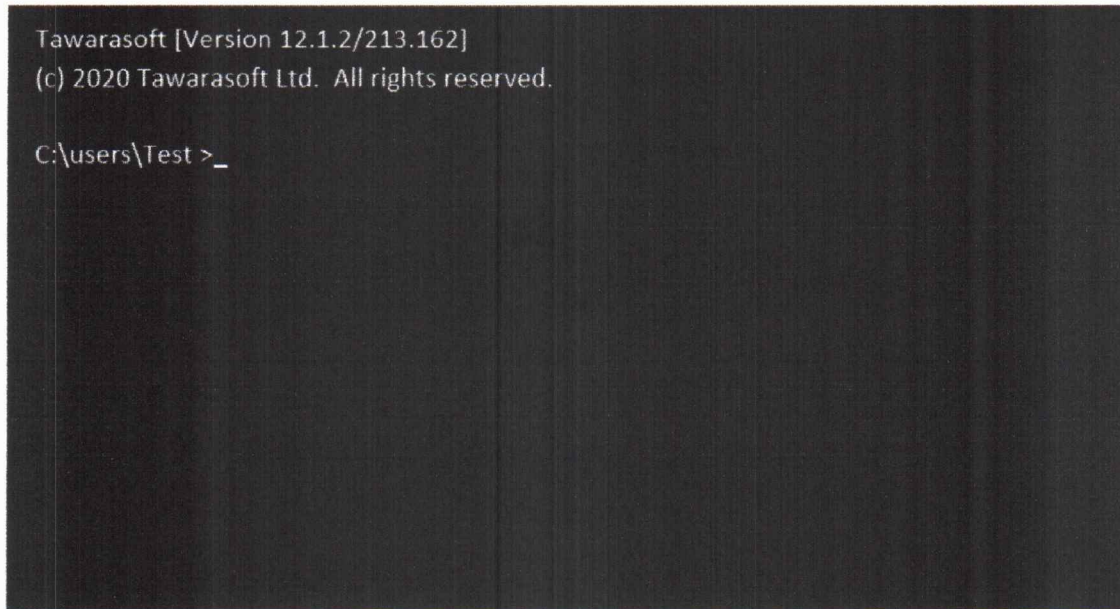
4. *Underline* - 2008, 2012, 2016.

5. *Text highlighting*

6. *Italics* - Hadleigh farm, UK.

[6]

2



(a) Write down the type of interface shown.

Command Line Interface (CLI) [1]

(b) Write down **two** disadvantages of using this type of interface.

1. One has to remember / learn all the commands.
2. One will have to type in the commands accurately.
- It is difficult to edit the commands once typed in.

[2]

- 3 Complete the following sentences using the most appropriate network term.

A communication method that wirelessly connects a mobile phone to a car, to allow hands-free use of the mobile phone is *Blue tooth*

A network device that allows a stand-alone computer, using a dial-up analogue connection, to connect to an ISP is a *Modem*

A network device that allows a LAN to connect to the internet is a *Router*

A wireless communication method used in WLAN is *wifi*

[4]

- 4 A teacher is creating a spreadsheet that will record the grades students achieved in recent tests and compare the average grades of these tests with the students' forecast grades. The grading the teacher is using awards 1 for the highest grade down to 10 for the lowest. The teacher has created a validation rule on the grade entered.

- (a) Give examples of data used to test the validation rule. Your answers for abnormal test data must be for a different reason in each case.

Type of test data	Example of test data
Normal	<i>5 between 1 and 10.</i>
Abnormal	<i>16 outside the range</i>
Abnormal	<i>a a character</i>
Extreme	<i>1 or 10</i>

[4]

- (b) Part of the spreadsheet is shown, column G subtracts the Forecast grade from the Average grade.

	A	B	C	D	E	F	G
1	Grades obtained in:						
2	Student name	Exam 1	Exam 2	Exam 3	Average grade	Forecast grade	Difference
3	Velia Grimaldi	5	7	8	7	6	1
4	Giuseppe Campo	4	5	3	4	4	0
5	Nicola Donati	2	3	3	3	3	0
6	Giovanni Agnelli	1	3	2	2	5	-3

- (i) Describe the steps the teacher can take to edit the spreadsheet to prevent new data being typed into the Forecast grade column.

- First unlock the worksheet by first selecting the whole worksheet.

Right click on the page, then select format cells. Click protection tab, then unlock cells.

Thereafter highlight F3:F6 (forecast grades column)

Right click / or click on lock cells.

Thereafter click on Review then protect sheet.

[5]

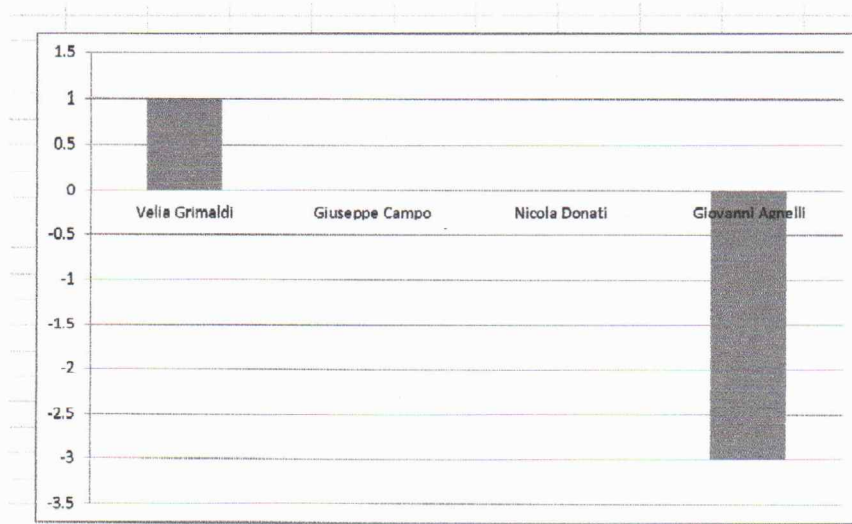
- (ii) The teacher has typed a formula in cell E3. The formula is `ROUNDUP(AVERAGE(B3:D3),0)`. Explain, in detail, what the formula does.

- Average is an Excel function for calculating average from the selected.

It gets / calculates the average of the range B3 to D3. It then rounds up the answer to 0 decimal places.

[4]

- (c) The teacher has produced a graph showing the differences between the forecast grade and the average grade for each student. The graph looks like this.



Describe the steps taken to create the graph. Include in your answer **three** improvements that could be made to the graph.

Method... - First highlight the student names column, A3:A6
 - Hold the CTRL key in your keyboard.
 - Select the difference column, G3:G6
 - Click Insert, bar graph.

Improvement 1... Add the chart title

Improvement 2... Add both the X-axis and Y-axis

Improvement 3... Add the chart legend.
 - Remove the gridlines

[6]

- 5 When using the internet, FTP can be used.

Explain what is meant by the term FTP.

File Transfer Protocol

It's a protocol used when transferring files from one computer to another over the internet.

[2]

- 6 Smishing and phishing can affect the security of a user's data.

(a) Compare and contrast smishing and phishing.

- They both use communication devices to collect personal data.
- They both require the user to respond by entering personal data.
- In both they require the user to communicate quickly.
- Both of them are threats to computer security.

Differences

- In smishing, it involves fake text messages sent to one's phone whereas phishing it's fake emails sent to your computer.
- A smishing message is shorter than a phishing email.
- In smishing the user may be requested to call back whereas in phishing the link is normally attached in the email.

[6]

(b) Describe the methods which can be used to help prevent phishing.

- Do not reply to emails from unknown sources with details of your personal data.
 - Avoid opening emails from unknown sources and further avoid opening links attached.
 - Check if the "To; field" has a large number of similar emails to yours then that's phishing.
 - Check the time that email was sent and if its unusual time then it could be a sign of phishing
 - Do extensive research before replying to any message, check the domain name or company name and address.
 - If there are several grammar mistakes or spellings then be suspicious
 - Report any suspicious activity
- [6]

7 Complete each sentence using the most appropriate output device from the following list.

3D printer	Buzzer	Dot matrix printer	Heater
Laser printer	LCD monitor	Light	Wide format printer

(a) The device that can produce prosthetic limbs is called a

3D Printer [1]

(b) The device that can output soft copy is called a

LCD Monitor [1]

(c) The device that can produce sound as its main output is called a

Buzzer [1]

- 8 Tablet computers tend to be used more than desktop computers.

Describe the advantages and disadvantages of using a tablet computer rather than a desktop computer.

Advantages

- Tablets are more portable than desktop computers.
- They can be used on the move than desktops.
- They are light in weight than desktops and takes less space.
- They have powered battery so they can be used away from the power supply.

Disadvantages

- They are more portable hence prone to theft / lost.
- Easier to upgrade a desktop than a tablet computer.
- A tablet has less standard ports / sockets.
- Desktop computers are less likely to be damaged as they are not portable.

[6]

- 9 People rely heavily on microprocessor-controlled devices in the home.

(a) Describe **two** drawbacks in terms of lifestyle changes this has produced for the users of such devices.

1. It can lead to laziness.

- There's lack of exercise

2. The manual household skills are lost.

It can lead to unhealthy eating due to dependency on ready meals.

[2]

- (b) Many of the microprocessor-controlled devices in our homes use WiFi connections.

Describe the benefits and drawbacks of using WiFi connections in this way.

Benefits

- Less / fewer cables are used hence cheaper to set up.
- The connection is wireless hence no tripping over wires.
- Smartphones can connect to the devices and hence can control them.
- Voice control can be incorporated to control / activate the devices.
- Adding new devices on the network is easy.

Drawbacks.

- It may lead to laziness as voice control are used.
- There might be security issues with the data being intercepted through tapping or illegal access by hackers.
- It loses connectivity as moves away from the access point.
- Wifi is normally affected by weather / heavy walls.

[6]

- 10 Music scores can now be produced using computer systems and appropriate software.

Describe the features of this technology.

- The music score can be saved for future editing.
- The music notes are automatically printed out in the correct format.
- The music can be played automatically as it is written.
- The software used can automatically correct the music score.
- Solo music scores can be easily transformed into music for many parts.
- The editing / correcting of the music score in a different key is faster.

[4]

11 A headteacher is planning to produce a presentation to showcase the school's achievements.

- (a) Describe **two** methods the headteacher could use to gather information about the requirements of the target audience.

1. Conducting interviews with the target audience to get to hear their views and expectations.
2. Give out questionnaires to the target audience.

[2]

- (b) The presentation is to be shown on large monitors at the entrance to the school. The school is planning to embed music into the presentation so that music could be played as the presentation is shown.

Describe the steps the headteacher would need to take to play music in the background of the slides.

- Open the MS powerpoint application, and then open the presentation.
Select the first slide where music will be loaded.
Click insert and then select audio.
Browse through the PC to access the music file.
and select that specific file.
Click play in the background.
Test it by running the slideshow.

[4]

- (c) After showing the presentation to the parents the headteacher wishes to use the presentation to show to young children to encourage them to come to the school.

Describe the features that the headteacher must include to make the presentation meet the needs of an audience of young children.

- Use more bright colors to make it more attractive
- Fonts used need to be easy to read and large enough.
- There's need for a simpler language; no use of hard words.
- Use more pictures than text in order to attract attention.
- Incorporate animation, and transitional effects.
- Include music at the background

[4]

- 12 (a) Describe repetitive strain injury (RSI) and explain what causes it.

Is a general term used to describe the pain felt in muscles, nerves and tendons caused by repetitive movement and overuse. It is caused by continuous use of a keyboard; repetitive clicking of a mouse button.

[2]

- (b) Give **three** ways of minimising the risk of RSI.

1. Use an ergonomic keyboard, mouse
2. Use a wrist rest / or use a mouse rest.
 - maintain correct posture of arms.
3. Use voice-activated software :- to minimise typing
 - Take regular breaks always.

[3]

- 13 Modern laptop computers tend to use external solid state storage rather than external optical storage.

Compare and contrast the use of solid state storage with the use of optical storage to store data.

Comparison:

- They are both used as backup storage devices.
- They are all portable
- They both store videos, music, files, images
- They are both more prone to loss / be stolen.

Differences

- Optical drives are read from and written to using a laser beam. While solid state storage are read and written to using semiconductor chips.
- Optical drives have slower access times than the solid state
- optical drives have slower transfer rates and more easily scratched than the solid state storage devices.
- Solid state has a lower power consumption than optical drives that have a lot of spinning.

[8]

14 There are two types of storage within a computer, internal memory and backing storage.

Discuss the differences between internal memory and backing storage.

- Internal storage include the RAM and ROM while backing storage can either be solid state, optical or magnetic.
- There's more storage space in backing storage than it is in internal storage.
- Backing storage is permanent storage
- The RAM storage loses memory when the computer is turned off and its used to hold current instructions.
- ROM contains the booting up instructions.
- Backing storage has slower access speeds.
- With backing storage, it is easy to replicate data and create more copies of that data.

[6]