1. A web page can use internal and external hyperlinks.

Internal: links to another location within the same website (or domain)/web page (1 mark) External: links to another website (or domain) (1 mark)

1. Explain the difference between an internal hyperlink and external hyperlink.

Internal takes the user to inside the website. External takes the user to outside the website to another website/page

1. Gillian is viewing a website on her laptop. Name the software on Gillian’s laptop that enables her to do this.

A web browser

1. Calculate the backing storage required for an 8 bit colour image 400 pixels by 600 pixels. Express your answer in Kilobytes.

400x600(1mark) x 8 (1mark) =1920000 (bits)

1920000/8 = 240000 (bytes)

240000 (bytes)/1024 (1 mark) = 234.375 (Kb)

2 marks for identifying formula, 1 mark for changing units. Kb not required as in question 3 marks for correct answer with no working Accept rounding up to 235

1. Name the part of the processor that deals with comparisons.

Arithmetic Logic Unit/ALU

1. Convert the decimal value 47 into the equivalent 8-bit binary number.

00101111 – must show 8 bits

1. State one problem associated with storing data in a flat file database

Data duplication • Data inconsistency or update/ deletion/insertion anomalies • Data integrity errors (due to data inconsistency) • Inconsistent search results in multi-value fields

1. A bank employee has lost a laptop storing customers’ personal details. Identify one security precaution the bank should have in place to prevent unauthorised access to this information.

Encryption • Password/PIN • Biometric

1. Before going live with a new website, the developer makes sure it matches the original design. Describe one other type of testing that the developer should carry out.

Check navigation Checks all hyperlinks/hotspots Ensure graphics are not pixelated Ensure audio clips run Any JavaScript issues Check compatibility with browsers

1. Businesses and individuals are now making use of cloud services instead of local storage for storing their data. State one benefit of using cloud based storage instead of local storage.

Can access data from any computer device remotely • No requirement for own servers • Less need for own technical support on site • Automatic backup/recovery of data

1. When creating a school website, James copies images, sections of text and ideas from a website about energy use. Explain why he might be in breach of the Copyright Designs and Patents Act.

He is using other peoples work so will need their permission to use it within a website that the public can access. Plagarism is not acceptable.

* A computer program is created to store data about the total number of pupils who pass an exam. State the most suitable data type for the total.

Integer

* Katie is in her back garden using her smartphone to access her neighbour’s wireless network. State the law Katie is breaking.

The Communications Act

* Describe how keylogging can be an online security risk.

Description of sensitive information (PIN, passwords etc) being logged.

No mark for ‘stores/logs key presses’ on its own.

* A company has both a wired and wireless network. The wireless network allows portability of workstations. Describe one advantage for the company of the wired network over the wireless network.

Any one valid answer for wired • It’s more secure/security • It’s more reliable/reliability • Upload/download speed faster

* The photograph, before editing, is 4 inch by 6 inch with a resolution of 600 dpi and 24-bit colour depth. Calculate the file size of the photograph. State your answer using appropriate units. Show all your working.

4 × 6 × 600 × 600 (1 mark) × 24 bits (1 mark)

(207360000 bits/8/1024/1024) = 24.72 Mb (1 mark)

Correct answer with no working = 3 marks. Wrong answer with no working = 0 marks. If candidate makes only 1 error marks should be awarded for the remaining calculation being carried out correctly. Correct answer must include ‘appropriate’ units including: • 25,312.5 Kb • 24.72 Mb or 24.7 Mb • 0.024 Gb Note, if the candidates first line is: 4 x 6 x 600 the answer = 42.2 Kb or 42 Kb (award 2 marks as only 1 error)



Machine Code or Binary

The HTML code used to include the SQA logo uses the img src tag shown below.

<img src= “…/IMAGES/SQA-LOGO.GIF”>

Name the standard file format used to store the image.

GIF

Question 15 – Holibobs

State URL of this web page

Ans: [http://www.holibobs.co.uk/greece /crete234.html](http://www.holibobs.co.uk/greece%20/crete234.html)

Webpage created using HTML & Javascript – state the feature of HTML code that allows web page to be formatted

Tags

Styles

Will accept CSS – cascading style sheets

Explain why the HTML code for link uses absolute addressing

It is an External link to another site/server

Suggest one other use of Javascript that could be added to webpage

Any acceptable use of Javascript to create interactivity or dynamic content on a webpage.

Complete table

|  |  |
| --- | --- |
| File format | Example |
| pdf | brochure |
| mp4 | mp4 – ‘Download Videos’ or ‘Virtual Tour of Property’ buttons |
| jpeg | jpeg – Any example of a graphic on page or ‘Photo Gallery’ or ‘Location Map’ or ‘Villa picture’ or ‘Holibobs Icon’ or ‘Weather Widget’ |

Explain why Beach v2 is being added to the photo gallery instead of Beach v1

Reduced colour depth • Smaller file size • Allows image to load faster

Search for holidays in Greece

Describe how list is sorted

Price descending (1 mark) •

Resort ascending (1 mark, but must follow Price)

Question 17 – Supermarket

Identify 2 reasons why webpage would be unsuitable for portable devices

Answers should identify parts of this webpage which will not be suitable on a small screen device. For example: • Navigation bar does not fit across small screen • Too many columns • Too much information for small screen • Icons too small to click on right hand side • Would take too long to load images on portable device

Explain why customers should be reassured by encryption

Personal details transmitted in code cannot be read (by hackers). or Keeps personal data secure/safe or Only the company can access the encrypted data

Explain why different types of smartphone would require versions of the app

Different operating systems on devices or Hardware differences (resolution, dual core processor, memory etc)

Identify 2 smartphone input devices to allow search features of this app

Touchscreen • Microphone • Camera

Complete table to show magnetic optical or solid state

|  |  |  |
| --- | --- | --- |
|  | Type of storage | Reason |
| Smartphone storing the app | Smartphone (1 mark) Storage: Solid state  | Reason: Low power/size/robust/ transfer rate |
| Web server storing the website | Web Server (1 mark) Storage: Magnetic | Reason: Large capacity/low cost per Mb |
| Collection of video recipes stored on DVD | DVD (1 mark) Storage: Optical | Reason: Portable/read by range of devices |

The minimum amount of RAM etc. State what RAM stands for

Random Access Memory

Question 21 BigTech Gadgets

List the attributes/fields that should be included in each table

|  |  |
| --- | --- |
| Exhibitor Table | Product Table |
| exhibitor code company name area stand number | exhibitor code product ref item name price |

Identify Foreign Key to link the two tables

Exhibitor code

Name field type required to store an image

Object

Graphic

Container

Stand Number - Name type of validation that should be implemented on this field

Presence check

Identify one feature that makes map a suitable user interface for a touch screen kiosk

Large areas to make selection easy • Large readable text • Uncluttered screen

Describe what happens within a database when button is selected (tech zone button)

Macro/Script/search program activated (1 mark) • Search carried out using Area field = Tech Zone (1 mark)

Another screen shown – identify 2 features used on screen to aid navigation

Breadcrumb • Highlighted selection • Back/Forward buttons • Search (bar) • Home (button)