

## (2) Bit mapped graphic data

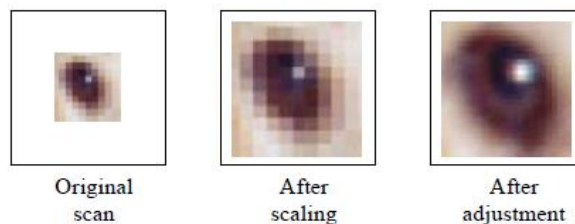
1. Voice tracks in a web site are initially stored using the RAW file format. State the name of the **technique** used to convert the analogue signal into a digital form. (1)
2. A logo was converted to a bit-map so it could be **animated**. Name a bit-map format that would be suitable for storing the animated picture. (1)
3. *CCDs* are used by both scanners and digital cameras when capturing an image. Explain how the CCD in a scanner differs from those in a digital camera. (2)
4. The logo for a new business has been drawn on paper and then scanned into a computer. The logo is shown on the right. The edges of the scanned logo appeared slightly jagged. *Anti-aliasing* was used to smooth the edges. Describe how anti-aliasing achieves this. (2)
5. Explain how *resampling* might remove the jagged edges.
6. A small part of the SVG code for a logo is shown below.



**7. `rgb(0,0,255)`**

The largest number that can be entered in to the **rgb** instruction shown above is 255. Calculate the bit depth of that object. Show **all** working. (2)

8. After scanning an image in 24 bit colour, Zainab scaled the eye and used *image manipulation software* to adjust it.



- (i) Name the feature of image manipulation software that Zainab used to carry out the adjustment.
  - (ii) Explain how this feature is able to improve the image of the eye.
  - (iii) Name and describe a *compression technique* that would allow Zainab to reduce the file size of a 24-bit colour eye without losing any image quality when it is decompressed.
9. The image on the opening screen of the information service is shown below. The image has bands of colours instead of a gradual transition between colours. Name and describe **one** technique that could be used to improve the appearance of the bands of colour.



10. MPEG is a compressed video file type. Describe how MPEG achieves compression. (3)
11. A web designer has old analogue video recordings that he is transferring onto his computer. Describe the roles of the ADC and DSP on the video capture card during the transfer. (2)