

2004 Paper 6 Question 5

Computer Graphics and Image Processing

- (a) Explain why display devices appear to be able to reproduce (almost) all the colours of the spectrum using only red, green and blue light. [4 marks]
- (b) Describe an algorithm (other than thresholding) which will convert a greyscale image (8 bits per pixel) to a bi-level black and white image (1 bit per pixel), with the same number of pixels, while retaining as much detail as possible. [8 marks]
- (c) Explain what specular and diffuse reflection are in the real world. State and explain equations for calculating approximations to both in a computer. [8 marks]