Question 1

a) Outline two different methods for representing images and graphics on a computing system. Distinguish between Hi-Color and True-Color in terms of the number of bits used for each representation and discuss what the bits represent.

There are 2 different methods for representing images: Raster Graphic (Bitmap); Vector Graphics. In Raster Graphic images are represented as a grid of pixels containing information about color and intensity. It is also resolution dependent. In Vector Graphics images are represented as mathematical equations paths that described the shapes, lines and colors of the image. Advantage of vector graphic means that it is resolution independent.

Hi-Color typically refers to color depth of 16 bits per pixel(5 bits for red, 5 bits for blue and 5 bits for green RGB555). Hi-Color is often used in older systems or devices with limited processing power or memory.

True-Color has a color depth of 24 bits(8 bits for red, 8 bits for green and 8 bits for blue RGB888). True-Color provides a much wider range of colors and is commonly used in modern computing systems, including monitors, digital cameras, and image editing software.

b) Outline the differences between keyword encoding and Huffman encoding by providing a definition of each, followed by two simple worked examples (one example for each).