

YASIR FAHEEM

ID # 6991

Digital Image processing

Q: No: 1

a) What will be the Size of a coloured picture having resolution 1600×1200 and colour depth of bits?

Ans

$$1600 \times 1200 = 1920000$$

Color depth = 8-bit (256 colors)

$$\text{Size} = \frac{1920000 \times 8 \text{ bit}}{1000000} = 1.92 \text{ MB}$$

Q No-2

b) If the same image is converted to Grey Scale image, what will be the size if we keep the same color depth.

Ans

b) Three colours -

Grey Scale



Red, Blue, Green

1 21 31

$$\frac{1920000}{3} = 640000 = 6400 \text{ kB} = 0.64 \text{ MB}$$

Q No - 1

(c) True color system has 24 bit color depth. why is it not a good idea to increase color depth beyond that?

Ans

If we increase colour depth so the quality will remain same but the size of image will be increased. If colour depth is 8 bits so size is 1.92 MB. if it is 16 bits so the size is 3.84 MB. In true colour depth of 24 bits the image will be 5.76 MB.

Q No # 2

(a) Find value of P, where
 $P = \text{Average of N.P.}$

Ans

$$98 + 95 + 93 + 86 + 84 + 88 + 89 + 93 = 726$$

$$726 \div 8 = 90.75$$

$$\text{average of N \& P} = 90.75$$

$$P = 90$$

(b)

Find value of Q where

Q = Average of N & Q.

Ans

$$81 + 74 + 80 + 7 + 69 = 316$$

$$316 \div 5 = 63.2$$

$$\text{average of N \& Q} = 63.2$$

$$Q = 63$$

(c)

Do you think that after the insertion of calculated values, the pixel grid is in its original form? Explain your answer.

Ans

No, the pixel grid is not in its original form

Because

the value of pixel can be anything from 0-255 but the calculated value can be closest to original

Q NO # 3

(a)
QR Code.

Ans.

For QR code the resolution that will work best is the Spatial resolution because every QR code has a resolution e.g. QR codes on grocery products are 72×72 or 32×32 which can be easily scanned by a normal scanner.

(b)

Finding the dominant color of an image

Ans.

For finding the dominant color in an image, we use image representations because the histogram of an image shows us the distribution of grey levels in the image. The high contrast image has the most evenly spaced histogram which shows us the dominant color.

(C)

Finding number of faces
in a picture.

Ans

For finding number of faces
in a picture we use
spatial resolution because the
higher the resolution the
picture will be clearer and
we can easily spot the
number of faces in a picture.