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DIGITAL IMAGE PROCESSING

MID TERM PAPER

NAME :-

HAMMAD PIR

ID :-

6961

(a)
Q1.

What will be the size of a coloured picture having resolution 1600×1200 and colour depth of 8 bits?

Ans:

$$1600 \times 1200 = 1920000$$

$$\text{Colour depth} = 8\text{-bit (256 colour)}$$

$$\text{Size} = 1920000 \times 8 \text{ bits}$$

$$= 15360000$$

$$\text{Ans.} = 1.92 \text{ MB.}$$

(b)

If the same image is converted to Gray scale image, what will be the size if we keep the same

(2)

Colour depth?

Ans:

Three colours gray scale
red, blue, green.

$$\frac{1920000}{3} = 640000$$

$$= 6400kb$$

$$= 0.64MB$$

(C) True colour system has 24-bit colour depth. Why is it not a good idea to increase colour depth beyond that?

Ans:

If we increase colour depth so the quality remain same but the size of image will be increased. If colour depth is 8 bit so size is 1.92 MB. In True colour depth of 24 bits the image will be 5.76 MB.

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Q2(a) Find value of P, where P = Average of N₈P?

Ans:

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

$$= 726 \div 8$$

$$= 90.75$$

$$\text{Average of } N_8P = 90.75$$

$$P = 90$$

(b) Find the value of Q where Q = Average of N₈P?

$$81 + 79 + 80 + 7 + 69 = 316$$

$$316 \div 5 = 63.2$$

$$\text{Average of } N_8Q = 63.2$$

$$Q = 63.$$

(c) Do you think that after the insertion of calculated values, the pixel grid is in its original

(4)

form? Explain your answer?

No because the value of pixel P can be anything from 0-255 but the calculated value can be closest to original.

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Q3 (a) QR Code :-

Ans: For QR Code the resolution that will work best is the spatial resolution because QR Codes grocery products are 72×72 or 32×32 which can be easily scanned by a normal scanner.

(b) Finding the dominant colour of an image?

Ans: For finding the dominant colour of an image we use image representation because the histogram of an image shows us the distribution of grey levels in the image has the most evenly histogram which show us the dominant colours.

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c. Finding number of focus
in a picture?

Ans

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