Multimedia Problems and MCQ

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CIS

Multimedia

Problems

* Given a color represented in RGB color space as R = 0.2, G = 0.6, B = 0.3, what is its representation in the CMYK color model?
  + First **convert to CMY** model C = 1- R = 0.8 M =1-G = 0.4 Y = 1- B = 0.7
  + Second The **CMYK conversion** k = min(C,M,Y) =0.4 Ccmyk = C - K = 0.4 , M = 0 , Y = 0.3
* A video file of duration of 10 sec, frame size of 640 x 480 and frame rate 25 fps. Compute the video size?
  + a) using a 4:4:4 sampling
  + b) using a 4:2:2 chroma sampling
  + c) using a 4:2:0 chroma sampling
* A – Video Size = 640 \* 480 \* 25 \* 10 \* **24 = 225000 kB**
* B - VS = 640 \* 480 \* 25 \* 10 \* **16 = 150000 KB**
* C – VS = 640 \* 480 \* 25 \* 10 \* **12 = 112500 KB**

1. Sharpening spatial filters is low pass filter that “passes over” the low frequency components and reduce or eliminates high frequency components

2. Fourier transform of an image will clearly indicate how much bright or dark the image is.

3. The harmonic mean filter works well for pepper noise but fails for salt noise. 4. To remove coding redundancy, the shortest code are assigned to the least frequent (low probability) gray levels 5. In Component video, color ("chrominance") and intensity ("luminance") signals are mixed into a single carrier wave 6. JPEG2000 compression standard is based on discrete cosine transform. 7. Mono sounds require twice the space as compared to stereo recordings 8. Quantization divides the horizontal time axis and Sampling divides the vertical amplitude axis 9. In DFT, if we do not drop any frequency components, the inverse transform will give us the original function with no loss. 10. Gaussian Noise appears as concentrated bursts of energy in the Fourier transform, at locations corresponding to the frequencies of the periodic interference