

Question NO: 2

Q: Distinguish between resolution and contrast resolution?

Ans:-

Spatial resolution:-

(resolution in space) is the ability of an imaging system to resolve and render on the image a small high-contrast object.

→ in medical imaging spatial resolution is described by the quantity "spatial frequency"

contrast resolution:-

Resolution is the ability to distinguish many shades of gray from black to white.

- * All digital imaging systems have better contrast resolution than screen - film imaging.
- * The principal descriptor for contrast resolution is grayscale also called dynamic range.

Question No:- 3

Q 3:- Discuss the characteristics of digital imaging that should result in lower patient radiation doses:-

Ans :-

Characteristics of a digital image :-

A digital image begins as an analog signal. Through computer data processing, the image becomes digitized and is sampled multiple times. The critical characteristics of a digital image are spatial resolution, contrast resolution, noise, and dose efficiency of the receptors.

CR :-

- > CR plates have lower speeds, typically speed 200.
- > Data manipulation tools available for digital image processing.
- > more added filtration and higher kVp may be used to reduce patient dose.

DR :-

- > usually, DR speed is faster.
- > DR speed can be programmed according to be the acceptable noise level.

Question No:- 4

Q:- 4 Discuss the Features of an active matrix Liquid crystal display.

Ans:-

Active matrix Liquid Crystal Display.

→ we all know matter takes the form of gas, liquid, or solid. A liquid crystal is a material state between that of liquid and solid.

→ A liquid crystal has properties of highly ordered molecular structure of a crystal and the property of viscosity of a fluid.

→ Liquid crystal materials are linear organic molecules dipole. consequently, that liquid crystals can be aligned through the action of an external electric field.

Question No:- 5

Q:-5:- identify application of the picture archiving and communication system?

Ans:-

 PACS (Picture archiving and communication system) is a medical imaging technology used primarily in health care organizations to securely store and digitally transmit electronic images and clinically-relevant reports. The use of PACS eliminates the need to manually file and store, retrieve and send sensitive information, films and reports. Instead, medical documentation and images can be securely housed in off-site servers and safely accessed essentially from any where in the world using PACS software, workstation and mobile devices.

Question No:-6

Q No:-6:- Discuss the three type of digital radiographic imaging artifacts and how to avoid them.

Ans:-

= Digital Digital Radiograph image Artifacts:-

Figure 1 shows a lateral chest image with an unusual superimposed pattern on the anatomy. This is an example of a CR images tube side of cassette reversed, where tube side of the cassette is pointed away from the X-ray tube source and toward the patient. Cassette plastic structural patterns are projected into the imaging plates (particularly noticeable in the arms and anterior part of the patient). In this image a reversal of left to right can also unknowingly occur. Use of lead marker is highly recommended.

Question NO:- 7

Q:- Describe the basic for data compression and the difference between lossless and lossy compression.

Ans:-

The main difference between the two compression techniques (lossy compression and lossless compression) is that, the lossy compression technique does not restore the data in its original form, after decompression on the other hand lossless compression restores and rebuilt the data in its original form. ~~After.~~

Q-1.

Q 1: Describe the features of processing and post processing?

Ans: Processing is designed to produce artifact free digital images. In this regard, preprocessing provides electronic calibration to reduce pixel interpolation. Lag correction, are automatically applied with most system. Offset images and gain images are automatic calibration images designed to make the response of the image receptor uniform. Gain images are generated every few months and offset images, are generated many times, each day. Low dose technique such as switching from digital subtraction angiography (DSA) to fluoroscopy, the solution is application of an offset voltage before the next image is required.

Q 9

Q9: Explain how digital radiographic image artifacts occur because of improper collimation partition or alignment.

Ans: Digital Radiography image Artifacts.
- the image patterns from plastic support structures in the ER cassette are super imposed on the anatomy, caused by the placement of the imaging plate and the cassette upside down in the cassette holder.

81. Identify the difference between for processing image and for presentation image.

Image processing is a method to perform some operation on an image in order to get an enhanced image or to extract some useful information from it. It is a type of signal processing in which input is an image and output maybe image or characteristic features associated with that image. Medical imaging is the technique and process of creating visual representations of the best.