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QNO: 01

ANS: Pre-processing:

- pre-processing is designed to produce artifact free digital images.
- * in this regard processing provide electronic collimation to reduce pixel-pixel, row to row and column to column response difference.
- * The process of pixel interpolation and lag correction and noise correction are automatically applied to with systems.
- * offset image and gain image are automatic calibration image designed to make the response of image receptor uniform.
- * gain image are generated in few months and offset image are generated many time in each day.
- * The preprocessing calibration techniques are identified as flat fielding

Post Processing:

- post processing is where digital imaging shine. In contrast to pre processing, which is largely automatic.
- post processing intervention by radiological technologist and the radiologist.
- post processing of digital image required operator manipulation.
- post processing of image is performed to optimise the appearance of the image for the purpose of better detecting pathology.
- Annotation is the process of adding text to image.
- post processing allow visualization of all shades of greys.
- one postprocessing activity is window and level.
- with in the use of window and level tools any region of grayscale can be expanded to white - black scale.
- This is especially helpful when soft tissue image are evaluated.

Q NO: 02

ANS: Spatial Resolution.

- Spatial resolution is the ability of imaging system to allow two adjacent structures to be visualized as being separate. or the distinction of an edge in the image.
- Spatial Resolution losses occur because of blurring caused by geometric factors.
- The more blurring, the lower is the Spatial Resolution.

Contrast

- Contrast is the difference in luminance and/or color that makes an object distinguishable.
- The contrast of an image is affected by the properties of the receptor and use from the image.
- Contrast agents are used in medical imaging to highlight specific parts of the body and make them easier to see.

~~Spatial~~

~~Narrow slit~~

~~Sharp filter~~

~~Contrast.~~

Q NO: 03

ANS: Lower radiographic technique that result in lower patient radiation dose should be possible with CR if it were not for the image noise to low exposure

At this time, it should be emphasized that ~~result in lower patient dose~~ The conventional approach that "kVp control contrast" and "mA control OD" Does not hold for CR because CR image contrast is constantly regardless of radiation dose exposure. Image can be made at high kVp and lower mAs resulting an additional reduction in patient dose.

QNO: 04

ANS: Active matrix Liquid Crystal displays.

1. An AMOLED is a type of flat panel displays the only viable technology for high resolution TV, computer monitors, notebooks, computers and smartphones with LCDs screen due to low weight, very good image quality, white color, great and response time.

QNO:

OS

ANS:

The digital imaging PACS is a combination of software and hardware hybrid system that is used to acquire, store, display and retrieve medical imaging using digital imaging and communication medicine standard.

The image and report are transmit ~~digitally~~ digitally via PACS by integrating the system with radiology information system and hospital information system. The integration of PACS, RIS, HIS would eliminate the need to manually store, retrieve and display film jackets.

QNO: 06

ANS:

Digital Radiograph Artifacts

→ Detector Image lag or ghosting

- latent image from previous exposure present on current exposure

→ Back Scatter

- electronics are visible on the exposed image

- increased radiation exposure required for portable DR examination

→ Stitching artifacts

- occur when two separate DR or CR images are merged into single image

→ over exposure

→ lead pixel artifact

→ signal dropout

QNO: 07

ANS: In Signal processing data compression is the process of encoding information using fewer bits than the original representation. Any particular compression are lossy or lossless.

Lossy Compression

→ A compression that permits reconstruction only an approximation of the original data. Though within improved compression rate.

→ Also known as irreversible compression.

→ Reduce the quality.

→ Data reduction is higher.

→ Resultant file is smaller than the original.

Lossless Compression

→ A class of data compression that allows the original data to be perfectly reconstructed from the compression data.

→ Also known as reversible compression.

→ Does not reduce the quality.

→ Data reduction is lower.

→ Resolution file is not as small.

Q NO: 8

ANS: Digital radiographic images are obtained as raw data sets. Such these image are ready for processing. For processing image are manipulated into "for presentation" image that are radiological. Radiologist can use for ~~the~~ and interpretation by the Radiologist.

QNO: 09

Object collimation and partition
ANS: many error can occur
with improper collimation
because the detection of
collimation line can be missed
or confused with anatomy

This is the poor standard of practice
Alara violation not collimating
can decrease the quality of image.

Alignment:

Alignment of the exposure field on
the IP is important in the
same and for the same
reason as collimation

when the image field is not oriented
~~into~~ with the size and
dimension of the IP and
image artifact can appear.