

**READING HOSPITAL SCHOOL OF HEALTH SCIENCES
MEDICAL IMAGING PROGRAM
MI 133 – Image Analysis Worksheet**

Please answer the following questions using your notes from the Image Analysis Principles lecture. Answers should be typed within this a MS Word document and submitted to the appropriate MI 133 dropbox labeled Image Analysis Principles Worksheet in Edvance **by Friday, October 2, 2020.**

1. Why is it important to the patient for a radiographer to acquire quality images?

So that there is less of a chance for repeats, which will keep the patient's dose within ALARA's standards of care.

2. Describe a possible repercussion for a radiographer if they do not take quality images.

They will have to take another image of the patient which will double their dose, miss vital objects in the patient's body that can harm them more, and potentially have an effect on their own reputation as a technologist, and could very well result in consequences by the leading supervisor, or dismissal from the job position.

3. List the 7 basic elements of a quality radiograph.

Orientation, Anatomy included, Centering, Positioning accuracy, Collimation, the usage of markers correctly, and Contrast or EI effectiveness.

4. Most radiographic images are oriented in ___ anatomic _____ position.

5. ___ Distortion _____ will occur if the anatomy of interest is not parallel with the image

receptor (IR).

6. Accurate ___centering_____ ensures the best visibility of joint spaces.

7. Proper collimation saves the patient from unnecessary exposure, as well as protecting the technologist from ___scatter_____.

8. Good collimation is achievable only if the _____centering_____ is adequate.

9. Which markers must be present when the image is exposed?

A Left or Right marker depending on the image taken, but typically it is the Left marker

10. Which markers may be placed on the image after the image was exposed?

Annotations can be utilized if there are no lead beads in the markers used or if there is no marker.

11. What two colors are considered the extreme opposites in radiographic resolution?

Black and White

12. Describe how technical factors that affect an image's resolution.

Contrast and brightness take an effect on image resolution because it can make it hard to view all the areas of interest if the image is either too dark or too

bright, which also factors in under and over exposure. Noise is another factor, because the fuzziness of the image also won't be helpful for image resolution and locating the key marks in the area of interest.

13. Explain how a patient's diagnosis could be affected if the radiographer forgot to ask them to remove their rings before a hand x-ray procedure?

There could be a pathology missed due to the artifact left on the area of interest that could be covering or hiding a potential problem for the patient.

14. Should every image that is not optimal be repeated?

No, there are images that can be proficient enough to be seen by the radiologist. It isn't worth over exposing the patient just for the perfect image. Especially since every xray you take will be different depending on the patient's situation.

15. If a patient can't quite get into the optimal position for an image, how should the radiographer proceed?

- a. Call the Radiologist and request assistance
- b. Cancel the procedure due to patient condition
- c. Help the patient into the best possible position and take the image