XR3 Fluoroscopy Handout

1. In one sentence, what distinguishes fluoroscopy from other x-ray techniques?
   1. **Fluoroscopy samples images at a faster rate, allowing for many images to be taken throughout an exam and displayed in video format.**
   2. **Or simply, video x-ray!**
2. Images on a fluoroscopy machine can be sampled using two different types of x-ray beam: \_**continuous**\_\_\_\_\_ and \_\_**pulsed**\_\_\_\_\_. \_\_**cont**.\_\_\_\_ sampling gives a sampling rate of \_\_**33ms**\_\_\_\_ while \_\_**pulsed**\_\_ sampling gives a sampling rate of \_\_**3-10ms**\_\_\_\_. Blurring may occur due to movement using **\_continuous\_** sampling, while faster movements may be missed entirely when using **\_pulsed\_** sampling.
3. The image \_\_**quality**\_\_\_ is the same between these two different types of sampling. This is calculated as \_\_**area under curve/total signal per pulse etc. (any equivalent works)**\_\_.
4. Name the two types of receivers used in fluoroscopy systems. Highlight the one used most  
    today.
   1. **Image Intensifier**
   2. **Flat panel**
5. The AERC circuit is a \_\_**feedback**\_\_\_\_ circuit driven by the \_\_\_**sensor**\_\_\_\_\_. This circuit helps to keep \_\_**SNR**\_\_\_ constant by \_**increasing**\_\_\_\_ or \_**decreasing**\_\_\_\_ the strength of the x-ray beam.
   1. Which components of the x-ray system are altered to alter beam strength?
      1. **mA and kV**
   2. This is a trade off between \_\_**dose**\_\_\_ and \_**contrast**\_\_\_\_ altered by the \_**attenuation**\_\_ caused by the patient.
6. What is the name of the flesh analog used to test radiation dosage?
   1. **PMMA**
7. Who is at risk of x-ray radiation during a fluoroscopy procedure?
   1. **Patient**
   2. **Personnel (i.e., surgeon, x-ray techs, anyone else in the room)**
8. Name 2 common use cases of fluoroscopy.
   1. **Surgical guidance**
   2. **Rapid diagnostics**
   3. **Angiography**
   4. **GI diagnostics**

**(pick two)**

1. What is the name of the principle that we always want to keep in mind when using fluoroscopy?
   1. **ALARA!  so very important to monitor dosage!**