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 Semester 4th B.S Radiology
 Paper Radiological Positioning.
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Q=1:- What is dental OPG? Describe the positioning & patient positioning technique in detail?

Ans:- During an OPG the patient remains in a stationary position (seated or standing) while both the x-ray source and film rotate in combination around the patient. The x-ray source rotates from one side of the jaw around the front of the patient, and then to the other side of the jaw.

During OPG x-rays, you will be asked to stand or sit in front of the x-ray machine & rest your chin on a plastic

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rest - you will also need to bite down gently on a mouthpiece, to ensure your head remains still during the procedure.

Part of the machine then rotates around your head as the images are being taken.

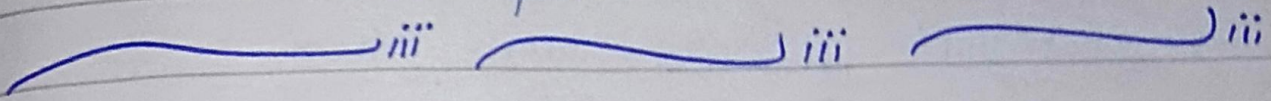
In order to obtain diagnostically useful images patient must be positioned carefully within the image layer or focal trough, which is a three dimensional curved zone - structure found within the image layer will be reasonably well defined.

The patient must be positioned correctly so that the proper structures are aligned with in the image layer.

Example of correct patient positioning with the tongue pressed against the palate, teeth in the groove of the bite-block, and the indicator light for the midsagittal plane

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centered and perpendicular
to the floor.



Q=2:- How will you scan a patient with lower back pain. write a basic view for lumbar x-rays?

Ans:- When focusing on the lower spine, an x-ray can help detect abnormalities, injuries, or disease of the bones in that specific area, according to the Mayo Clinic, a lumbar spine x-ray can show whether you have arthritis or broken bones in your back, but it can't show other problems with your muscles, nerves or disk.

It uses radiation to make detailed pictures of the bones of your spine. A technician uses a machine that sends x-ray beams through your body.

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It records a black and white images on a special film or computer. Bones and other parts of your body that are thick or dense, show up white in the picture.

The lumbar spine AP view images the lumbar spine which consist of five vertebrae. It is utilized in many imaging context including trauma, postoperatively, and for chronic conditions.

All imaging of patients with suspected spinal injury must occur in the supine position with out moving the patient.

In the supine projection hands are placed by the patients side.

Your doctor might also uses other imaging test along with an x-ray to determine the cause of your back pain. These can include.

1:- MRI Scan

2:- Bone Scan.

3:- Ultra Sound.

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Q:3 Patient of old age came in the department with a complaint of knee pain, what view should be done?

Ans: Knee pain is a common complaint that affects people of all ages. Knee pain may be the result of an injury, such as a ruptured ligament or torn cartilage. Medical conditions — including arthritis, gout, and infections — also can cause knee pain.

Can't bear weight on your knee or feel as if your knee is unstable - See an obvious deformity in your leg or knee - Have a fever, in addition to redness, pain and swelling in your knee - Have severe knee pain that is associated with an injury.

Do use "RICE" Rest, ice, Compression, and elevation is a good for knee pain.

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Caused by a minor injury
or an arthritis flare.

Give you knee some
rest, apply ice to reduce
swelling wear a compressive
bandage, and keep your
knee elevated.



Q=4:- A patient fell from the bike
after being hit by a car, has
now complaint of headache,
what are the x-rays prescribed
for the skull.

Ans:- x-rays of the skull may be
done to diagnose fracture of
the bones of the skull. birth
defects, infections, foreign bodies,
pituitary tumors, and certain
metabolic & endocrine disorders
that cause bone defects of
the skull.

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A skull xray is an imaging test doctor use to examine the bones of the skull - including the facial bones, the nose, & the sinuses. See a body map of the skull - It's an easy, quick, and effective method. that has been used for decades to help doctors view the area that houses your most vital organ - your brain.

Headache immediately following a head injury usually clears after minutes or days but sometime headaches may be persist for months or rarely year - The long-term headaches are called post-traumatic or post - concussion headaches.

* Right after a sever TBI, people may have headaches because of the surgery on thire skulls or B/c they have small collection of blood

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or fluid inside the skull.
Headaches can also occur
after mild to moderate
injury or, in the case of
severe TBI, after the initial
healing has taken place.

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Q:- A) How you see the importance of
KVP and MAS settings in
your x-ray machine.

Ans:- The more mass you are
going through the higher
the mA will be kVP,
or kilovoltage peak - is
the different in voltage
b/w the cathode and the
anode in the x-ray tube.
The higher the KVP, the
more "penetrating" will the
x-rays be thicker body
parts require higher KVP. However
higher KVP creates more scatter.

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APR and AEC are not related in their functions. Other than as systems for making exposures. However, these two different systems are commonly combined on radiographic units because of their similar dependence on integrated computer circuitry. APR and AEC often are used in conjunction with one another. A radiographer can use APR to select a projection or position for a specific anatomic part and view the kVp, mA, and exposure time for manual techniques.

→ kVp = Energy of x-rays = higher penetrability, it moves through tissue

→ The Energy determines the Quality of x-ray produced.

1:- Increase in kVp = electron gain high energy.

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2: higher the energy of electrons =
greater quality of x-rays.

3:- greater Quality = greater penetrability.

KVP = Quantity = increased KVP =
more x-rays produced.

→ We must select the optimum technical
Factors.

→ We must get the exposure time as
low as possible so high frequency
machine are important.

→ Contrast controlled by the kVP used.

→ Density controlled by
the mAs used.

————— X ————— X ————— X

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(Part B)

write about the positioning & techniques of the pelvic x-rays.

Ans.- A Pelvis x-ray is a safe and painless test that uses a small amount of radiation to take a picture of the pelvic bone, which surrounds the hip area. During the examination, an x-ray machine sends a beam of radiation through the pelvis and an image is recorded on special film or a computer.

The AP pelvis view is part of a pelvic series examining the iliac crest, sacrum, proximal femur, pubis, ischium, and the great pelvic ring - It is of considerable importance in the management of severely injured patients presenting to emergency department.

For an AP view of the pelvis and hip, the patient is supine with the feet in slight (15"-20") internal rotation, which compensates for the normal anteversion of the femoral neck, elongating its images. Correct collimation and centering is evidenced by demonstration of both ilia equidistant to the edge of the radiograph. Both greater trochanters equidistant to the edge of the radiograph, and the lower vertebral column centered to the middle of the radiograph.

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The
End.