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P# 1

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Q No 1 :=

Characteristic radiation :=

Contributes only a small fraction of the photons in an x-ray beam.

An electron from an outer orbital to the inner deficient orbital of the tungsten.

* They produce by the electrons excited to higher energy state from the lower energy state.

P.T.O

P # 2.

- # The x-rays are produced due to the loss of energy of the electron.
 - # It can be emitted in EM spectrum.
 - # There is no direct collision b/w the electrons.
 - # It increases with increase of atomic number.
 - * Bremsstrahlung radiation :-
It is produced by the deceleration of electrons.
 - # X-ray rays are exhibited by the energy loss of electrons.
 - # They have continuous energy spectrum.
 - # They have direct collision of e^- with nucleus.
 - # It is increased by increased of KVP .
- ||| ★ #

Q no 2
Quantaty ::

The Quantaty is refered to the number of X-ray photons in the beams
i.e. As the number of photons increases, the beams intensity also increases

X-ray Quantaty:

X-ray Quantaty is measure of the number of X-ray photons in the useful beams.

factors effecting X-ray Quantaty:

- i) Tube current (mA)
- ii) exposure time (s)
- iii) Tube of potential (KVP)
- iv) Wave form
- v) Distance (FSD)
- vi) Filtration

P#4

Q no 3:

Subject contrast:-

Depends on differential attenuation of x-ray as it passes through patient.

factors affecting:-

- thickness of part.
- density.
- atomic difference.
- radiation energy.
- Scatter radiation.

a# Density:-

The density d/f represent the information content of image.

b# Thickness:-

It should be no surprise that absorption effects & d/f

(P.T.O)

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P# 5
with in the subject will effects
the level of contrast in
a radiograph.

c# Radiation Quality or KVP :-

The lower KVP will make
the x-ray beams less penetra-
-ting. This will result in
a greater d/f in attenua-
-tion b/w the d/f parts
of subject leading
to higher contrast.

Q no 4

2# Image Contrast :-

Contrast is the d/f
in luminance or color
that makes an object or
its image.

P.T.O

distinguishable

Contrast is determined by the d/f on the color & brightness of the object and other objects within the same field of views and same as for image

3# Diaphragm Aperture:

Diaphragm is a thin opaque structure with an opening (aperture) at its center, it is placed in the light path of lens and the size of the aperture which regulates the amount of lights that pass through the lens.

4# Collimator filtration:

This filtration is generally placed on the mirror

(P.T.O)

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of the collimator and
 this filtration attenuates
 x-rays emitted from
 the tube.

iii * #

Q no 5 i.

Compton scattering.

- They have the following
 three related processes
- i) Thomson Scattering (classical)
 * photon. e^-
 - ii) Compton scattering (QED)
 * Photon. e^-
 - iii) Rayleigh scattering (coherent)
 * Photon. atom

The Thomson and Rayleigh
 scattering are elastic only
 in which the direction of
 photon changed not its
 energy

(P.T.O.)

P# 8 .

Photoelectric effect:->

photon ejects the one orbital electrons.

The entire energy is absorbed by the atom and transfer to atomic orbital.

The kinetic energy of ejected electron is

$$h\nu - E_b$$

Vacancy is created in shell

emission of the characteristic x-rays takes place.

|||*#

The END.

