(P#1)

Name:- Sebghat ullah

ID:- 14636

Subject:- Radiological science & technology

Instructor:- Waqas Ihsan

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Q#01:

* Operating Console:-

Operating console allows radiologic technologist to control the x-ray tube current and voltage so that the useful x-ray beam is of proper quantity and Quality.

P.T.O

Radiation quantity refers to the number of x-rays in an x-ray beams and radiation quality refers to the energy of the x-ray beams

Operating console usually provide for control of line compensation KVp. mA and exposure of time

* High-voltage Generator:- The high voltage generator of an x-ray imaging system is responsible for increasing the output voltage

(P.I.U)

from the autotransformer to the KVp neccary for x-ray production.

Q No 2:-

* External-Component of X-ray tube:- The external component of the x-ray tube having three main parts.

i) Support Structure:- it have the following three systems.

a) Ceiling Support system:- it allows for both longituadnal and transeverse.

(P.T.O)

of the x-ray tube. and consist two perpendicular sets of ceiling mounted (tracks) rails

b) Floor-to-ceiling support system:-
it having single column with rollers at each end, in which one attached with ceiling mounted rail and the other attached to a floor-mounted rail

c) C-Arm support system:-
This system have C-likes shaped. These system are ceiling mounted and provid (P.T.O)

P.T.O

for flexible x-ray tube positioning, it have one end attach with the image receptor.

2) Protective Housing:-

The x-rays that escape through the protective housing are called leakage radiation. it reduce the level of leakage radiation to less than 1 mGy/h at 1m when operated at maximum Condition Protective housings guards against excessive radiation exposure and electric shock (PTO)

* Glass or Metal enclosure:-

The vaccume tube that Contain two electrodes i.e cathode and anode.

This vaccum allows for more efficient x-ray production and a longer tube life

Metal enclosures tubes maintain a constant electric potential between the electrons of the tube current and the enclosure.

Q No3:

* Three function that anode serves in X-ray tube:-

The anode is the possative side of the x-ray tube, it conduct electricity and radiates heats and x-rays from the target and anode serves the following three maint function in x-ray tube.

a)* Electrical Conductor:-

The anode recieves electrons which is emmited by the cathod and conduct them.

(P.T.O)

and conduct them through the tube to the connecting cables and back to the high voltage generator.

b)* Mechanical Support:-

The anode also provide mechanical support for the target.

c)* Thermal dessipator:-

The anode also a good thermal dessipator because when the projectile electron from the cathode interact with anode (P.I.O)

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more than 99% of their kinetic energy is converted into heat and this heat must be dissipated quickly. and thus it maintain thermal dissipation.

THE END.