(1)

Q:- **Answer (1)**

Stochatic effects	Non Stochatic effects Deterministic
Have no threshold levels of radiation dose	Have definite threshold levels of radiation dose.
The Probablity of the effects is proportional to the dose	The Probablity of the effects is proportional to the dose.
A latent Period is seen between the time of exposure and the events to manifest.	A latent Period is seen between the time exposure and the events to manifest.
Severity independant of dose received	Severity may be Proportional to the dose received.
Seen when the cells are modified rather than killed.	Seen when the cells are killed or loose capability to divide.

Answer No: 02

Radiation :→

Radiation is energy in the form of electromagnetic waves or particulate matter, travelling in the air -

Radioactivity :→

⇒ "It is the process by which certain elements emit particular forms of radiation -

Ionizing Radiation :→

⇒ "Higher energy electromagnetic waves (gamma) or heavy particles (beta and alpha).

⇒ "High enough energy to pull electron from ~~out~~ orbit -

Non-Ionizing Radiation :→

⇒ "Lower energy electromagnetic waves-
⇒ "Not enough energy to pull electron from an orbit-"

Harmful Radiation :→

⇒ "The high amount of energy electromagnetic waves that damages the body cells and Lead to sickness, headaches, vomiting and fever or even if in very high amount so it can kill an individual-

Answer:- 3A :-

Principles for radiation protection

1:- justification :- Any decision that alters the radiation exposure situation should do more good than harm.

2:- optimisation :- Does should all be kept as low as reasonably achievable

Qs:- b :-

Protection devices:→

1) Lead Apron
2) Lead Collar
3) Lead Gonad Sheild
4) Lead Gloves

Answer No: 04

Features for Radiation Protection design:→

1. Protective X-Ray tube Housing -
2. Source to image Receptor Distance
3. Collimation
4. Positive Beam limitation -
5. Beam Alignment
6. Filtration -
7. Operator Sheild -
8. Mobile X-ray Imaging System.

① **Protective X-Ray-tube Housing:-**

⇒"Every X-Ray tube must be contained in a protective housing that reduces leakage radiation during use".

② **Source to image-Receptor distance indicator**

⇒"It must be provided - It can be as simple as a tape measure attached to the tube housing -

③ **Collimation:→**

⇒" Cones and diaphragms may replace the collimator for special examination -

④ **Positive Beam limitation:→**⇒"must be used so that with any image receptor size in use and all the standard SID's, the

Collimator shutters automatically provide an x-ray beam equal to the image receptor.

⑤ Beam Alignment :->

=> Each radiographic tube should be provided with a mechanism to ensure proper alignment of the X-Ray beam and the image receptor

⑥ Filtration :->

=> "All general purpose diagnostic x-ray beams must have a total filtration.

⑦ Operator Sheild :->

=> "The radiologic technologist must be in the examination Room during exposure but only when wearing a protective apparel.

⑧ Mobile X-Ray Imaging System :->

=> "A protective lead apron should be assigned to each mobile-x-ray imaging system - the operature must be 2m far away from the x-ray tube during exposure.

Answer:-5 :-

GM:- Counter:-

⇒ It is an instrument used for detecting and measuring ionizing radiation."

Use:->

⇒ "It can be used as a protection device in a way that it is widely used to detect radiations"-

⇒ "When we came to know that this regions is intense in radiations so we can avoid going there-

In this way GM-Counter can be used as protection device-