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Section A

Q1

Ans deterministic effect of radiation

= The deterministic effect of radiation are also called non stochastic effect of radiation

=The deterministic effect of radiation are those effect which is dependent on time of exposure and dose type of radiation

=Deterministic effect of the radiation include the following effect of radiation

- 1) acute radiation sickness
- 2)Chronic radiation sickness

1Acute effect radiation.

Acute effect of the radiation is not dangerous effect the acute effect are those effect are mainly cause when radiation dose are must be large the dose have been delivered in short time

2) Chronic effect radiation

The chronic effect of the radiation occurs after a month or year of taking exposure of higher amount

The chronic effect of radiation are very dangerous effect

2) Stochastic effect of the radiation

=Stochastic effect of radiation is those effect which can occurs when the person received higher dose of radiation

The stochastic effect of radiation have increased probability of occurrence with increased dose

The stochastic effect of radiation are two type are the following

- 1) somatic stochastic effect
- 2) genetic stochastic effect

1) Somatic stochastic effect

The somatic stochastic effects are those effects of radiation limited to the exposed individual and they are distinguished from genetic effects.

The somatic stochastic effects are those that are harmful to the exposed individual during their lifetime.

Genetic stochastic effect

The ionizing radiation damages the genetic material in the reproduction of the cell. Radiation induces material to individual genetic and D.N.A.

Q2

Ans radiation

Radiation is the emission of energy through spaces in the form of waves, called radiation.

Example

The sun emits radiation in the form of light.

Terms of radiation are defined as follows.

1) radioactivity

Radioactivity is the spontaneous emission of

radiation from the nucleus of an unstable atom

Because the nucleus experience the intense conflict between two strongest force in nature

Type

There are meant type of radioactivity depending on particles and energy released during in reaction

Are the. Following type of radioactivity

Are

1)alpha particle

Beta particle

Gamma

2)Non ionizing radiation

=Non ionizing radiation don't penetrate deep into tissue increase the risk of damage of eye and skin

= Non ionizing radiation refer any type of electromagnetic radiation that dose not carry energy per quantum of ionization atom or molecules

To complete remove one electron from one atom or molecules

Non ionizing radiation are the following

Microwave radio laser etc

=The non ionizing radiation dose not contain sufficient energy to produce ion

Ionizing radiation

=Particles or photon with sufficient energy in to produce ion in the medium

Ionizing radiation is radiation capable of imparting its energy to the body and causing chemical change

Ionizing radiation is emitted by radioactive material

Are x Ray

Ionizing radiation

alpha

Beta

Gamma

X ray

Q3

Ans A

Two basic principles of radiation protection

There are many principles principles of radiation protection but the basic principles are following two

1) dose limitation

2)Justification

1Dose limitation of radiation protection

The total dose to any individual from regulated source in planned exposure of the patients should no expect a appropriate limited recommend by the commission

2)Justification of radiation protection

Any decision that alters the radiation exposure situation should be more good than harm

The risk of potential exposure

Ans3B

write the name of the radiation protection device up

The name of the radiation protection device are the following dvice are radiation protection device

.Gas filled detectors

Scintillation detectors

Thermoluminescence dosimetry

Optical stimulated

Luminescen dosimetry

Q4

Ans

GM counter

= The GM counter are also called geigermuller counter or allso called geiger counter

=The GM counter is device that are used for detection and measurements of all type of radiation

= GM counter basically consit of pair of electrodes surrounding by a gas

= GM counter used for radiation protection surveyor to laboratory

The GM counter is instrument used for detecting and measurements ionizing radiation

GM counter are discovered by hand Geiger

Uses of GM counter in radiation protection device

The GM counter are device are use and radiation protection device

Gm counter is device used with for detecting a measuring ionizing radiation

It detect ionizing radiation such as

Alpa particle

Beta

Gamma particles

Gm counter are widely used in application of radiation dosimetry.

Gm region because the counionaly dis charege

Owaing to the larger charge amplification gm survey meter are widely used at very low radiation level they are

particles applicable for radiation dosimetry

In wide and prominent used a hand held radiation survey instrument.

Commonly used quenching gasses include heavy organic vapor and heavy gas

Gm counter suffer from very long dead time

Ionization chamber should there area when radiation rate are high

Q4

Ans feature for radiation protection design

Design for radiation protection feature

The following

1) Protective x ray tube housing

Protective housing to reduce leakage radiation

= Must be less than 100 mr/hr at 5he distance about 1m
fromprotective housing

Control panel

Must show exposure.conditionand when tube is enlarged

Beam on must be clear to techs

Sld indicator

Indicator must be present

Protection feature

Collimator .

Light Field , veritable aperture

X ray beam and light Field must be 2/of SID

PBL positive beam limitation

Auto collimator circa

Beam alignment

Flitrstion

Inherent plus added

Reproducibility

Constant output radiation intensity

Linearity

Constant output for varied mA setting while time is adjusted to keep mAs the same

The End