**IQRA NATIONAL UNIVERSITY**

**DEPARTMENT OF ALLIED HEALTH SCIENCES**

**Final-Term Examination (spring -20) (BS. Radiology)**

**Course Title: Radiation protection Instructor: Atoofah Azmat**

**Time: 360 mins Max Marks: 50**

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**QNO(1):**

**ANS:stochastic Effect:**

**stochastic effect occuer by chance,usually without a threshold level of dose. the probability of stochatic effect is increased with increasing doses ,but the severty of the response is not propostional to the dose genenatic nutation and cancer are the two main stochastic effect .**

**Determinatic Effect :**

**derterminastic effect health effect that increas in severty with increaing dose above a threshold level .usually associated with a**

**relatively high dose deliver over a short period of time . skin erythema (reddening) and cataract formation from radiation are two examples of derminastic effect .**

**QNO(2)**

**ANS: Radioactivity:**

**Radioactivity refer to the partical which are emitted from nuclei as a result of nuclear instability because the nucleious experiences the intence conflict between the two strongest forces in nature .**

**Non- Ionizing Radiation :**

**non ionizing radition a type of low energy radiation .non ionizing radiation follwing includes . visibal, infrarede ,altraviolit ,light ,micro waves, radio waves ,radio frequence.**

**Ionizing Radiation :**

**ionizing radiation is radiation with enought energy so that during interaction with an atom at can remove tightly bound electron from orbit an atom causing the atom beacuse charge or ionized .**

**Harmful Radiotion :**

**Harmful radiation demage the cell that makeup human body. low levels of radiotion are not dangroious .high level of radiation causing demage to your internal organ . the most harmfull radition for the huma body .**

**Gamma rays and x-rays.**

**QNO(3):**

**ANS:the basic principal of radiation protection are descuse with the following below .**

**(1) Time :they have take a possibale short time in radiation**

**(2)Distance :durimg the radiation they keep maintain distance between the sourse of radiation and the exposed persone**

**(3)Shielding :In the radiation which are used the proper shilding material.**

**(B) Radiation protection devices are the following names.**

1. **Lead apron**
2. **Lead collar**
3. **Lead gonad shield**
4. **Lead gloves**
5. **Proper monitoring .**

**QNO(4):**

**ANS: there are many radiation protection feature .**

1. **Protective x ray tube housing :**

**every x ray tube must be contained with in a protective housing that reduce leakage radiation during use .**

**2.Controle panel:**

**the controle panel must endicate the condition of expose in must positvaly imdicate with the x ray tube in energiesd these requirment are usually atisfied with thr use of kvp and ma indicators.**

**3.Sourse to image resepter distance (SID):**

**A sid indicator must be provided this can be a simple is a tape measure aattached to the tube housing are is advanced is leaser.**

**4. Collimation :**

**Light localised variable apreature ractungulare should be provided cones and difrome may replce the collimatores of specially examination .**

**5. Positive bean limation :**

**these positvie bean limating device are no longer requred but countinioue a part of most new radiograohic imaging system the p b l most be accurate to with in two person .**

**6.Bean alighment:**

**it doe no good to align the light field and the x ray bean if th i mage receotor is not also aligned .**

**7. Filtration :**

**there are two filtration inharent and added.**

**QNO(5):**

**ANS: A GM counter (geiger muller counter) is a device used for the detection in measurement of all types of raditin . Alfa, beta, and gama radiation . the electrodes srounded by a gas. the elecrode have a high voltage across them . the gase used usually helium or Argon.**