**TAQ-5**

**1. Distinguish between the effects that radiation can have on an adult and those which can result as a consequence of a foetus being exposed to a significant dose of radiation.**

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Effects of radiation exposure on adults includes, hair loss because the radiation damages the hair roots and renders them unable to grow more hair. Skin reddening (like sunburn) because of high energy transfered to the skin tissue from radiation particles. Breakdown of the intestinal lining due to tissue damage and impairment of functioning of vital organs. It can also cause cataract, sterility and radiation sickness, which involves nausea, vomiting and diarrhea. All of the above mentioned effects of radiation exposure on adults depends on the dose and the duration of exposure.

An embryo is most susceptible to the harmful effects of the radiation in the early fetal period. Exposure to radiation can lead to several effects including carcinogenic, mutagenic or teratogenic effects. Effects of radiation on foetuses are, great tissue damage which leads to miscarriage, DNA damage which results in birth defects and mental retardation. Leukemia is also caused by radiation poisoning. It can also cause mental retardation and growth restriction. The effects of radiation exposure on foetuses depends upon the gestational age and the dose of radiation.

Although the number of case studies is very less, from the survivors of Nagasaki and Hiroshima nuclear bombings, the hereditary effects of radiation were found to be mostly of leukaemia and mental retardness. Using mice as test subjects, it was found that some genetic mutations can take several generations to surface. Hereditary effects includes improper digestive system,liability to a particular disease and affinity towards steatopygia.

Somatic effects include all the effects seen in adults, i.e, tumors of both benign and malignant (cancer) nature, skin burns, cell damage, tissue damage etc.

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