

### **8.3 Ionising Radiation and Non-ionising Radiation**

1. Complete the following statement:

High energy	man-made	background	joule	environment	dose
kilogram	natural	Solar system	nuclear accident	microsievert/hour	galaxy

a) The sources of ionising radiation in the environment can be divided into natural and \_\_\_\_\_ sources.

b) The examples of natural source of ionising radiation in the environment include :

i) Cosmic radiation      ii) \_\_\_\_\_ radiation

c) The examples of man-made source of ionising radiation in the environment include:

i) nuclear test      ii) \_\_\_\_\_

d) Cosmic radiation is \_\_\_\_\_ radiation emitted by sources outside the \_\_\_\_\_ or another \_\_\_\_\_.

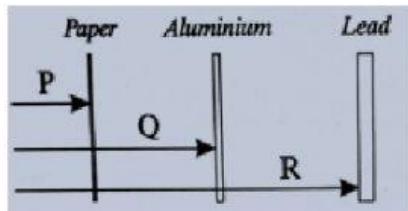
e) Background radiation is the ionising radiation from \_\_\_\_\_ which consists of \_\_\_\_\_ and man-made sources.

f) The quantity used to measure biological effects from ionising radiations to our body is called \_\_\_\_\_.

g) Dose 1 Sv = 1 \_\_\_\_\_ of ionising radiation energy absorbed by 1 \_\_\_\_\_ of living tissues.

h) The S.I. unit used to measure background radiation dose is \_\_\_\_\_.

2. State the types of radioactive radiation, P, Q and R based on its penetrating power.



P : \_\_\_\_\_

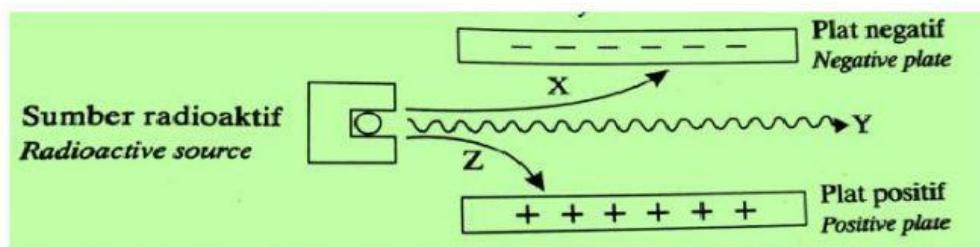
Q : \_\_\_\_\_

R : \_\_\_\_\_

3. Example of ionising radiation : \_\_\_\_\_

4. Example of non-ionising radiation : \_\_\_\_\_

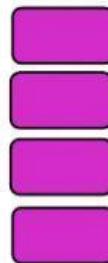
5. Diagram below shows the effect of electrical field on radioactive rays. Fill in the blanks with the correct answer.



- a) X is \_\_\_\_\_ ray that is \_\_\_\_\_ charged and will deflect towards the \_\_\_\_\_ plate.
- b) Y is \_\_\_\_\_ ray that is \_\_\_\_\_, thus it is not deflected by the electrical field.
- c) Z is \_\_\_\_\_ ray that is \_\_\_\_\_ charged and will deflect towards the \_\_\_\_\_ plate.

6. Write 'A' for sources of natural ionising radiation and 'B' for sources of man-made ionising radiation.

- a) The explosion of nuclear power plant .
- b) Radioactive materials that exist in soil and rock.
- c) The use of radioisotopes for medicine.
- d) Nuclear weapons test.



7. Diagram below shows two individuals who have different occupations. State the source of ionising radiation received by both individuals.



radioactive radiation  
Cosmic radiation