**Unit P6 Key Words**

Radioactive materials

|  |  |  |  |
| --- | --- | --- | --- |
| **1** | **Proton**  | The least penetrating type of ionizing radiation produced by the nucleus of an atom. It is made of 2 protons and 2 neutrons and is positively charged  |  |
| **2** | **Neutron**  | The process of splitting a nucleus is called nuclear fission. |  |
| **3** | **Background radiation** | A particle found in the nucleus of atom with no charge. It has a mass of 1 |  |
| **4** | **Radioactive**  | This is Rutherford’s experiment which shows that some alpha particles deflect or rebound off the gold foil. This shows that the nucleus is small compared to the atom and the mass is concentrated in the nucleus. |  |
| **5** | **Nucleus**  | Half-life is the amount of time required for a quantity to fall to half its value as measured at the beginning of the time period. |  |
| **6** | **Alpha particles** | Used to describe a material, atom or element that produces alpha, beta or gamma radiation |  |
| **7** | **Beta particles**  | The treatment of disease, especially cancer, using X-rays or similar forms of radiation. |  |
| **8** | **Gamma radiation** | This type of radiation is the least penetrating. It can be stopped (or absorbed) by a sheet of paper. |  |
| **9** | **Alpha particle scattering**  | A positively charged particle found in the nucleus of an atom. It has a mass of 1 |  |
| **10** | **Half life** | A high energy electron given off by a radioactive atom  |  |
| **11** | **Radiotherapy**  | Radioactive tracers are used to investigate a patient's body without the need for surgery. Gamma emitters and sometimes beta emitters are used. This is because gamma rays and beta particles can pass through skin, whereas alpha particles cannot. |  |
| **12** | **Tracers**  | A chemical reaction or other process in which the products themselves promote or spread the reaction. |  |
| **13** | **Nuclear fission**  | Low level radiation mostly from natural sources, that everyone is exposed to everywhere |  |
| **14** | **Chain reaction** | The most penetrating type of ionizing radiation. It is an EM wave |  |
| **15** | **Nuclear fusion**  | The center of an atom containing protons and neutrons  |  |
| **16** | **Alpha radiation** | Two or more atomic nuclei collide at a very high speed and join to form a new type of atomic nucleus. |  |

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| **2** | **Neutron**  | The process of splitting a nucleus is called nuclear fission. | 13 |
| **3** | **Background radiation** | A particle found in the nucleus of atom with no charge. It has a mass of 1 | 2 |
| **4** | **Radioactive**  | This is Rutherford’s experiment which shows that some alpha particles deflect or rebound off the gold foil. This shows that the nucleus is small compared to the atom and the mass is concentrated in the nucleus. | 9 |
| **5** | **Nucleus**  | Half-life is the amount of time required for a quantity to fall to half its value as measured at the beginning of the time period. | 10 |
| **6** | **Alpha particles** | Used to describe a material, atom or element that produces alpha, beta or gamma radiation | 4 |
| **7** | **Beta particles**  | The treatment of disease, especially cancer, using X-rays or similar forms of radiation. | 11 |
| **8** | **Gamma radiation** | This type of radiation is the least penetrating. It can be stopped (or absorbed) by a sheet of paper. | 16 |
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| **12** | **Tracers**  | A chemical reaction or other process in which the products themselves promote or spread the reaction. | 14 |
| **13** | **Nuclear fission**  | Low level radiation mostly from natural sources, that everyone is exposed to everywhere | 3 |
| **14** | **Chain reaction** | The most penetrating type of ionizing radiation. It is an EM wave | 8 |
| **15** | **Nuclear fusion**  | The center of an atom containing protons and neutrons  | 5 |
| **16** | **Alpha radiation** | Two or more atomic nuclei collide at a very high speed and join to form a new type of atomic nucleus. | 15 |