**6.2 HONORS CLASS WORKSHEET**

**1. Ionizing and penetrating power of radiation**

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| (a) | Explain briefly why alpha particles are more ionizing than beta particles and why beta particles are more ionizing than gamma rays |   |
| (b) | Explain briefly why alpha particles are less penetrating than beta particles and why beta particles are less penetrating than gamma rays |   |

Complete the following table by stating what effect the following barriers will have on each type of radiation; answer either “no effect”, “will reduce intensity” or “will completely stop”

|  |  |  |  |
| --- | --- | --- | --- |
| barrier | α-particles | β-particles | γ-rays |
| 10 cm of air |  |  |  |
| a thin sheet of paper |  |  |  |
| a thin sheet of aluminium |  |  |  |
| a thick layer of lead |  |  |  |

**2. Dangers of radiation**

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| --- | --- | --- |
| (a) | State the two ways in which radiation can be harmful |   |
| (b) | Explain why gamma radiation is generally considered more dangerous than alpha or beta radiation |   |
| (c) | In what circumstances would alpha or beta radiation be considered very dangerous? |  |