NAME\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Year 11 Physics Self-Assessment Topic 6: Nuclear Models and Radioactivity

| Learning Intentions | Test Questions | Chapter Questions | Proficiency | Comments/questions |
| --- | --- | --- | --- | --- |
| Structure of atoms and nuclei, representation, forces in a nucleus, stable and unstable isotopes |  | 120 |  |  |
| Alpha particle, reason for alpha decay, equations for alpha decay |  | 121 |  |  |
| Beta minus and beta plus emissions, reasons for beta minus and beta plus decay, equations for beta minus and beta plus decay, conservation of charge |  | 122 |  |  |
| Gamma rays, reason for gamma decay, equations for gamma decay |  | 123 |  |  |
| Predicting decay type from nucleus or graph |  | 124, 126 |  |  |
| Ionising radiation, effects on living matter, minimizing exposure, comparing ionizing ability and penetration through matter |  | 128-131 |  |  |
| Exponential decay, half-life, activity, nuclear waste storage |  | 132-134 |  |  |
| Induced nuclear fission, energy released by fission, operation of a nuclear reactor in terms of chain reactions, speed of neutrons to produce fission |  | 136(b)  137(a)-(d) |  |  |
| Enrichment, components of a water-moderated fission power reactor |  | 138 |  |  |
| Power generation by nuclear fission, risks associated |  | 136(c)  137(e)-(f) |  |  |
| Nuclear fusion, requirements for fusion, energy released by fusion |  | 135 |  |  |