

Spec Ref	Topic	TAP Ref	
3.5.3 A	proton number Z and nucleon number A	512	
	nuclides and isotopes, nuclear stability and instability	524	
	α , β^- , β^+ and γ radiations	510	
	changes in Z and A in α , β^- , and β^+ decay	512-2	
	inverse-square law for γ absorption	510	
	$\frac{1}{2}$ value thickness; factors affecting μ	511-4	
	the Becquerel	509	
	modelling with constant decay probability	515	
	$N = N_0 e^{-\lambda t}$, $dN/dt = -\lambda N$	515	
	half-life and decay constant	515	
	physical, biological and effective half-lives in medicine		
B	compare capacitor discharge and radioactive decay		
	$Q = CV$	126	
	charge and discharge $Q = Q_0 e^{-t/CR}$	129	
C	the graph of neutron number N against proton number Z	512, 524	
	binding energy, binding energy per nucleon, mass defect, amu	525	
	$\Delta E = \Delta m c^2$	525	
D	fission processes, induced fission by neutron stimulation	527	
	nuclear reactor physics, moderation, control mechanisms	528	
	pwr	528-2	question on pwr only
	absorption, absorption cross-section		
E	fusion , energy available for fusion reactions	528-3	brief
	closest distance of approach of two nuclei	522	principle
	temperature necessary for two nuclei to fuse		
	hydrogen and carbon cycles in the production of solar energy		
	plasma maintaining fusion in a terrestrial fusion reactor		
	Joint European Torus		
	benefits and problems surrounding terrestrial fusion		
F	risk in everyday life	509	For radioactivity
	quantitative treatment of risk		
	risk in nuclear engineering		
	risk in medical physics- balancing risks in treatment of illness		
	worker protection, film badge/radiation monitors		