

Neutron Stars (10 points)

Part A. Mass and stability of nuclei (2.5 points)

A.1 (0.9pt)

$$A =$$

A.2 (0.9pt)

$$Z^* =$$

A.3 (0.7pt)

$$C_{\text{fission}} =$$

Part B. Neutron star as a gigantic nucleus (1.5 points)

B.1 (1.5pt)

$$a_{\text{grav}} =$$

$$A_c =$$

Part C. Neutron star in a binary system (6.0 points)

C.1 (1.0pt)

$$\Delta\tau_{\text{II}} =$$

C.2 (1.8pt)

$$\Delta t =$$

C.3 (1.8pt)

$$\Delta t_{\text{max}} - \Delta t_{\text{min}} =$$

C.4 (0.8pt)

$$M_{\text{WD}}/M_{\odot} =$$

C.5 (0.4pt)

$$p =$$

C.6 (0.2pt)

The most appropriate profile is