

4M16 Nuclear Power Engineering 2014

Answers

Q1 (b)(ii) $R = 0.206 \text{ m}$, $V = 0.0366 \text{ m}^3$

Q2 (b) -0.0245 (exact), -0.0263 (in the limit)

(c) 0.0626

(d) No

Q3 (c) $A_{\max} = \frac{T}{T + \Delta}$, $B_{\max} \approx 2\alpha T$

(d) 4-batch operation is optimal

Q4 (c) 925 tonnes, 524.72 tonnes SWU

(d) 118.8 tonnes, 7.41 tonnes SWU

(e) No, reprocessing costs \$48,545,100 more