

**Structured Hardware Design (4 mark question) 2004 Paper 2 Question 1(e)**

If ROM is expressed in min-terms, each of 8 outputs would have 128 terms on average. Each term would require an 8 input gate made of 7 two-input gates. Finally, a 128 input OR gate would take 127 gates and 8 inverters are needed for the address atomsics. Total

$$[ 8 \times 128 \times 7 + 8 \times 127 + 8 ]$$