

4B19 Renewable Electrical Power 2009 Short Answers

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2. (b) (ii) At 300 rpm net output is 120 kW, at 750 rpm net output is 300 kW.
(iii) Line side converter rating is 100 kVA , machine side converter rating is 111 kVA.
(v) At 750 rpm: +25 Hz , 698 V. At 300 rpm: -20 Hz, 558 V. At 500 rpm: 0 Hz, 0 V.
3. (c) (i) 20 poles; 1273 kNm; 2.62 kA; 0.8 lagging.
(ii) $\delta=14.8^\circ$; 16.7 kV line – line.
4. (b) (i) 40 (ii) At 6 ms^{-1} $V_3' = 1.65 \text{ kV line}$; At 12 ms^{-1} $V_3' = -3.3 \text{ kV line}$
(iii) $P = 1.1 \text{ MW}$; $Q = -61.3 \text{ kVAr}$

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May 2009