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Daffodil International University
Dept. of Electrical and Electronic Engineering
Summer 2026 | 0713-213: Energy Conversion I

CO-02

Quiz - 3 | 12 August 2026 | Full Marks: **15**

1. A 3-phase, 440-V, star-connected induction motor has a star-connected rotor with a stator to rotor turn ratio of 6.8. The rotor resistance and standstill reactance per phase are 0.08 Ω and 0.25 Ω respectively. What should be the value of external resistance per phase to be inserted in the rotor circuit to obtain maximum torque at starting and what will be rotor starting current with this resistance? **[8]**
2. A 4-pole, 50-Hz, 7.46 kW motor has, at rated voltage and frequency, a starting torque of 170 per cent and a maximum torque of 200 per cent of full-load torque. Determine (i) full-load speed (ii) speed at maximum torque. **[7]**