Electronic Instrumentation
Problem sheet: Stepper

2011/2012 module 2

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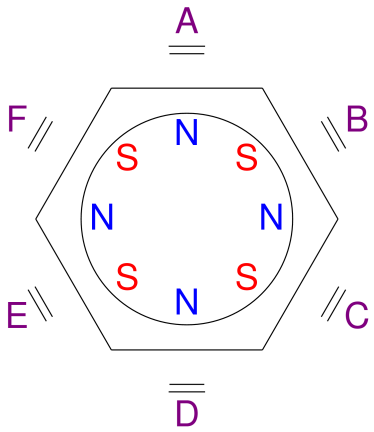
30 anos 1979 | 2009

MIEET 3º ano

A stepper motor is made of an axis with a permanent magnet with 8 poles (4xS, 4xN) while the static part has 6 coils (A..F) to induce magnetic fields electrically, see figure below.



a) What is the resolution of the motor (unit: °), or alternatively, how many steps for a full 360° turn?

b) What is the pulse sequence for a full turn?

c) What is the sensitivity of the motor when connected as a frequency-to-rpm actuator

$$S = \mathrm{d}\,\mathrm{rpm}(f) / \mathrm{d}f$$