UNIVERSITA' DEGLI STUDI ROMA TRE
CdS in ***Biomedical Engineering***

class of
Signal Processing for Biomedical Engineering

Written test of September 5th 2016. .
note: This test is valid only for registered students. Test delivery implies that previous results are canceled.

Family and first name (printed): _____ _____

signature: _____

Roma3 registration number: _____ or ID card number: _____

born on (day/month/year): _____ / _____ / _____

In the academic year 2015/2016 registered for the ___ year of the master course in

_____

e-mail (write in clear letters): _____ @ _____

Exercises:

1) Let x(n)=s(nT) be the sequence obtained from sampling with the period T of the analog signal s(t). Perform an **effective** digital signal processor with input sequence x(n) to obtain at its output the sequence: y(n) = s(1.2 n T – 0.5 T) .

2) Perform a digital linear FIR filter made of 5 coefficients to amplify (by the factor 2) the frequency components of input sequence below $|\omega|=\pi/2$, while the higher frequencies ($|\omega|>\pi/2$) of input signal are reduced by the factor 2.