Traccia 2

1. Il candidato illustri possibili usi della realtà virtuale nella sperimentazione clinica
2. Il candidato illustri possibili metodi di analisi a livello di rete tra segnali elettroencefalografici da diversi canali
3. Il candidato illustri i principali organi della Scuola Superiore Sant'Anna
4. Lettura di un capoverso 2 di testo tecnico (Tombini et al. Neurorehabilitation and Neural Repair 2012)

EEG Recordings and Data Analysis

EEG signals were recorded from the scalp: (1) before surgery (PRE) during voluntary command to perform left hand grip and (2) after LIFEs implant (POST) and at the end of intensive training for motor commands control simultaneously to electroneurographic (ENG) acquisition for the same movement. In the POST session EEG recordings were also performed during right (intact)-hand movement. We used 32 electrodes (scalp sites defined according to the

International 10-20 EEG electrode system) mounted on an elastic cap and binaural reference (time constant = 0.1 s; sampling rate = 1024 Hz; presampling analogical filter, 0.48-256 Hz; BrainAmp System, Brain Products GmbH, Gilching, Germany). A semiautomatic procedure based on independent component analysis[6] was applied to identify and eliminate artefacts (ie, eye movements, cardiac activity, and scalp muscle contraction). The spatial resolution of the artefact-free EEG data was enhanced by surface Laplacian estimation (regularized 3-D spline function).[7]

5. Il candidato illustri quali sono le finalità del programma Excel