一、肌肉功能表現在物理治療中占有極重要的角色。回答下列有關於肌力評估、
   訓練、及相關生理反應之題組。

   A. 人體肌肉力量調控兩種最主要的神經控制機制為何？簡述之。(10%)

   B. 舉例說明：如何應用本體感覺神經肌肉誘發 (proprioceptive
      neuromuscular facilitation, PNF)之技術，增加肌肉力量。(10%)

   C. 使用徒手肌力測試(manual muscle testing, MMT)方式，評量肌腱反射
      (tendon reflex)為+++肌肉其肌力表現。此舉是否合適？簡要說明理由。
      (10%)

   D. 試以速度-力矩關係(velocity-torque relationship)曲線，說明重量訓練前
      後，肌肉的功能表現。(10%)

   E. 物理治療師可選擇電刺激(electrical stimulation, ES)或漸進阻力運動
      (progressive resistance exercise, PRE)來維持肌力，比較此兩種肌力訓練
      方式的差異？(10%)

二、 The mechanics of shoulder abduction involves all the joints of the shoulder girdle.
   Please discuss the roles of each joint and related muscles groups during full range (0 - 180
   degrees) of shoulder abduction. (25 points)

三、 Two muscle groups in the lower extremities are placed in high mechanical demands
   during normal walking.

   What are these two groups of muscles? (4 points)

   Discuss the roles of these two muscle groups in gait? (11 points)

   Please discuss what would happen in gait kinematics or patterns if there were weakness or
      paralysis involving any of these two muscle groups? (10 points)