系所組別： 心理學系認知科學

考試科目： 認知科學

考試日期：0219，節次：2

※ 考生請注意：本試題 □可 ☑不可 使用計算機

1. Name any two Psychologists or Neuroscientists (and/or teams) who are/were also Nobel Laureates. Could you name the year they are awarded, on what kind of prize (E.g., Chemistry, Physics, etc), and what kind of seminal work that deserve to be awarded with such prestige? And, moreover, are there any follow-up works that could extend, complement, or even partly improve their contributions? (25%)

2. Name one cognitive scientist whose book you read that changes your mind on the specific (or general) topic of cognitive science. Please give the title of the book, the author(s), the important contents covered, and most importantly, how this book changed your (or layperson's) mindset on that specific subject matter? To illustrate that, please also give some descriptions of how this book differed from the previous work/concept before that book. (25%)

3. (1) Briefly describe what the following cognitive neuroscience methods are and how they work: fMRI, ERP, and TMS. (12%)
   (2) Explain the advantages and limitations of each method. (6%)
   (3) Give an example of a published study using either of these methods and how the technique was used to help us better understand human cognitive functions. (7%)

4. Several researchers (e.g., Larry Squire and Endel Tulving) have proposed that memories are not all the same, and there may be different memory systems, each involving unique cognitive and neural mechanisms. Please give 3 examples of the possible memory systems (e.g., short-term memory, episodic memory, etc.), describe what they are, and provide evidence from the cognitive/behavioral, neuropsychological/patient, and neuroimaging literature that supports the existence (and/or dissociation) of these systems. Also please provide evidence against these distinctions wherever possible. (25%)