※ 考生請注意：本試題不可使用計算機。　請於答案卷(卡)作答，於本試題紙上作答者，不予計分。

一、選擇題 (共 51 分，一題 3 分。請務必依題號順序於答案卷上做答)

1. 書名與作者的配對，以下何者正確
   (1) 《The Interpretation of Dreams》 -- Sigmund Freud
   (2) 《The Expression of the Emotion and Animals》 -- Charles Darwin
   (3) 《Elements of Psychophysics》 -- Ernst Heinrich Weber
   (4) 《The Principles of Psychology》 -- Gustav Theodor Fechner
   (A) 1234　　　(B) 124　　　(C) 12　　　　　(D) 13

2. 請依序將古典制約（classical conditioning）、工具制約（operant conditioning）、觀察學習(observational learning) 、頓悟學習(insight) 這四個學習概念與其提出者做配對。
   (1) Bandura　(2) Freud　(3) Skinner　(4) Pavlov　(5) Köhler.
   (A) 2134　　　(B) 3415　　　(C) 4315　　　　(D) 4312

3. 廣智上個月因為嚴重的過敏導致一個禮拜每天都要去醫院報到，而每次他到醫院時都會聽到某首歌曲，在病癒之後，只要他聽到這首歌曲，肚子就會開始痛起來，請問這是因為何種現象造成的結果？
   (A) 工具制約（operant conditioning）　　　(B) 替代制約（vicarious conditioning）
   (C) 古典制約（classical conditioning）　　　(D) 逃離制約（escape conditioning）

4. 被稱為腦的中繼站，除了嗅覺之外，其他各種感覺訊息都經過該處的腦部組織是？
   (A)邊緣系統(limbic system)　(B)前腦(forebrain)　(C)視丘(thalamus)　(D)下視丘(hypothalamus)

5. The three major parts of a neuron are
   (A) dendrites, cell body, and axon.　　(B) axon, nerve fiber, and receptor.
   (C) receptor, transmitter, and median.　(D)receptor, dendrites, and conductor.

6. Which of the following is phenomenological support for the "opponent-process theory" of color vision?
   (1)color afterimages　(2) visualizing color combinations (3) simultaneous color contrast
   (4) color matching　(5) visual pigment absorption rates
   (A) 123　　(B) 135　　(C) 145　　　(D) 234

7. Object discrimination problem: _____ :: Landmark discrimination problem :_____.
   (A) temporal lobes; parietal lobes　(B) parietal lobes; temporal lobes
   (C) parietal lobes; occipital lobes　(D) LGN; thalamus

8. According to Treisman, the _____ stage is the "glue" that combines all the incoming information about an object.

    (A) preattentive   (B) focused attention

    (C) center   (D) peripheral resource

9. Posner's precueing studies demonstrated that attention

    (A) increases the color perception of objects.   (B) decreases the color perception of objects.

    (C)eliminates change blindness.   (D) increases the efficiency of information processing.

10. 一位音樂家正在聽一首古典音樂，他能去分辨出他所聽到不同樂器的聲音是由於聲音的哪個層面？

    (A) 音色   (B) 振幅   (C) 響度   (D) 音調

11. "dog"這個字有___個音素(phoneme)，___個詞素(morpheme)。

    (A) 3, 1 個   (B) 3,2 個   (C) 2,1 個   (D) 2,2 個

12. Damage to Broca's area in the frontal lobe results in difficulty

    (A) in speaking.   (B) in understanding speech.

    (C) in lip reading.   (D) in determining phonetic boundaries.

13. 美伶經歷一場意外，醒來後不知道自己是誰，也不知家在何處，請問她有可能罹患何種失憶症？

    (A) 順向失憶症（anterograde amnesia）   (B) 逆向失憶症（retrograde amnesia）

    (C) 工作記憶失憶症（working memory amnesia）   (D) 以上皆非

14. 下列何者屬於非陳述性記憶？

    (A)"昨天晚餐吃了麼？"   (B)"如何騎腳踏車？"

    (C)"什麼是工具制約？"   (D)"台灣的心理學研究所有幾家？"

15. Piaget 著名的「三山實驗」，目的是要了解孩子的_____。小新今年就讀幼稚園中班，當他擔任此一研究的受試者時，他會認為坐在自己對面的娃娃看到的景象_____。

    (A) 自我中心；和實驗者一樣。   (B) 自我中心；和自己一樣。

    (C) 物體永久性；和自己一樣。   (D) 物體永久性；和自己不一樣。

16. 若是拿算則(algorithm)和捷思法(heuristic)來作比較，捷思法的主要優點是什麼？

    (A)方便   (B)心向   (C)準確度   (D)嚴謹

17. The more bowed out the ROC (receiver operating characteristic) curve is, the greater the

    (A) liberal bias.   (B) conservative bias.   (C) d'.   (D) expectation.

二、名詞解釋(16分，一題4分)

(a) working memory

(b) receptive field

(c) Stroop effect

(d) REM sleep

三、問答題　33 分

1. 認知神經科學(cognitive neuroscience)旨在利用神經科學的方法與理論探討認知功能的大腦基礎，強調行為、大腦、及計算分析取向的整合。以下摘錄了三則與人臉美感 / 吸引力相關的論文摘要，請從中選擇一篇摘要，回答以下問題:

摘要一

　　　　Facial attractiveness is an important source of social affective information. Here, we studied the time course and task dependence of evaluating attractive faces from a viewer's perspective. Event-related brain potentials (ERPs) were recorded while participants classified color portraits of unfamiliar persons according to gender and facial attractiveness. During attractiveness classification, enhanced ERP amplitudes for attractive and nonattractive faces relative to faces of intermediate attractiveness were found for an early component around 150 msec and for the late positive complex (LPC). Whereas LPC enhancement conforms to previous studies employing various types of affective stimuli, the finding of an early effect extends earlier research on rapid emotion processing to the dimension of facial attractiveness. Dipole source localization of this early ERP effect revealed a scalp distribution suggesting activation of posterior extrastriate areas. Importantly, attractiveness-related modulations of brain responses were only marginal during the gender decision task, arguing against the automaticity of attractiveness appraisal. (選自 Schacht, A., Werheid, K., Sommer, W. (2008). The appraisal of facial beauty is rapid but not mandatory. Cogn Affect Behav Neurosci., 8(2):132-42.)

摘要二

　　　　Can attention alter the impression of a face? Previous studies showed that attention modulates the appearance of lower-level visual features. For instance, attention can make a simple stimulus appear to have higher contrast than it actually does. We tested whether attention can also alter the perception of a higher-order property-namely, facial attractiveness. We asked participants to judge the relative attractiveness of two faces after summoning their attention to one of the faces using a briefly presented visual cue. Across trials, participants judged the attended face to be more attractive than the same face when it was unattended. This effect was not due to decision or response biases, but rather was due to changes in perceptual processing of the faces. These results show that attention alters perceived facial attractiveness, and broadly demonstrate that attention can influence higher-level perception and may affect people's initial impressions of one another. (選自 Störmer, V.S., Alvarez, G.A, (2016). Attention Alters Perceived Attractiveness. Psychol Sci.,

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27(4):563-71.)

摘要三

　　　　Attractiveness is a facial attribute that shapes human affiliative behaviours. In a previous study we reported a linear response to facial attractiveness in orbitofrontal cortex (OFC), a region involved in reward processing. There are strong theoretical grounds for the hypothesis that coding stimulus reward value also involves the amygdala. The aim of the present investigation is to address whether the amygdala is also sensitive to reward value in faces, indexed as facial attractiveness. We hypothesized that contrary to the linear effects reported previously in OFC, the amygdala would show a non-linear effect of attractiveness by responding to both high and low attractive faces relative to middle attractive faces. Such a non-linear response would explain previous failures to report an amygdala response to attractiveness. Human subjects underwent fMRI while they were presented with faces that varied in facial attractiveness where the task was either to rate faces for facial attractiveness or for age. Consistent with our hypothesis, right amygdala showed a predicted non-linear response profile with greater responses to highly attractive and unattractive faces compared to middle-ranked faces, independent of task. Distinct patterns of activity were seen across different regions of OFC, with some sectors showing linear effects of attractiveness, others exhibiting a non-linear response profile and still others demonstrating activation only during age judgments. Significant effects were also seen in medial prefrontal and paracingulate cortices, posterior OFC, insula, and superior temporal sulcus during explicit attractiveness judgments. The non-linear response profile of the amygdala is consistent with a role in sensing the value of social stimuli, a function that may also involve specific sectors of the OFC. (選自 Winston, J.S., O'Doherty, J., Kilner, J.M., Perrett, D.I., Dolan, R.J. (2007). Brain systems for assessing facial attractiveness. Neuropsychologia. 45(1):195-206.).

(1) 請選擇一篇摘要，描述該研究想要回答的議題與結論。做答時請包括研究目的、實驗操弄、結果與推論(12分，請勿逐字翻譯)。

(2) 請以人臉美感或人臉吸引力為主軸，設計一研究探討任一認知功能 (如:注意力、記憶、知覺、語言、執行功能、語言等) 如何影響我們對於人臉美感的判斷，或是人臉美感如何影響到我們的認知功能或是大腦運作。做答時請包括研究目的、實驗操弄、結果與預測。 (12%，注意:本題答案無關乎您對於人臉吸引力的背景文獻知識瞭解的豐富度，主要是在測驗您對實驗設計的基本理解以及對認知功能的認識)

2. 請針對你印象深刻的心理學相關的科普讀物或雜誌專文，用英文撰寫摘要與感想。(注意:僅書名以及作者可用中文。若中英參雜，則分數為原始分數的50%。中文比例超過20％則零分計算) (9%)