

※ 注意：請於答案卷上依序作答，並應註明作答之部份及其題號。

1. 試述何謂 bicarbonate reabsorption (3分)?其發生的器官及其在體液平衡上的重要性?(3分)
2. 請由荷爾蒙平衡的觀點解釋為何單純只用禁食無法達到減肥的效果?(5分)
3. 試從發生原因、臨床症狀與治療(校正)方式來說明代謝性酸中毒與呼吸性酸中毒?(5分)
4. 影響血紅素(hemoglobin)攜帶氧氣(O_2)之親合性的主要因子為何?(4分)
5. 試述單胃動物進行全胃切除後會出現哪些生理變化?(5分)
6. 請解釋為何健康個體不會發生肺泡塌陷的情形。(5分)
7. 內分泌與荷爾蒙透過 neuronendocrine-reproductive system axis, 作用在雄性或雌性生殖器官, 進以維持或調控正常生殖生理功能:
 - (1) 請敘述雄性 neuronendocrine-reproductive system axis (請從腦部哪一個器官分泌何種荷爾蒙, 作用於下游何種生殖器官及其後續所對於 spermatogenesis 的影響依序說明)(7.5分)
 - (2) 請敘述雌性 neuronendocrine-reproductive system axis (請從腦部哪一個器官分泌何種荷爾蒙, 作用於下游何種生殖器官及其後續所對於 oogenesis 的影響依序說明)(7.5分)
8. What would be the lesion of visual field if there is a damage in the midline of the optic chiasm? Please explain the reason. (5分)
9. Please describe the detail process of the synaptic transmission (from presynaptic to postsynaptic events). (5分)
10. Please describe the pathway for proprioception and the relayed nuclei (brain regions) in this pathway. (5分)
11. Please compare the difference of EEG characteristics between rapid eye movement sleep (REM sleep) and non-rapid eye movement sleep (NREM sleep). (5分)
12. What is the conditioned behavior? Please give an example (identify the conditioned stimulation and unconditioned stimulation). (5分)
13. 說明(1)各類血管, 及(2)血管內皮(endothelium)之生理功能。(8分)
14. 說明骨骼肌之收縮機制(從 action potential 與 neuromuscular junction 作用開始)。(8分)
15. 說明與腎上腺腺體有關之荷爾蒙製造細胞、荷爾蒙名稱及其生理功能。(6分)
16. 說明腎臟 counter current systems 之結構及功能。(8分)