

一、 是非題 (共 15 分)，請在答案卡上作答，

是 (O) 請填 A，非 (X) 請填 B

請注意：每題答對得 1 分；每題答錯倒扣 1 分 (即該題得 -1 分)，直到本大題 15 分扣完為止；若該題不作答，則不給分也不倒扣分數 (即該題得 0 分)。

1. () Compared to **Acetaminophen**, **Indomethacin** has less chance to cause liver toxicity.
2. () Compared to **Ibuprofen**, **Aspirin** has less chance to cause Reye's syndrome.
3. () Compared to **Allopurinol**, **Febuxostat** has more chance to cause liver toxicity.
4. () Compared to **Diazepam**, **Midazolam** has longer half-life in the blood.
5. () Compared to **Phenobarbital**, **Zolpidem** has less chance to cause nephrotoxicity.
6. () Compared to **Rifampin**, **Ethambutol** has more chance to cause liver toxicity.
7. () Compared to **Isoniazid**, **Pyrazinamide** has more chance to cause hyperuricemia.
8. () Compared to **Esomeprazole**, **Cimetidine** has more chance to cause gynecomastia.
9. () In contrast to **Lansoprazole**, **Misoprostol** does not require acid for its activation.
10. () In contrast to **Metoclopramide**, **Domperidone** does not penetrate through the blood-brain barrier.
11. () Unlike **Loperamide**, **Mosapride** increased intestinal motility.
12. () Unlike **Alosetron**, **Erythromycin** reduced intestinal motility.
13. () Compared to **Venlafaxine**, **Alprazolam** takes longer time for the onset of anxiety-relieving activity.
14. () **Sofosbuvir** is more effective than **Entecavir** to suppress the replication of hepatitis C virus (HCV).
15. () **Prednisolone** is more effective than **Mesalamine** to suppress severe inflammation in Crohn's disease.

二、 複選題(共 15 分)，請在答案卡上作答

16. () Which are the action mechanisms of entresto used for heart failure treatment? (2 分)
 - (A) Irbesartan inhibits AT1 receptor
 - (B) LBQ6587 inhibits neprilysin
 - (C) Valsartan inhibits AT1 receptor
 - (D) Sacubitril inhibit neprilysin
17. () Which are the correct matches for the anticoagulant and its antidote? (2 分)
 - (A) Protamine sulfate is the antidote for heparin
 - (B) Agatroban is the antidote for warfarin
 - (C) Andexxa is the antidote for apixaban
 - (D) Idarucizumab is the antidote for dabigatran

見背面

18. () Which antihypertensive drug can reduce preload? (2 分)
- (A) Eplerenone
 - (B) Capotril
 - (C) Prazosin
 - (D) Amlodipine
19. () Which drug and its action mechanism can be used for supraventricular tachycardia treatment? (2 分)
- (A) Pindolol, β blocker
 - (B) Quinidine, block sodium channel & potassium channel
 - (C) Verapamil, calcium channel blocker
 - (D) Adenosine, A₁ receptor blocker
20. () Which anticoagulant and its mechanism can be used for the prevention of stroke and systemic embolism in patients with nonvalvular atrial fibrillation? (2 分)
- (A) Clopidogrel, P₂Y₁₂ receptor inhibitor
 - (B) Dabigatran, thrombin inhibitor
 - (C) Rivaroxaban, Xa inhibitor
 - (D) Dipyridamole, PDE inhibitor
21. () Which drug can reduce cardiac oxygen consumption through decreasing ventricular ejection time to improve angina symptoms? (單選, 1 分)
- (A) Hydralazine
 - (B) Bisoprolol
 - (C) Nitroglycerin
 - (D) Nicorandil
22. () Which are the hemodynamic benefits of angiotensin-converting enzyme inhibitor (ACEI) for long term use in post myocardial infarction patients? (2 分)
- (A) reduce ventricular mass
 - (B) reduce afterload
 - (C) reduce cardiac remodeling
 - (D) reduce water retention

23. () Which anti-congestive medications can reduce cardiac work? (2 分)

- (A) Metoprolol, β_1 -blocker
- (B) Isosorbide dinitrate, NO donor
- (C) Ivabradine, I_f inhibitor
- (D) Digoxin, Na^+/K^+ pump inhibitor

三、 單選題(一題 3 分，共 15 分)，請在答案卷(非答案卡)上作答 注意：請於試卷內之「選擇題作答區」依序作答。

1. () Which of the following descriptions about ion channels is correct?

- (A) Ion channels allows ions to go in and out.
- (B) Ions pass through ion channels against electrochemical gradient by using ATP.
- (C) Ion channel can show selectivity and allows only one or a few types of ions to pass the channel.
- (D) The permeability of ion channels can be modulated by ligands or temperature.

2. () Which of the following descriptions about benzodiazepine is incorrect?

- (A) It is a kind of sleep medicine.
- (B) It is a GABA receptor agonist and binds to the GABA binding site.
- (C) It increases the open probability of GABA receptor.
- (D) The effect of benzodiazepine is related to the modulation of intracellular chloride concentration.

3. () Which of the following descriptions about anti-depressant is incorrect?

- (A) Selective serotonin reuptake inhibitor (SSRI) suppressed the recycle of serotonin uptake back to the pre-synaptic axonal terminal.
- (B) The anti-depressive effect of SSRI is very slow and takes weeks to onset.
- (C) Ketamine can have rapid anti-depressive effect within hours to days.
- (D) The anti-depressive effect of ketamine is related to the neurogenesis (growth of new neurons) in the hippocampus.

4. () Which of the following descriptions about reproductive drugs is incorrect?

- (A) Estradiol is an agonist of estrogen receptor.
- (B) Progestin is an agonist of prostaglandin receptor.
- (C) A long-acting Gonadotropin-Releasing Hormone (GnRH) analog can suppress premature sexual maturation by suppressing sex hormone production.
- (D) Calcium channel blockers can help uterine relaxation.

5. () Which of the following descriptions about thyroid related drugs is incorrect?
- (A) Thyroxine (T₄) is a drug-of-choice of hypothyroidism.
- (B) The concentration of thyroid hormone has a strong daily fluctuation, so the replacement drug of thyroid hormone should be short-acting.
- (C) Radioactive iodine (¹³¹I) can destroy thyroid gland because iodine accumulated in the thyroid glands.
- (D) During thyroid storm, giving iodide solution can suppress the release of thyroid hormone from thyroid gland to the bloodstream.

四、 配合題 (單選題，每題一分，共 15 分)，請在答案卷 (非答案卡)上作答 請於試卷內之「非選擇題作答區」作答

- | | |
|-----------------------|---------------|
| () 1. Desflurane | (A) 嘔吐 |
| () 2. Procainamide | (B) 關節炎 |
| () 3. Octreotide | (C) 精神分裂症 |
| () 4. Buspirone | (D) 糖尿病 |
| () 5. Amlodipine | (E) 失眠 |
| () 6. Metoclopramide | (F) 焦慮症 |
| () 7. Anakinra | (G) 高血壓 |
| () 8. Mefloquine | (H) 尿崩症 |
| () 9. Clozapine | (I) 肢端肥大症 |
| () 10. Busulfan | (J) 肌萎縮性側索硬化症 |
| () 11. Dapagliflozin | (K) 胃潰瘍 |
| () 12. Misoprostol | (L) 瘧疾 |
| () 13. Zolpidem | (M) 心律不整 |
| () 14. Vasopressin | (N) 白血病 |
| () 15. Riluzole | (O) 麻醉 |

五、 問答題 (共 15 分)，請在答案卷 (非答案卡)上作答 注意：請於試卷內之「非選擇題作答區」標明題號依序作答。

請以藥理學的角度，回答下列問題：

1. 媒體報導民眾搶購普拿疼，老師說缺的是普拿疼，acetaminophen並不缺，是甚麼意思？acetaminophen是甚麼藥？和阿斯匹靈一樣嗎？(3分)
2. 報載有人可能服用罐頭食物而產生肉毒桿菌中毒，「如果用在整形美容用的肉毒桿菌需要注意藥品來源若來源不明，純度有問題，可能有致死之虞」，你認為這段話對或錯，為什麼？另外，為什麼肉毒桿菌可以用於整形美容？(3分)
3. 報載金正男是被用神經毒氣VX毒殺，試以藥理作用闡述為何VX毒性這麼強可以在口鼻接觸後幾分鐘內斃命，如果來得及可以有解藥嗎？(3分)

4. 報載活潑少女整型手術後，竟在手術期間，發高燒命危於手術間，這是怎麼回事？可否避免？(3分)
5. 東方人發生酗酒的比率較西方人少，對嗎？為什麼？還有，誤服工業酒精導致失明，是因為假酒成分產生的甲醛所致嗎？

(3分)

六、 問答題 (共 25 分)，請在答案卷 (非答案卡)上作答 注意：請於試卷內之「非選擇題作答區」標明題號依序作答。

1. 單株抗體藥物 Keytruda® (Pembrolizumab) 是近年來癌症治療用藥的新選項，請問什麼情形下可以使用 Keytruda®? (4分) 它與目前盛行之癌症標靶治療所使用的單株抗體藥物在作用機轉上有何不同? [請以同樣是用於癌症標靶治療的單株抗體藥：Cetuximab (Erbix®) 為例，做比較說明] (6分)
2. 普拿疼主要成分為 Acetaminophen，是市面上最普遍使用的解熱鎮痛劑，但是每年經常有許多因使用不當而中毒或用於自殺的案例發生，請問為何會造成毒性? (4分)；普拿疼中毒的解毒藥物與機轉為何? (3分)
3. Warfarin 常被用來預防血栓發生，請問其機制為何? (3分)；然而，Warfarin 與降膽固醇用藥併用時要非常小心! 以免產生不良反應，例如，不建議使用 Sinti (Simvastatin)，但是，可以改用 Mevalotin® (Pravastatin) 以取代 Sinti，請問其藥物作用機轉為何，為何可以做如此取代? (5分)

試題隨卷繳回