

※ 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、配合題：(請由右方藥理機轉選項選出一個最適合的答案，每一個藥理機轉答案只能選一次；一個藥物題目只有一個藥理機轉答案。[藥理機轉的選項可能比題目多])

A. 抗癌藥 (15 分，每題 1 分)

題號	藥品	藥理機轉
1	Chlorambucil	(A) monoclonal antibody inhibit PD-1 receptor
2	Methotrexate	(B) multitargeted tyrosine kinase inhibitor
3	Cytarabine	(C) monoclonal antibody inhibit PD-L1
4	Capecitabine	(D) Topoisomerase I inhibitor
5	Mercaptopurine	(E) Topoisomerase II inhibitor
6	Romidepsin	(F) inhibits dihydrofolate reductase
7	Thalidomide	(G) Purine antimetabolite
8	Bleomycin	(H) DNA alkylating agent
9	Vinorelbine	(I) DNA-intercalating agent
10	Epirubicin	(J) mimic cytosine, which damages DNA in the S phase
11	Topotecan	(K) a thymidylate synthase inhibitor
12	Erlotinib	(L) inhibit the assembly of microtubules and polymerization
13	Pembrolizumab	(M) histone deacetylase inhibitor
14	Lenvatinib	(N) bind Fe^{2+} and produce ROS resulting in DNA cleavage
15	Etoposide	(O) EGFR tyrosine kinase inhibitor
		(P) immunomodulator and anti-angiogenesis

B. 抗生素、抗黴菌藥、抗病毒藥品、抗寄生蟲藥品 (15 分，每題 1 分)

題號	藥品	藥理機轉
1	Ethambutol	(A) nucleoside reverse transcriptase inhibitor
2	Oseltamivir	(B) CCR5 inhibitor
3	Micafungin	(C) neuraminidase inhibitor
4	Sofosbuvir	(D) inhibit arabinosyl transferase and disrupt arabinogalactan synthesis
5	Fluconazole	(E) nonnucleoside reverse transcriptase inhibitor
6	Ledipasvir	(F) HCV HCV NS5B RNA polymerase inhibitor
7	Tenofovir	(G) inhibit β -1,3-glucan synthase (H) HCV NS5A phosphoprotein inhibitor
8	Metronidazole	(I) inhibit DNA gyrase and topoisomerase IV
9	Nevirapine	(J) reductive metabolite interfere with DNA and RNA function
		(K) inhibit enolpyruvial transferase

10	Fosfomycin	(L) bind to 50S ribosomal particle and inhibit protein synthesis
11	Maraviroc	(M) binds to phosphate groups in bacterial cytoplasmic membranes and
12	Clindamycin	disrupts their integrity
13	Terbinafine	(N) bind to 30S ribosomal particle and inhibit protein synthesis
14	Polymyxin B	(O) squalene epoxidase inhibitor
15	moxifloxacin	(P) 14 α -demethylase inhibitor

C. 心血管藥品 (20 分，每題 1 分)

題號	藥品	藥理機轉
1	Apixaban	(A) directly Inhibit Xa
2	Dabigatran	(B) inhibit thrombin
3	Milrinone	(C) P2Y12 inhibitor
4	Mexiletine	(D) binds to antithrombin that inactivates clotting factor Xa
5	Procainamide	(E) sodium channel blocker, slows phase 0 depolarization
6	Ticagrelor	(F) phosphodiesterase inhibitor
7	Doxazosin	(G) sodium channel blocker, shorten phase 3 depolarization
8	Minoxidil	(H) calcium channel blocker
9	Enoxaparin	(I) Angiotensin II receptor blocker
10	Ambrisentan	(J) angiotensin-converting enzyme inhibitor
11	Valsartan	(K) α 1 receptor blocker
12	Ezetimibe	(L) renin inhibitor
13	Nicardipine	(M) potassium channel opener
14	hydrochlorothiazide	(N) endothelin receptor antagonist
15	Eplerenone	(O) direct vasodilator
16	Aliskiren	(P) bile acid sequestrant
17	bumetanide	(Q) HMG-Co A reductase inhibitor
18	Simvastatin	(R) cholesterol absorption inhibitor
19	Atenolol	(S) stimulate the activity of lipoprotein lipase
20	Triamterene	(T) mineralocorticoid receptor antagonist
		(U) blockade of sodium channel at luminal membrane of distal tubule and collecting tube
		(V) inhibit of Na ⁺ /Cl ⁻ symporter
		(X) inhibit of Na ⁺ /K ⁺ /2Cl ⁻ transport system
		(Y) carbonic anhydrase inhibitor
		(Z) β receptor blocker

二、請說明何謂藥物基因體學(Pharmacogenomics)，並有何特點? (8 分)

請舉例說明個人的基因型變異如何影響藥物的治療成效或藥物不良反應，並且如何依此給予適當的用藥建議。
(10 分)

三、請說明下列藥物之主要作用機轉、與主要臨床用途。(32 分，每題 4 分)

1. Agomelatine
2. Raloxifene
3. Amantadine
4. Aripiprazole
5. Zopiclone
6. Saxagliptin
7. Finasteride
8. Levetiracetam