

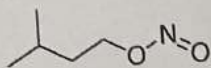
Medicinal Chemistry 1030042
Midterm Exam

Dr. An-Rong Lee
Mar. 15, 2024

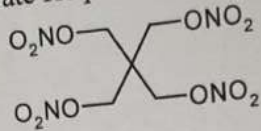
Class:

Name: _____

- Class: _____
Name: _____
1. Give reasons why amyl nitrite is suitable for emergency use in the case of angina pectoris while pentaerythritol tetranitrate for preventive purpose. (10%)
- $\text{O}_2\text{NO}-\text{CH}_2-\text{CH}_2-\text{CH}_2-\text{CH}_2-\text{ONO}_2$




Amyl nitrite

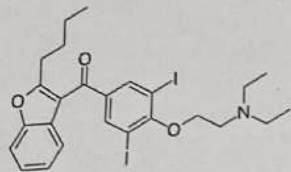


Pentaerythritol tetranitrate

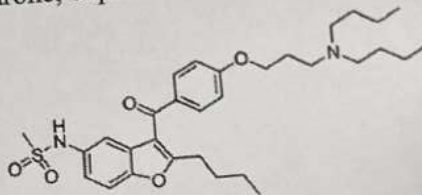
2. Briefly describe Digoxin Immune Fab as an antidote for digoxin overdose (10%)

3. (a) Amiodarone is one of the most effective antiarrhythmics with a very broad spectrum; however, it is a last choice in clinical uses. Why? (10%)

- (b) From the structure features of dronedarone, explain how it can improve those drawbacks of amiodarone? (10%)
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- Cc1cc(C)c2c(c1)oc3cc(C)c(C)cc3O2



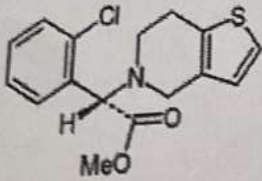
Amiodarone



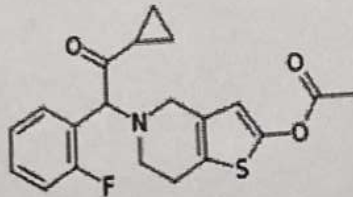
Dronedarone

4. Inclisiran is newly approved for the treatment of atherosclerotic cardiovascular disease and heterozygous familial hypercholesterolemia. Briefly describe its mechanism of action (for a more readily comprehensible answer, you may also draw an illustrative figure). (10%)

5. Clopidogrel is used as a substitute for aspirin. Now from the structure features of prasugrel, give explanations why it is a better drug than clopidogrel in terms of efficacy of inhibiting platelet aggregation. (10%)



Clopidogrel



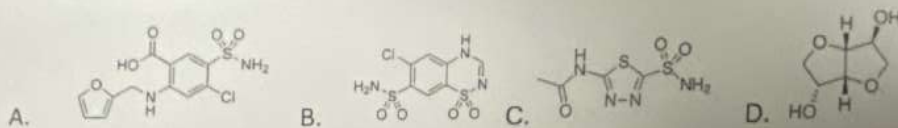
Prasugrel

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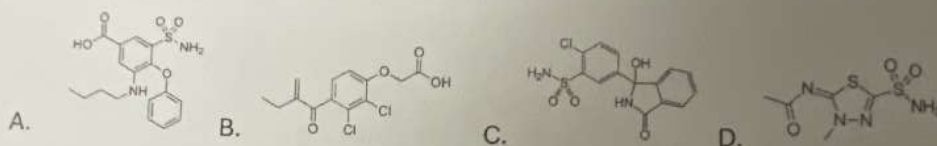
姓名: 李俊豪

一、選擇題 (20%)

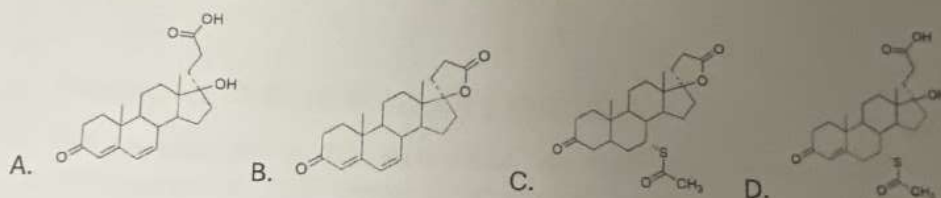
1. 下列利尿劑中，何者最適用於腎功能不佳之水腫患者？



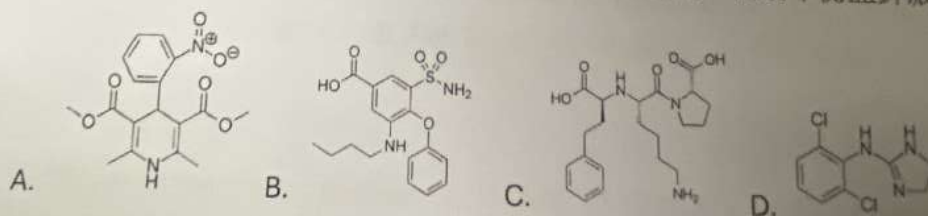
2. 下列利尿劑中，何者常用於青光眼治療？



3. 下列何者為 spironolactone 的主要活性代謝產物？

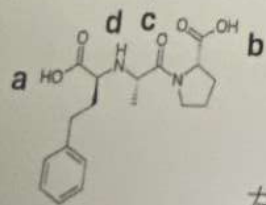


4. 下列降血壓藥，何者最適合與 thiazide 利尿劑併用，協助平衡血鉀濃度？



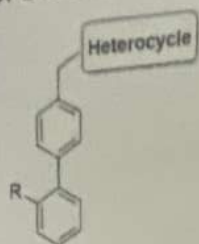
5. 下列 ACE 抑制劑中，何者不屬於前驅藥？

A. Benazepril B. Enalapril C. Lisinopril D. Ramipril

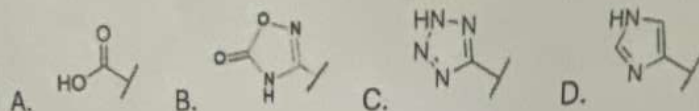


6. 左式結構為一類降血壓藥物，其整合於作用標的活性中心金屬離子的基團為？ A. 酸基 a B. 酸基 b C. 酮基 c D. 胺基 d

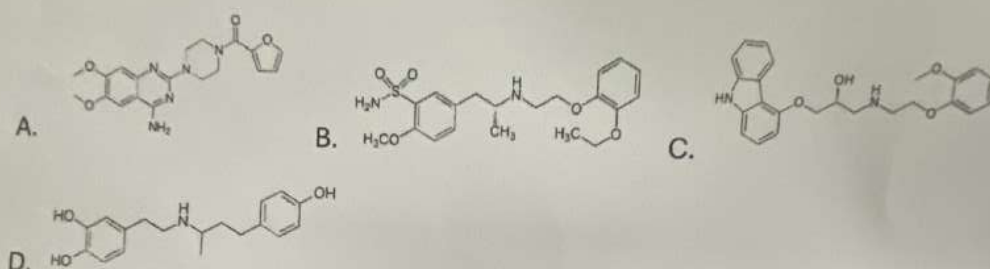
7. Angiotensin II receptor blockers (ARBs) 的簡式 (如下圖), 何者並非



ARBs 中 R 的結構?



8. 下列何者是最適用於治療良性前列腺肥大?



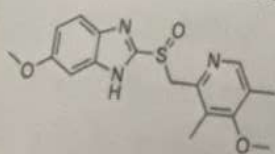
9. α -Methyldopa 可經由何種反應而產生活性代謝物?

A. 先經 Decarboxylation 再經 Methylation B. 先經 Hydroxylation 再經 Decarboxylation C. 先經 Decarboxylation 再經 Hydroxylation D. 先經 Hydroxylation 再經 Methylation

10. Sodium nitroprusside ($\text{Na}_2\text{Fe}(\text{CN})_5\text{NO} \cdot 2\text{H}_2\text{O}$) 結構中的 Fe 與 NO 基團的價數分別為? A. +II 與 +I B. +III 與 -I C. +II 與 0 D. +III 與 0

二、問答題 (20%)

1. 請以反應方程式敘述 omeprazole (結構如下) 制酸之作用機制 (8%)。



2. 請敘述 4 種主要利尿劑及其作用機制, 並各舉一代表藥物 (12%)。