



Name: _____

Personal ID. No: _____

School of Health sciences

WRITTEN EXAMINATION

Course: Patophysiology and pharmacology

Examination: Written exam 1

Course code: BM544G

Credits for written examination: 4.5

Date: 2023-11-10

Examination time: 8:15-12:30

Examination responsible: Anna Benrick

Teachers concerned: Cathal O'Hare and Katarina Skogfält

Aid at the exam/appendices: No aids allowed

Other: Write your answers directly in the exam. Use the back of the papers if you need more space.

Instructions

- ☐ Take a new sheet of paper for each teacher.
- ☐ Take a new sheet of paper when starting a new question.
- ☐ Write only on one side of the paper.
- ☒ Write your name and personal ID No. on all pages you hand in.
- ☒ Use page numbering.
- ☒ Don't use a red pen.
- ☒ Mark answered questions with a cross on the cover sheet.

Grade points: E \geq 60%, D \geq 68%, C \geq 76%, B \geq 84%, A \geq 92%

Examination results should be made public within 18 working days

Good luck!

Total number of pages



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1. Define myocardial infarction by describing its primary cause, symptoms and potential complications. (3 p)

2. Identify and describe three distinct causes contributing to the occurrence of ischemic stroke (excluding stroke resulting from hemorrhage (bleeding)). (3p)



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6. How is the pathophysiology characterized regarding the bronchiole constriction in asthma, leading to increased airway congestion? (3p)
7. Name four factors to assess the severity of an asthma attack. (2p)
8. Explain the key distinction in the pattern of respiratory difficulties between COPD and asthma. (1p)



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9. Describe the pathophysiology of chronic obstructive pulmonary disease and which immune defense cells are activated. (3.5p)

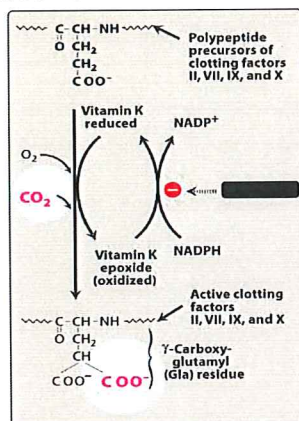
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Pharmacology

10. Describe the mechanism of action by which aspirin inhibits platelet aggregation. 3p

11. The mechanism of action of which drug is shown in the diagram below? Put a cross in the table below beside the correct answer. 0.5p



Drug	Indicate answer below
Heparins	
Low molecular weight heparins	
Warfarin	
P2Y ₁₂ inhibitors	



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12. What properties of heparins and low-molecular-weight-heparins mean they can be used in pregnancy? 1p

13.

a) What are 'non-selective' β -blockers, and why are they contraindicated in patients with asthma? 2p

b) What property enables certain β -blockers to penetrate the CNS? 1p

c) Why may abrupt withdrawal of β -blockers induce rebound hypertension? 2p



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14.

a) Explain bradykinin's role in the mechanism of action and side effects of ACE inhibitors. 3p

b) Why do angiotensin II receptor antagonists not usually produce similar bradykinin related side effects to ACE inhibitors despite both drugs inhibiting the renin–angiotensin–aldosterone system? 1p

15. Which of the following is the site of action of thiazide diuretics? 0.5p

Site of action	Indicate answer below
Proximal convoluted tubule	
Descending loop of henle	
Ascending loop of henle	
Distal convoluted tubule	
Collecting tubule and duct	



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16.

a) State one therapeutic use for HMG-CoA reductase inhibitors (statins). 1p

b) Describe the mechanism of action of HMG-CoA reductase inhibitors (statins). 3p

c) State two adverse effects of HMG-CoA reductase inhibitors (statins). 1p

17. State whether the following statements are true or false by putting a cross in the appropriate box.

1p

	True	False
Adverse effects of β_2 -adrenergic agonists include tachycardia and skeletal muscle tremors.		
β_2 Adrenoceptors (β_2 ARs) located on airway smooth muscles are G protein-coupled receptors subtype Gs.		
Use of β_2 -adrenergic agonist inhalers can cause oropharyngeal candidiasis.		
β_2 -adrenergic agonists inhibit the release of arachidonic acid through inhibition of phospholipase A2.		



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18. State two typical adverse effects of anticholinergic drugs. 2p

19. What category of receptor do corticosteroid drugs bind to? 1p