

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: 2024-06-04

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 | <input type="checkbox"/>            | Take a new sheet of paper for each teacher.                   |
|              | <input type="checkbox"/>            | Take a new sheet of paper when starting a new question.       |
|              | <input type="checkbox"/>            | Write only on one side of the paper.                          |
|              | <input checked="" type="checkbox"/> | Write your name and personal ID No. on all pages you hand in. |
|              | <input checked="" type="checkbox"/> | Use page numbering.   |
|              | <input checked="" type="checkbox"/> | Don't use a red pen.  |
|              | <input checked="" type="checkbox"/> | 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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***Patophysiology***

1. Describe the pathophysiological causes of airway obstructions and what happens in the bronchi.  
(3p)

2. Describe the pathophysiology of **allergic activation**. (3p)



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3. Describe four symptoms that can be seen in chronic obstructive pulmonary disease (COPD). (2p)

4. Mention four lifestyle changes that can contribute to lowering blood pressure and reducing hypertension. (2p)

5. Mention four biomarkers that can be used to predict hyperlipidemia. (2p)



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6. Stroke is a collective term for two things occurring within the brain. Which two? (1p)

7. Stroke symptoms depend upon the affected region of the brain. (3p)

The left side of the brain results in symptoms such as:

The right side of the brain results in symptoms such as:

8. FAST is usually considered when stroke symptoms are present. What does FAST stand for? (2p)



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9. Mention six risk factors that might contribute to the later development of myocardial infarction.  
(3p)

10. When performing studies on patients with myocardial infarction, an Echocardiography, can be used for investigation. State two things that the echocardiography shows? (1p)



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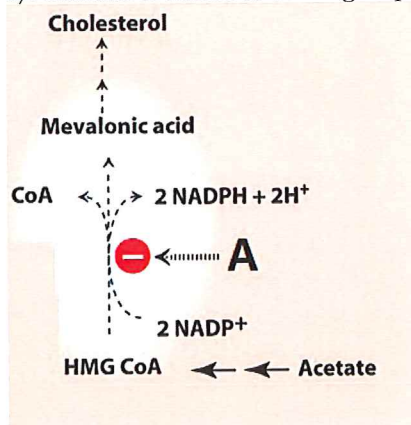
11. Describe the mechanism of action of warfarin (coumarins). 3p

13. Frequent monitoring of warfarin (INR) is required due to its narrow therapeutic window. Explain what is meant by 'narrow therapeutic window'. 1p

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14. What property of aspirin leads to the suppression of platelet aggregation for the life of the platelet? 1p
15. How do bile acid sequestrants interfere with the absorption of many drugs? 1p
16. Why do bile acid sequestrants have low bioavailability, and why is this an advantage? 2p
17. The site of action of which group of drugs is shown at point A on the diagram below? 1p





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18. Describe the mechanism of action of ACE inhibitors. 3p

19. What is the site of action of thiazide diuretics? 1p

20. Why are nonselective  $\beta$ -blockers contraindicated in Asthma? 1P



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21. Explain how genetic polymorphism of CYP2C19 can affect the clinical response of patients taking the P2Y<sub>12</sub> antagonist clopidogrel. 2p
22. How can long-term treatment with beta-2-agonists lead to decreased bronchodilator response? 1p
23. Why do anticholinergics (antimuscarinics) have little or no action at skeletal neuromuscular junctions (NMJs) or autonomic ganglia? 1p
24. Which of the following is not a common anticholinergic side effect? 0,5 p

Blurred vision	
Confusion	
Diarrhea	
Dry mouth	
Urinary retention	

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25. Corticosteroids inhibit the release of arachidonic acid through inhibition of which enzyme? 1p

26. Indicate whether the following statements are true or false by putting a cross in the appropriate box. 1p

	True	False
Adverse effects of $\beta_2$ -adrenergic agonists include tachycardia and skeletal muscle tremors.		
$\beta_2$ Adrenoceptors ( $\beta_2$ ARs) located on airway smooth muscles are G protein-coupled receptors subtype Gs.		
Short acting $\beta_2$ -adrenergic agonists are used as needed for quick relief of symptoms during an asthma flare or exacerbation		
Beta-2-agonists are commonly used as monotherapy for patients with persistent asthma		

27. Which of the following IS a potentially serious side effect of oral corticosteroids? Put a cross in the box beside the correct answer. 0,5 p

Osteoporosis	
Rhabdomyolysis	
Increased growth in children	
Hyperkalemia	
Hypoglycemia	