

Name: _____

Personal ID. No: _____

School of Health sciences

Course: Patophysiology and pharmacology

Examination: Written exam 2

Course code: BM544G

Credits for written examination: 3.5

Date: 2024-01-10

Examination time: 14:15-18:30

Available teacher: Cathal O'Hare

Available on phone number: 0760570313
between 14:30-16:30

Visiting the examination ☐ Yes, at
☒ No

Aids and other information for invigilators

Calculator ☐ Provided by the University
☐ Student's own calculator
☒ Not allowed

If you copy the exam papers yourself, provide the number of copies

Instructions to examinations responsible

All examination documents are to be handed in at Reprocentralen.

- **For copying of examination papers** the originals must be handed in no later than 6 workdays before the examination. The number of copies is filled in by Reprocentralen in the field below.
- **Copied examination papers** must be handed in no later than 3 workdays before the examination. Please notify the examination administration in due time when the papers will be handed in. Examination papers are to be handed over directly to the staff at Reprocentralen (not through mail). If you copy the exam papers yourself, provide the number of copies in the field above.

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Number of copies 8

Number of sign-ups _____

Name: _____

Personal ID. No: _____

School of Health sciences

WRITTEN EXAMINATION

Course: Patophysiology and pharmacology

Examination: Written exam 2

Course code: BM544G

Credits for written examination: 3.5

Date: 2024-01-10

Examination time: 14:15-18:30

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



Personal ID. No: _____

1. Identify a fundamental difference in the etiology of type 1 and type 2 diabetes. How do these differences contribute to the onset of each type of diabetes? (2p)
2. What is C-peptide an indirect measure of? (0.5p)
3. Describe the potential diagnostic value of measuring C-peptide levels in differentiating between type 1 and type 2 diabetes. How can C-peptide assessments contribute to a more accurate diagnosis? (1.5p)



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4. What HbA1c level is considered indicative of diabetes? Discuss the role of HbA1c in the monitoring of type 2 diabetes. (1.5p)
5. Why is increased glucose concentration giving symptoms as increased thirst in type 1 diabetes. Describe the pathophysiology for this. (2p)
6. Name two lifestyle factors that significantly contribute to the development of type 2 diabetes. (1p)



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7. Explain the role of insulin resistance in the pathophysiology of type 2 diabetes. (1.5p)
8. What distinguishes secondary hyperthyroidism from primary hyperthyroidism? (2p)
9. Identify at least two potential causes of secondary hyperthyroidism, specifically related to disorders affecting the pituitary gland or hypothalamus. (1p)
10. Identify two common causes or risk factors associated with the development of hypothyroidism. (1p)



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11. Describe how the thyroid hormones are deviant and what effect this has on TSH in hypothyroidism. (1p)
12. Describe two classic symptoms of hypothyroidism and the underlying physiological basis for each symptom. (3p)



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13. State a therapeutic use of thioamides. 1p

14. Describe the mechanism of action of glucagon-like peptide receptor (GLP-1) agonists. 3p

15. State one reason why most glucagon-like peptide receptor agonists (GLP-1) agonists are administered subcutaneously? 1p

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16. Describe the mechanism of action of metformin. 3p

17. Name two common adverse effects of sodium–glucose cotransporter 2 (SGLT2) inhibitors. 1p

18. What is the site of action of sodium–glucose cotransporter 2 (SGLT2) inhibitors? 1p

19. Why is the use of α -glucosidase inhibitors limited in clinical practice? 1p

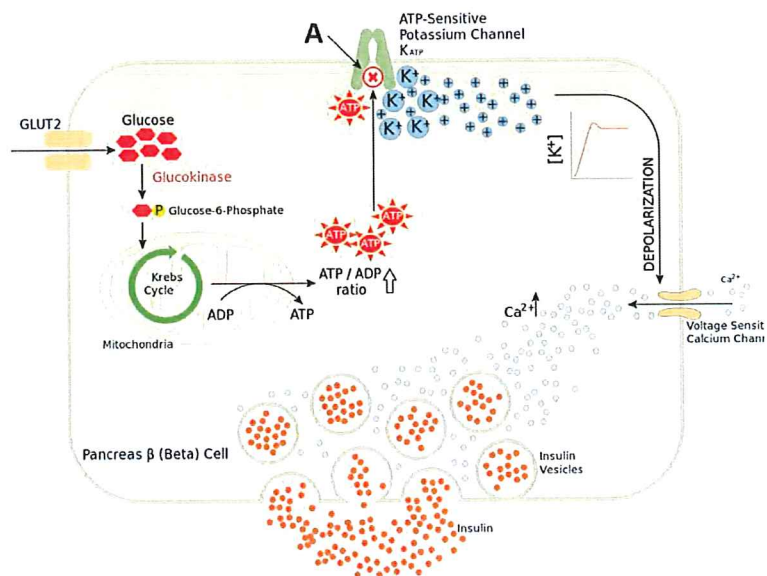
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20. How is insulin modified to produce analogues with varying durations of action? 1p

21. State four adverse effects of insulin. 2p

22. The site of action of which group of drugs is shown at site A on the diagram below? 1p



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23. State two reasons why levothyroxine (T₄) is preferred over liothyronine (T₃) in clinical practice. 2p

24. Why should both levothyroxine (T₄) and liothyronine (T₃) be taken on an empty stomach? 1p