Mittuniversitetet
MID SWEDEN UNIVERSITY

Försättsblad Prov Original

Kurskod	Provkod	Tentamensdatum
IV055G	1000	2018-10-29
Kursnamn	Idrottsvetenskap GR (A), Anatomi, fysiologi och idrottsfy...	
Provnamn	Moment 1	
Ort	Östersund	
Termin	H18	
Ämne	Idrottsvetenskap	

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Kodnr:_____

TENTAMEN

MOMENT 1 (5HP)

Idrottsvetenskap GR (A)
Anatomi, fysiologi och idrottsfysiologi 30hp, IV055G

Datum: 2018-10-29

Tid: 3 timmar

Hjälpmedel: Engelsk-Svensk lexicon (eller lexicon mellan Engelska/Svenska och hemspråk).

Maxpoäng: 60p

A – Framstående (> 90%)	> 54 p
B – Mycket bra (80%)	48 p
C – Bra (70%)	42 p
D – Tillfredställande (65%)	39 p
E – Tillräcklig (60%)	36 p
Fx – Otillräcklig med komplettering (57-60%)	34 p
F – Otillräcklig	<34p

Instruktioner:

- Svara frågor från varje ämne på ett separat lösblad, men tänk på att du INTE får skriva på baksidan av det!
- Skriv ditt kodnummer på varje lösblad samt din tenta
- Ta det lugnt och läs frågorna noga
- Observera att era svar kan ges på Svenska eller Engelska

Kursansvarig: Helen Hanstock, 010 142 81 24 / 073 060 2202

LYCKA TILL!

GRUNDLÄGGANDE KEMI OCH FYSIK

Lärare: Helen Hanstock. Max 7p.

1. What is an **atom**? Describe the structure of an atom, including its component particles and their charges and location. (Draw if you like). (2p)

2. Using the information in the table below, calculate the molar mass of lactic acid, $C_3H_6O_3$. Include units in your answer. (2p)

1A							8A
1 H 1.01	2A	3A	4A	5A	6A	7A	2 He 4.00
3 Li 6.94	4 Be 9.01	5 B 10.8	6 C 12.0	7 N 14.0	8 O 16.0	9 F 19.0	10 Ne 20.2
11 Na 23.0	12 Mg 24.3	13 Al 27.0	14 Si 28.1	15 P 30.1	16 S 32.1	17 Cl 35.5	18 Ar 39.9

3. Name the four major **macromolecules** in the body. For one family of macromolecules, describe the structure of one of its monomers. (2p)

4. What is a **hydrolysis** reaction? What is it used for in the body? (1p)

CELL OCH VÄVNAD

Lärare: Pär Leijonhufvud. Max 14p.

5. Hur kan olika typer av ämnen färdas in och ut ur en cell? (3p)

6. Hur tillverkas ett protein i dina celler? (3p)

7. Vilka organeller är inblandade när en cell producerar och utsöndrar ett peptidhormon? (3p)

8. Förklara hur ett fettlösligt hormon får sin effekt i mottagarcellen? (2p)

9. Hur sitter cellerna i en vävnad fast vid varandra? Vilka egenskaper har de olika sätten? (3p)

NERVSYSTEMET

Lärare: Helen Hanstock. Max 17p.

10. This question is about **neurotransmitters**.

    a. What is a neurotransmitter? Describe the criteria used to define a neurotransmitter in the body. (2p)
    b. Give two examples of neurotransmitters and the parts of the nervous system they are involved in. (2p)

11. Describe, in as much detail as you can, how an **action potential** is generated in a neuron. (3p)

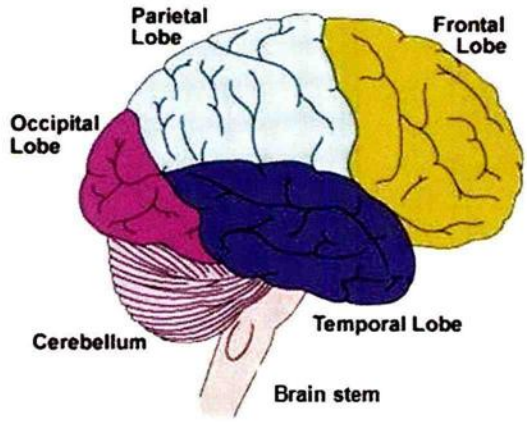
12. Describe the pathway of the **pain withdrawal reflex (*böjreflexen*)** (3p)

13. Movement is planned in the brain and happens when a signal is sent to the muscle to stimulate contraction. Briefly describe the brain structures involved in creating **fine and broad motor control** of movement and the pathways that the nerve signals take from the brain to the muscles. (2p)

14. Briefly describe the major functions of the **brainstem** region. (1p)

15. Match the four lobes of the brain's cortex to their major functions: (2p)

1. Frontal lobe	(a) Sensation, perception, sensory integration
2. Temporal lobe	(b) Vision
3. Occipital lobe	(c) Hearing, language comprehension, memory.
4. Parietal lobe	(d) Personality, behavior, motor control



16. Describe the organisation and major functions of the **parasympathetic nervous system**. (2p)

SINNENA

Lärare: Helen Hanstock. Max 10p.

17. What is the difference between **primary and secondary sensory receptor cells**? Name one example of each in the body. (2p)

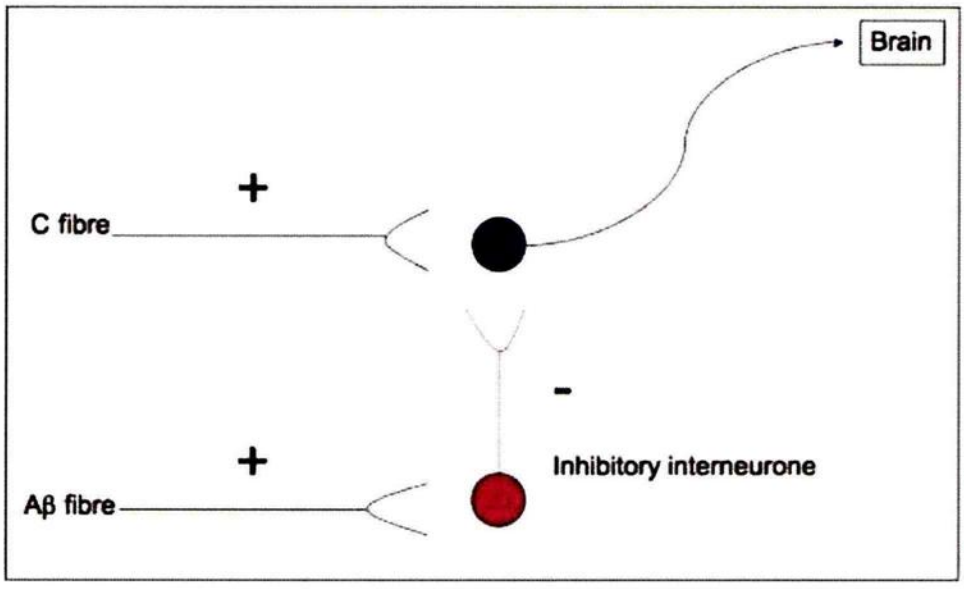
18. This question is about **vision**:

    a. In which structure in the eye are the photoreceptor cells located? (1p)
    b. What are the names of the two types of **receptor cells that detect light**? (1p)
    c. What is the name of the **photosensitive molecule** in these cells? (1p)
    d. Which cells come together to form the **optic nerve**? (1p)

19. Briefly describe the concept of a **receptive field (*receptoriska fält*)**, using touch receptors in the skin (*taktila känselreceptorer*) as an example. Do receptive field sizes vary in different regions of the body?

    (2p)

20. The diagram below illustrates the **gate control theory of pain**. Using the diagram to help you, explain why massaging an injured area might help it to feel less painful. (2p)



ENDOKRINA SYSTEMET

Lärare: Helen Hanstock. Max 12p.

21. Compare and contrast (*jämfora och kontrastera*) the structure and mechanisms of hormone secretion by the **anterior pituitary (*hypofysens framlob*)** and **posterior pituitary (*hypofysens baklob*)**. (3p)

22. This question is about the **pancreatic hormones**.
    a. Briefly describe the structure of the pancreas (*bukspottkörteln*). (2p)
    b. Name two hormones that are secreted at the pancreas their functions. (2p)
    c. Briefly describe one disease that affects control of this system. Explain where the normal feedback mechanism is disrupted and the major consequences of the disease. Draw if you like! (2p)

23. Describe one hormone that is secreted in pulses (**pulsatile secretion; *episodisk hormonutsöndring***). What kind of event or stimulus might trigger secretion of this hormone, and what is its effect? (3p)