UNIVERSITY
OF SKÖVDE

Cover sheet with information to the invigilator

School of Bioscience

Course: Sustainable Development G1N

Examination: Written examination

Course code: BV112G

Credits for written examination: 2 hp

Date: 2024-09-27

Examination time: 08:15-12:30

Available teacher: Jenny Lennartsson

Available on phone number: 070-4093764

Visiting the examination: ☐ Yes
☒ No

Aids and other information for invigilators: Nothing

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

If you copy the exam papers yourself, provide the number of copies: 5

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.
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UNIVERSITY
OF SKÖVDE

School of Bioscience

WRITTEN EXAMINATION

Course: Sustainable Development G1N

Examination: Written exam

Course code: BV112G

Credits for written examination: 2 hp

Date: 2024-09-27

Examination time: 08:15-12:30

Examination responsible: Jenny Lennartsson

Teachers concerned: Sonja Leidenberger

Aid at the exam/appendices: None

Other

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: The exam will be graded A-F. To achieve the grade E, you must have at least 50% of the points for each part of the exam. In addition to the requirements for E, gives a total score of 60% = D, 70% = C, 80% = B, and 90% = A

Examination results should be made public within 18 working days

Good luck!

Total number of pages: 5

Written exam 2 hp: Sustainable Development (BV112G)

Date of exam: 2024-09-27

Welcome!

This exam covers the course objectives listed below. Each objective is tested by 3 - 5 questions and the total amount of points on the exam is 30.

For grade E, 50% of the points on each course objective are required, i.e.:

Course objective 2: at least 4.5 points,

Course objective 3: at least 3.5 points,

Course objective 4: at least 4 points,

and Course objective 5: at least 3 points.

For higher grades the student must fulfill the requirements for grade E and then collect 60-90% of the total score of the exam according to the following: D= 18 p (60%), C= 21 p (70%), B= 24 p (80%) and A= 27 p (90%)

Course objectives

After the course, the student is expected to have reached the following goals and acquired skills:

- *Course Objective 2:* After completed course the student should be able to discuss how economic, social, and ecological factors affect populations, ecosystems, and the sustainable management of natural resources,
- *Course Objective 3:* After completed course the student should be able to describe the main national and international sustainable development goals, and how governments, corporations, and NGOs at local, regional and global levels pursue the fulfilment of these goals,
- *Course Objective 4:* After completed course the student should be able to use knowledge about biological resources and ecological factors in discussions about natural resource management and environmental issues,
- *Course Objective 5*: After completed course the student should be able to account for the principles of ecological footprints and life cycle analysis, and to discuss difficulties with these.

Note: you choose if you want to answer in English or Swedish

Best of luck!

Course objective 2

After completed course the student should be able to discuss how economic, social, and ecological factors affect populations, ecosystems, and the sustainable management of natural resources. (max 9 p, E: 4.5 p)

1. Explain the concept of sustainable development according to the United Nations definition. (2 p)

2. There are three categories of energy resources, and these differ in the rate at which they are replenished (renewed). Name these three categories and explain the relationship between how fast they are replenished in relation to human consumption (3 p)

3. The use of artificial fertilizers in agriculture, along with the combustion of fossil fuels and other organic materials, are two examples of how human activities influence the nitrogen cycle. Altering these natural processes can have detrimental effects on the environment and, consequently, on human societies as well. Explain how the use of artificial fertilizers affects the nitrogen cycle and what environmental problems are associated with it. (2 p)

4. Is it true or false that topsoil is a limited resource because intensive farming affects the ability of the soil to recreate itself? (1 p)

5. Is it true or false that the education of women is associated with reduced birth rates? (1 p)

Course objective 3

After completed course the student should be able to describe the main national and international sustainable development goals, and how governments, corporations, and NGOs at local, regional and global levels pursue the fulfilment of these goals. (max 7 p, E: 3.5 p)

6. There are two critical differences between Agenda 2030 and the Swedish Environmental Objectives (SEO). One is that Agenda 2030 are global goals while the SEO are national goals. The other key difference between Agenda 2030 and SEO concerns which dimensions of sustainable development they cover. Explain the difference between Agenda 2030 and SEO from this perspective. (2p)

7. Is it true or false that the overall aim of the Swedish environmental legislation is to achieve economic sustainability? (1p)

8. Assign the following sustainability goals to either Agenda 2030 or Swedish environmental objectives. Use the denotations 2030 and SEO. (4 p)

   a) Gender Equality (0.5p)

   b) Clean Air (0.5p)

   c) Good-Quality Groundwater (0.5p)

   d) Responsible Consumption and Protection (0.5p)

   e) Sustainable Cities and Communities (0.5p)

   f) Zero Eutrophication (0.5p)

   g) Sustainable Forests (0.5p)

   h) Zero hunger (0.5p)

Course objective 4

After completed course the student should be able to use knowledge about biological resources and ecological factors in discussions about natural resource management and environmental issues. (max 8 p, E: 4 p)

9. Explain what biodiversity is and name its three main levels. (2 p)

10. Explain why biodiversity is crucial for the stability of ecosystems and human well-being. Discuss the connection between biodiversity and ecosystem services. (3 p)

11. Which of the following options does not pose a threat to biodiversity? (1p)
    a) Habitat loss
    b) Native species
    c) Overexploitation
    d) Climate changes

12. Is it true or false that the greenhouse effect is necessary for life on Earth? (1p)

13. Which term refers to the ability of an ecosystem to resist changes and recover from disturbances? (1p)

Course objective 5

After completed course the student should be able to account for the principles of ecological footprints and life cycle analysis, and to discuss difficulties with these. (max 6 p, E: 3 p)

14. The significant environmental changes caused by humans on Earth have led many to believe that we are now in a new geological era. What is this new era called? (1p)

15. If everyone in the world lived like we in Sweden, how many globes would we need? (1p)

16. What is Earth Overshoot Day? (1 p)

17. What is the abbreviation for the standard that provides guidelines for conducting a life cycle assessment? (1p)

18. Name two benefits, for a manufacturing company, of doing life cycle assessment for their products. (2p)