

Biology

Delprov A1

engelsk version

Årskurs

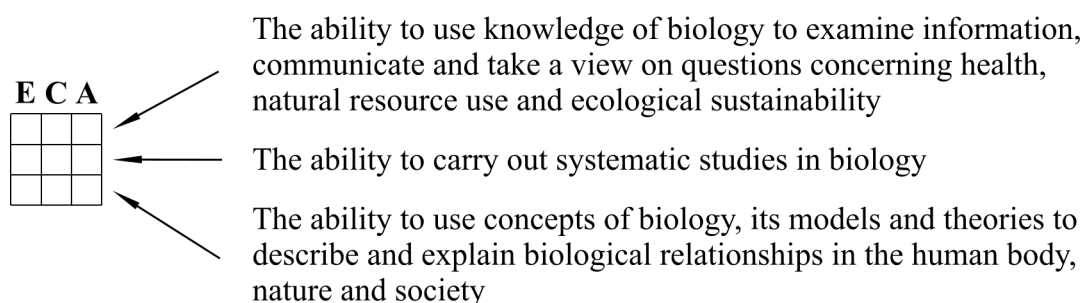
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Elevens namn och klass/grupp

NATIONAL TEST IN BIOLOGY 2014

The national test gives you a chance to show what you know about biology. On the right of each question you will find a symbol that tells you which of three abilities you can demonstrate in your answer.

The rows in the symbol describe these different abilities.



For each row you will be able to show your knowledge at three different levels: E, C and A.

For example, the table on the right indicates that the question allows you to show that you can use concepts of biology, its models and theories to describe and explain biological relationships in the human body, nature and society at level E and C.

Your answers to the questions should be clearly written so that other persons can read your text and understand your meaning. Therefore it is important that you show all your work.

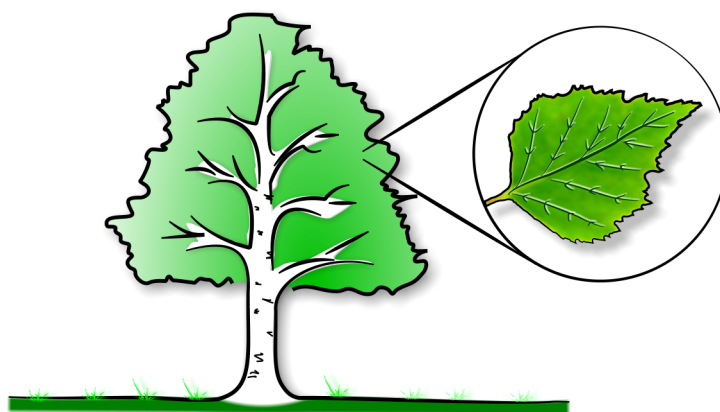
Time allowed: 75 minutes

Name: _____
 School: _____ Class: _____
 Date of Birth: Year _____ Month _____ Day _____
 Girl ☐ Boy ☐

Your answers must be written on separate sheets of paper, NOT on the question paper. The question paper must be returned to your teacher together with your answers.

1. What is true regarding photosynthesis?
Indicate which **three** of the alternatives A-E that are correct.

- A. Light is needed for photosynthesis.
- B. Photosynthesis produces carbon dioxide.
- C. Water is needed for photosynthesis.
- D. Photosynthesis produces oxygen.
- E. Dextrose is needed for photosynthesis.



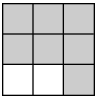
2. The first vertebrates lived about 500 million years ago.
Through evolution, other subgroups of vertebrates have evolved.
Examples of subgroups are mammals, fish, and amphibians.

- a) Name the time order of the evolution of the **three** subgroups mammals, fish and amphibian. Write the oldest subgroup first and the youngest last.

Life on land demands different adjustments for the vertebrates in comparison to life in water.

- b) Give **two** examples on vertebrate adjustments to life on land and explain why these adjustments have evolved.

3. Which **three** of the claims **A-F** are best describing how energy flows in an ecosystem?



Choose **one** option from every pair.

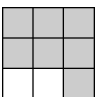
Pair 1 { **A.** The energy leaves the ecosystem as heat.
B. The energy stays in the ecosystem and circulate in a cycle.

Pair 2 { **C.** The energy comes from the photosynthesis.
D. The energy comes from the sun.

Pair 3 { **E.** The energy decreases step by step in the food chain.
F. The energy stays the same step by step in the food chain.

4. The human body's movement is an interaction between the nervous system and the muscles. The movement is regulated by reactions or reflexes.

Give an example of **one** reaction and **one** reflex and describe the difference between them by explaining what happens in the nervous system.



5. Antibiotic resistance imply that bacteria are resistant towards antibiotics, for instance different kinds of penicillin. Therefore, bacteria survive in spite of treatment using antibiotics.

Which of the alternatives **A-D** is the best describing how bacteria become resistant towards antibiotics?

- A. Bacteria are becoming resistant when people are careless with antibiotics and not eat the full treatment.
- B. Bacteria are becoming resistant when the bacteria that are antibioticsensitive die and when those who are tolerant towards antibiotics survive and breed.
- C. Bacteria are becoming resistant when they infect people who themselves are resistant towards antibiotics.
- D. Bacteria that have met penicillin fungi recognise antibiotics and become resistant.

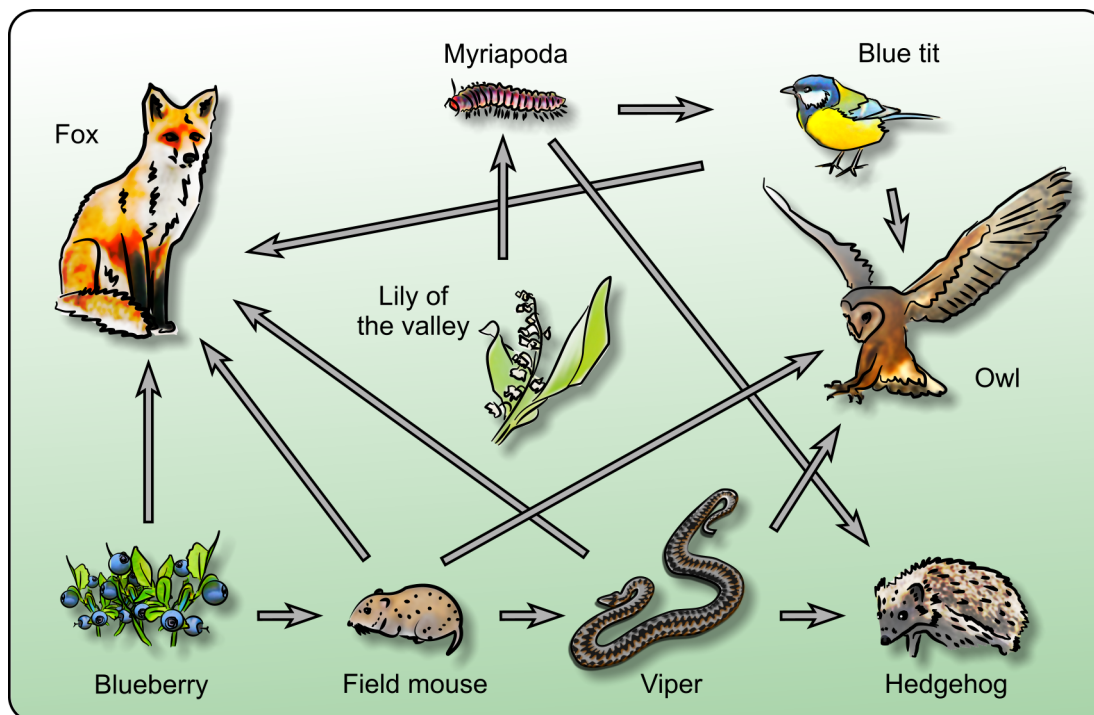
6. Every winter, many people in Sweden are infected by the flu, which is a viral disease.

- a) Give **one** example of how you can decrease the risk to be infected by the flu. Explain also why your example decreases the risk.

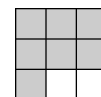
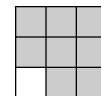
The body's adaptive immune system contains of several parts that collaborate to fight flu viruses.

- b) Explain how the body's immune system fights flu viruses.

7. The food web in the picture is a simplified model of an ecosystem from a Swedish forest. It shows how plants and animals are dependent on each other.



- a) If there will be more lily of the valley, will the number of blue tits increase or decrease? Motivate.
- b) Explain what might happen with the number of lily of the valley if there will be fewer vipers.

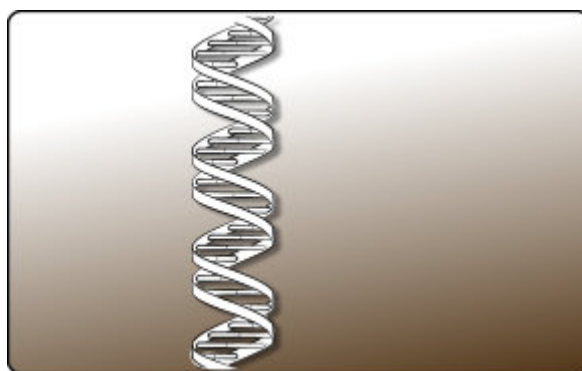


8. There is abandoned industrial land on many locations in Sweden. The industries might have been shut down centuries ago, however the land is unused even though it could be used to grow for instance vegetables.

Explain why there might be biological reasons for not using the abandoned industrial land to grow.



9. In 1953, the researchers James Watson and Francis Crick succeeded in identifying the structure of the DNA molecule. This also made it possible to understand the function of the DNA molecule.



- a) Give **one** example of a function that the DNA molecule has in the human body.



Research on the DNA molecule still proceeds and the enhancing knowledge is used within many different areas.

- b) Explain, with **one** example, what consequence the enhancing knowledge about the function of the DNA molecule has for the People's living conditions.





Institutionen för tillämpad utbildningsvetenskap