Biology Competition

Every task may be done by any grade student (tasks are not divided into grade groups).

1. In tropical rainforests one often sees larvae of different insects, tiny crustaceans, warms and even tadpoles. How could they get there? What are the advantages and disadvantages of this unusual location?

2. The intertidal area (also called the littoral zone) lays between the high and low tide zones. The littoral zone is covered with water at the high tide and becomes open at the low tide. What problems do the animals of this zone face and how could they adapt to solve these problems?

3. In the wild living creatures permanently struggle for survival. In order to escape the predators herbivorous animals have strong legs to run, spikes and shells for defence, protective coloring that helps to hide between plants or stones. Some animals leave their shelters only in the darkness. Predators, on the other hand, have to overcome the protective adaptations of the prey. So how can the plants survive when so many animals extensively feed on them? What adaptations do the plants develop?

4. Walking through the forest early in the morning, we often see delicate nets glittering with tiny dew drops. These are the hunting nets of spiders. They are made of filaments produced by special glands on a spider's body. But this is not the only way how spiders can use the cobweb. What are the other ways to use it? Do you know of any other animals that use the similar filaments? How do they use them?

5. Many people keep an aquarium at home. Some only want to get one. Then the question "Who will feed the fish?" is often rised. Is it possible to organize the life in aquarium in a way that will let you never feed the fish at all? Explain your answer.

6. We often hear on TV or in the movies that "mutations are dangerous", "mutants are horrible". But what do we call mutation from the biological point of view? What can cause it? Are the mutants really so dangerous as they are described?

7. Vision is one of the main senses of animals. Its efficiency depends strongly on the illumination conditions. At the same time there are some animals who constantly live in darkness or are active only at night. Try to describe what adaptations these animals could develop in order to live in darkness.

In process of grading biology competition answers scores are given for correct answers. Scores are not reduced because of incorrect answers. Scores given for correct answers on different question are summarized; the total depends on scores given and student grade.

Usually biology competition questions have several (sometimes many) correct answers. For each correct answer 1-2 scores are given (the amount of scores given depends on question difficulty and answer evidence).

Sometimes questions don't have decisive answer. In this case scores are given for every consistent hypothesis.

If student not only recites ideas but gives logical reasons for his (hers) ideas, student may be given additional scores.

In some questions students are asked to give examples; each correct example gives additional 0.5–1 score. Examples given should correspond to question asked. So, giving answer to a question about shone water animals an example "glowworm" won't be considered.

Homogenous examples are considered to be one example. If a question is about animals whom larvas and adult individuals have different forage, examples "frog" and "toad" will be considered as the homogeneous.

Several and even many (8–10) scores may be given for each question. There is no upper limit. Unfortunately, often students give only one answer getting only 1–2 scores. Volume of a text written doesn't affect the total. The amount of consistent thoughts and correct examples given by a student is important and it is not important how much text is written.

Reasoning on extraneous even related to a question themes won't raise the total. Only individually done task is graded. No scores are given for texts copied from any literature or any other source or other students' works.