

Guidance on Essay Question Writing for the ECVPH

This document is designed to support diplomates across the European College of Veterinary Public Health (ECVPH) in improving the quality of the essay questions used for the ECVPH qualifying examinations. It provides a brief overview of the essay question format that will be adopted, including when to utilise this assessment method, as well as basic rules and a check list for writing essay questions. This guidance is adapted from “Preparing effective essay questions” by Reiner, Bothell, Sudweeks and Wood (2002).

What is an essay question?

A short literary composition on a particular theme or subject, usually in prose and generally analytic, speculative, or interpretative. It is used because essays have the potential to reveal students' abilities to reason, create, analyse, synthesize, and evaluate.

An essay question should meet the following criteria:

1. Requires examinees to compose rather than select their response.
2. Elicits student responses that must consist of more than one sentence.
3. Require systematic, original and in-depth thinking about the ideas.
4. Allows different or original responses or pattern of responses among examinees.
5. Requires subjective judgment by a competent specialist to judge the accuracy and quality of responses.

When should essay questions be used?

It is appropriate to use essay questions for the following purposes:

- To assess students' understanding of subject-matter content.
- To assess students' abilities to reason with their knowledge of a subject.

Use essay questions for intended learning outcomes that require complex thinking and constructed responses that cannot be effectively assessed by multiple choice questions and short answer questions.

Essay question format

- They consist of a **context or vignette** (e.g., a clinical case presentation), followed by either **several relatively short tasks or essay questions**, or **one long one**.
- An essay question may be based on a case scenario or set of data and may include additional information e.g., graphs or images requiring the students higher-order thinking.
- It should be clearly indicated how the marks are allocated to each question.
- A **model answer** should be provided indicating where the marks are allocated.

Example 1.

THE CONTEXT: There have recently been human outbreaks of *Salmonella typhimurium* reported in Country X. Epidemiological studies suggest that the source is a food product containing chicken meat from poultry reared in Country X. As part of the Government's response, you have been asked to discuss the possibility of undertaking an emergency qualitative risk assessment to address this situation.

THE QUESTIONS (tasks):

1. Describe the stages of the two commonly used veterinary risk assessment frameworks, WOA and CAC (Codex), and explain which you would choose to address this situation and why. (4 marks)
2. How might the outputs, particularly the assessed risk level, differ between the two systems? Explain your reasoning. (3 marks)
3. Briefly compare and contrast qualitative and quantitative risk assessments. (3 marks)

MODEL ANSWER

1. WOA's framework includes release assessment, exposure assessment, consequence assessment and risk estimation (1 mark). Codex includes hazard identification, hazard characterization, exposure assessment, and risk characterization (1 mark). WOA is a versatile, generic framework used across different risk assessment types, while Codex originated from chemical setting standards in food and is commonly used for food safety risk assessment (1 mark). Given this, Codex is more suitable for the food safety context in this question (1 mark).

2. Both frameworks follow logical steps to estimate risk, but differ slightly in terminology and application (1 mark). Consequently, risk assessments addressing the same question should yield similar results (2 marks).

3. For both qualitative and quantitative risk assessments, the same generic steps are undertaken. A risk question is defined, a model pathway is constructed, inputs (the probability of occurrence for each of the steps in the model pathway) are defined, and data are collected to estimate these probabilities. These probabilities are then combined to estimate the overall risk, in the most appropriate way. These steps are undertaken iteratively and should involve communication with risk managers and scientific experts. (1 mark)

Qualitative assessments involve the estimation of probabilities (model inputs and final risk estimates) using categorical statements such as negligible, low, medium, and high. These estimates are derived by evaluation of available data. They can make direct use of information (data) provided in a wider variety of formats than a quantitative risk assessment and can use this data in a simpler form; for example, they can make use of text directly rather than necessarily converting it into a numerical format. Combining inputs (probabilities) to give the final risk estimates can be undertaken using a descriptive or matrix approach. Sometimes, especially where there is more than one parallel pathway in the model, combining the probabilities of the steps in the pathway is not possible, and clear descriptions of the probabilities for each step, is the best overall result that can be achieved (1 mark).

Quantitative risk assessments require numerical data (usually in raw form). They can take more time than a qualitative risk assessment due to the production of a (possibly complex) mathematical model. The model can use single values (deterministic) or probability distributions (stochastic) for inputs and the estimate of risk will be derived from a mathematical relationship between the model inputs. If the quantitative risk assessment is stochastic, specialised software and computer resources will be necessary. The numerical results should be summarised using statistics such as the mean/median and percentiles as well as graphical summaries such as cumulative probability distributions or density plots. (1 mark)

Basic rules for writing Essay questions

1. **Clearly define the intended learning outcome** to be assessed by the item. Specific intended learning outcomes are crucial to designing effective essay questions.
2. **Avoid** using essay questions **for intended learning outcomes** that are **better assessed with other kinds of assessment** (e.g., multiple choice questions or short answer questions).
3. Clearly **define the task and situate the task** within a problem situation, indicating the thinking and content required by:
 - a. Clearly define the task.
 - b. Delimit the scope of the task.
 - c. Clearly develop the problem or problem situation.
4. **Ensure the task is reasonable** and that examinees have adequate expertise to answer it.
5. **The tasks can be written as a statement or question.** If written as a question, then it must be readily translatable into the form of an imperative statement. For example, the following illustrates the same essay item twice, once as a question and once as an imperative statement.

Example 2.

Question: How are the processes of increasing production and improving quality in a manufacturing plant similar or different based on cost?

Imperative statement: Compare and contrast the processes of increasing production and improving quality in a manufacturing plant based on cost.

6. Ask a knowledgeable colleague to **critically review** the essay question, the model answer, and the intended learning outcome for alignment.

Checklist for Writing Essay Questions

- ☐ Could the content be **better assessed by another method**? Are you assessing higher order or critical thinking skills?
- ☐ Is the question **aligned** with the **intended learning outcome**?
- ☐ Is the essay question **too long**? Would it be better split into several short questions?
- ☐ Does the essay question contain a **clear and delimited task** and a specific problem situation (if necessary)?
- ☐ Is the question worded/structured in a way that will be **clear** to the examinees what they are expected to do?
- ☐ Is the task presented to Residents **reasonable**?
- ☐ If there is a problem situation included in the essay question, is it a **novel situation**?
- ☐ Do the examinees know the **recommended time** for completing their answers?
- ☐ Do the examinees know how many **points the essay is worth**?
- ☐ Have you written a **model answer** or an outline of major points that should be included in the answer? Is the model answer aligned with the intended learning outcome and the essay question?
- ☐ Did you have a person knowledgeable in the subject **critically review** the essay item **for clarity and for alignment** with the intended learning outcome and the model answer?