0173-513 JUNE 2018
Level 3 Technicals in Land and Wildlife
Level 3 Land and Wildlife Management – Theory Exam (2)

Candidate name (first, last)
First
Last
Candidate enrolment number
Date of birth (DDMMYYYY)
Gender (M/F)
Assessment date (DDMMYYYY)
Centre number
Candidate signature and declaration*

• If any additional answer sheets are used, enter the additional number of pages in this box.
• Please ensure that you staple additional answer sheets to the back of this answer booklet, clearly labelling them with your full name, enrolment number, centre number and qualification number in BLOCK CAPITALS.
• All candidates need to use a black/blue pen. Do not use a pencil or gel pen.
• If provided with source documents, these documents will not be returned to City & Guilds, and will be shredded. Do not write on the source documents.

* I declare that I had no prior knowledge of the questions in this assessment and that I will not divulge to any person any information about the questions.

You should have the following for this examination
• a pen with blue or black ink

General instructions
• Use black or blue ball-point pen.
• The marks for questions are shown in brackets.
• This examination contains 14 questions. Answer all questions.
• Answer the questions in the spaces provided. Answers written in margins or on blank pages will not be marked.
• Cross through any work you do not want to be marked.

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5700052793 A3 PO4500134356 10367489
1. a) Name two nutritional disorders in fish. (2 marks)

b) State the causes for the disorders identified in 1a). (2 marks)

2. Explain three factors influencing the nutritional efficiency of a fish feed. (6 marks)

3. State two factors which cause Gas Bubble Disease. (2 marks)
4. Figure 1 below is an image of a fish with a gill disorder.

![Image of a fish with a gill disorder](https://www.researchgate.net)

**Figure 1**

a) Identify the type of gill disorder shown in Figure 1. 

b) Name **two** causes for the disorder identified.

5. Define the term zoonotic disease with an example for such a disease in fish.

6. Describe the environmental risks associated with use of antibiotics to treat fish diseases.
7 Photosynthesis is a chemical process seen in plants. Identify

a) gas produced as a by-product of photosynthesis (1 mark)

b) the gas used during photosynthesis (1 mark)

c) the chemical pigment used during photosynthesis (1 mark)

d) the carbohydrate produced during photosynthesis. (1 mark)
8 Draw a labelled diagram of the nitrogen cycle in an aquatic system. (6 marks)
9  a) What are the **three** main groups of rock classified as? (3 marks)

b) Describe the formation of **two** types of rocks listed in 9a). (6 marks)

10 The image in Figure 2 below shows particles and their size and texture. (1 mark)

Source: http://www.pinsdaddy.com

**Figure 2**

Name the soil particle B.
11 Fish farmers commonly feed fish to appetite, for the best growth rates, dependant on their behaviour.
   a) Name **two** types of behaviour that would encourage the fish farmer to feed. (2 marks)

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   b) Name **two** types of behaviour that would discourage the fish farmer from feeding. (2 marks)

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12 Name the **three** internal organs A, B and C in Figure 3. (3 marks)

<Figure 3>

Source: http://www.tutorvista.com/content/biology/biology-iii/animal-kingdom/phylum-chordata.php

13 State **one** method used to reduce fish stress as a result of pH changes. (1 mark)

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14 Human land use affects environmental processes. Discuss the impact of human land use on aquatic environment and fish health. (12 marks)