

Please check the examination details below before entering your candidate information

Candidate surname					Other names				
Centre Number					Learner Registration Number				

Pearson BTEC Level 3 Nationals Extended Diploma

Supervised hours 2 hours	Paper reference	31644H
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Animal Management
UNIT 1: Animal Breeding and Genetics

Part B

You do not need any other materials.	Total Marks

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and learner registration number.
- Answer **all** activities.
- Answer the activities in the spaces provided
– *there may be more space than you need.*
- **Part A** will need to have been used in preparation for completion of **Part B**.
- **Part B** contains material for the completion of the set task under supervised conditions.
- **Part B** should be undertaken in one session timetabled by Pearson.
- **Part B** is specific to each series and this material must only be issued to learners who have been entered to undertake the task in that series.
- **Part B** should be kept securely until the start of the supervised assessment period.

Information

- The total mark for this paper is 80.
- The marks for **each** activity are shown in brackets
– *use this as a guide as to how much time to spend on each activity.*

Advice

- Read each activity carefully before you start to answer it.
- Try to answer every activity.
- Check your answers if you have time at the end.

Turn over ►

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Instructions to Teachers/Tutors and/or Invigilators

This set task is a formal external assessment and must be conducted with reference to the instructions in this task and answer booklet and the *BTEC Nationals Instructions for Conducting External Assessments (ICEA)* document, to ensure that the supervised period is conducted correctly and that learners have the opportunity to carry out the required activities independently.

Part B set task is undertaken under formal supervision in a single session of **two hours** timetabled by Pearson.

Part B materials must be issued to learners for the specified session. Work should be completed in this task and answer booklet.

Part B set task requires learners to apply understanding gained through familiarisation with the context. Learners should bring in notes as defined in **Part A**.

The teacher/tutor needs to ensure that the notes comply with the requirements.

All learner work must be completed independently and authenticated by the teacher/tutor and/or invigilator before being submitted to Pearson.

Learners must not bring anything into the supervised environment or take anything out without teacher/tutor and/or invigilator approval.

Centres are responsible for putting in place appropriate checks to ensure that only permitted material is introduced into the supervised environment.

Maintaining security

- The assessment areas must only be accessible to the individual learners and to named members of staff.
- Learners can only access their work under supervision.
- Any work learners produce under supervision must be kept securely.
- Only permitted materials for the set task can be brought into the supervised assessment.
- During any permitted break and at the end of the session, materials must be kept securely and no items removed from the supervised assessment.
- Learners are not permitted to have access to the internet or other resources during the supervised assessment period.

Outcomes for submission

A completed task and answer booklet.

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Instructions for Learners

Read the set task information carefully.

This session is of **two hours**. Plan your time carefully.

You have prepared for the set task given in this **Part B** booklet. Use your notes prepared during **Part A** if relevant. Attempt all of **Part B**.

Your notes must be your own work and will be retained by your centre until results are issued.

You will complete this set task under supervision and your work will be kept securely during any breaks taken.

You must work independently throughout the supervised assessment period and must not share your work with other learners.

Outcomes for submission

A completed task and answer booklet.



P 6 4 3 6 3 R A 0 3 2 0

Set Task

You must complete ALL the activities in this task and answer booklet.

The activities in this task and answer booklet relate to **snake species**.

Part A Set Task Information

You are required to carry out research into industry standards and practice in relation to the captive breeding of:

- **Snake species.**

Part B Set Task Information

Jack owns a small reptile collection. He wants to set up a breeding programme to produce a variety of different coloured and patterned snakes. He will need to make sure that the snakes are suitable for beginners to care for.

You have been asked to provide information to help Jack manage the successful breeding of snakes.

Use your notes from any preparatory work completed in **Part A**.

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Answer ALL questions. Write your answers in the spaces provided.

1 Managing the breeding of snakes requires understanding of their biology.

(a) State **two** survival strategies that snakes use.

(2)

1

2

(b) Explain **one** system snakes use to recognise potential sexual mates.

(2)

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(c) Describe **two** pieces of equipment used when handling a snake.

(4)

1

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(Total for Question 1 = 8 marks)



P 6 4 3 6 3 R A 0 5 2 0

2 (a) Give **four** factors that you would evaluate when assessing an adult snake to breed from.

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Jack wants to set up a snake breeding programme so he can develop his hobby into a profitable business. He has asked you to help him decide the factors he needs to consider when choosing the species to stock.

You will need to take into account the following information.

Aims of Jack's business:

- To stock a species with accommodation requirements suitable for a beginner and the pet trade.
- To breed a species of snake that is easy to handle.
- To stock a species that is not prone to breeding difficulties.
- To breed unusually patterned snakes for collectors.
- To sell the rest of the snakes to people as pets.

- (b) Discuss the factors that Jack should consider and which species of snake would be most suitable to achieve his aims.

You should take into account the desirable characteristics of the species that you have chosen.

(12)

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3 Snake skin pattern and colour in pythons is controlled by two genes.

One gene is for pattern type and one gene is for colour.

Wild pythons have dominant alleles (P and C) for both, and have a normal pattern and brown colouring.

A python that is homozygous recessive (pp) for the pattern gene will look 'pinstripe'.

A python that is homozygous recessive (cc) for the colour gene will be albino (will appear yellow patterned).

- (a) Calculate the phenotypic probabilities if a male python that is heterozygous for both genes is crossed with a female albino snake that is heterozygous for the pattern gene.

(8)

Phenotypic probability



(b) Explain **two** effects of mutations on variation in a population.

(4)

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(Total for Question 3 = 12 marks)

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4 (a) Explain **three** reasons for keeping records when you breed snakes.

(6)

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(b) Explain **two** breeding problems snakes can suffer from.

(4)

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(c) Explain why young snakes do not need to feed immediately after they have hatched.

(2)

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(d) Explain **two** effects of poor hydration in snakes.

(4)

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(Total for Question 4 = 16 marks)

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5 (a) Describe **three** genetic manipulation techniques.

(6)

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(b) Explain positive and negative assortative mating.

(4)

Positive

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(Total for Question 5 = 10 marks)



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QUESTION 6 BEGINS ON THE NEXT PAGE.



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(Total for Question 6 = 18 marks)

TOTAL FOR TASK = 80 MARKS





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