

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

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**Friday 15 January 2021**

Morning (Time: 1 hour 30 minutes)

Paper Reference **31645H**

**Animal Management and Animal  
Management with Science**  
**Unit 2: Animal Biology**

**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** questions.
- Answer the questions in the spaces provided  
– *there may be more space than you need.*

### Information

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

### Advice

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

Turn over ►

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

1 There are seven types of nutrient that are important in an animal's diet.

(a) Complete the table below with the **two** missing groups of nutrients.

(2)

Fibre
Carbohydrates
Lipids
Proteins
Vitamins

(b) State the organ that makes bile.

(1)

(c) Complete the table below to show the names and functions of the compartments of a ruminant's stomach.

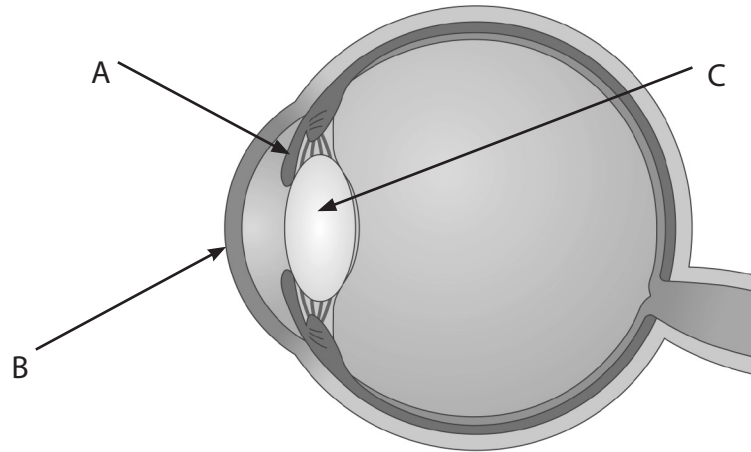
(4)

Name of stomach compartment	Function
	Process of fermentation involving bacteria and microorganisms
	Forms undigested food into balls of cud for regurgitation
Omasum	
Abomasum	

(Total for Question 1 = 7 marks)



2 The diagram shows the cross section of an eye.



Source: © metamorworks/Shutterstock

(a) Give the name of the structures labelled A, B and C.

(3)

A .....

B .....

C .....

(b) Explain the role of the following sense organs in detecting stimuli.

(4)

Ears

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Whiskers

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(c) Explain **one** advantage of eye positioning in ducks.

(2)

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(d) State the **two** components of the central nervous system.

(2)

1 .....

2 .....

**(Total for Question 2 = 11 marks)**

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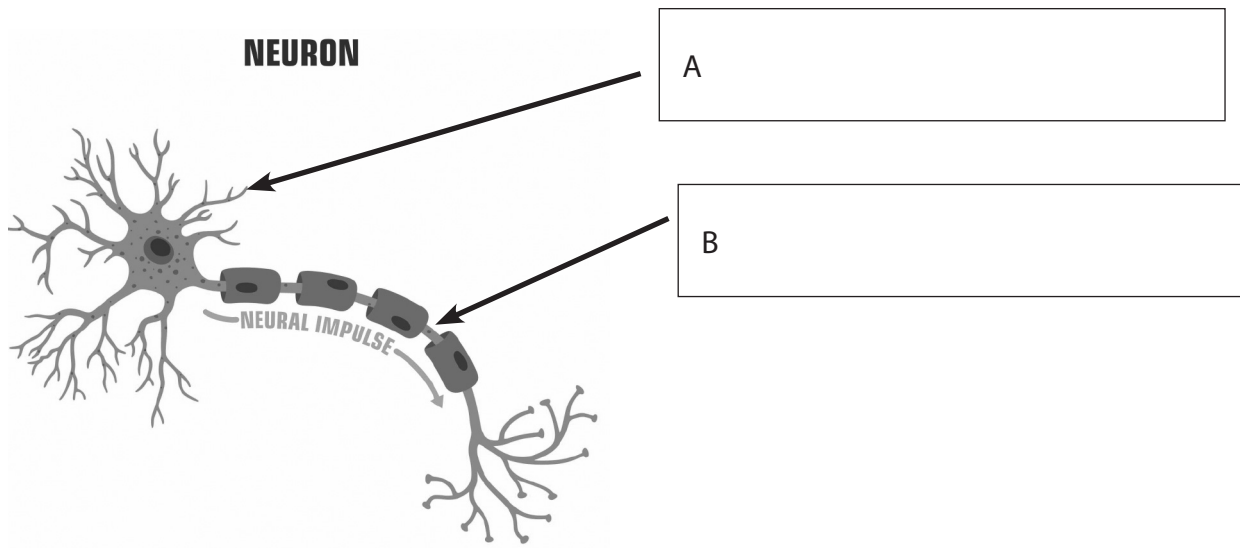
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3 The diagram shows a neuron (nerve cell).



Source: © ShadeDesign/Shutterstock

(a) Label the structures A and B in the diagram.

(2)

(b) Describe the role of a neurotransmitter.

(4)

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(c) Describe **two** types of neuron.

(4)

1 .....

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2 .....

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(d) Describe degenerative myelopathy (DM) in dogs.

(2)

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**(Total for Question 3 = 12 marks)**

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4 Cells are the basic units of living organisms, working together to perform specific functions.

(a) State **one** location of pseudostratified columnar epithelium.

(1)

(b) Describe the appearance of skeletal muscle.

(3)

(c) Give the name of the molecule that stores energy.

(1)

(d) Explain **two** features of slow twitch muscle fibres.

(4)

1

2

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(e) Describe how to prepare a sample of tissue to look at under a microscope.

(3)

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**(Total for Question 4 = 12 marks)**

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5 Blood is the transport system for nutrients and gases to and from cells in an animal's body.

(a) State the site of gaseous exchange.

(1)

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(b) Describe the processes involved in inhalation in mammals.

(4)

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(c) Explain the role of the lymphatic system in immunity.

(2)

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(d) Discuss the double circulatory system, including its advantages.

(8)

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(e) Describe symptoms of the following disorders.

(4)

Hypothermia .....

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Hyperthermia .....

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**(Total for Question 5 = 19 marks)**

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6 Endothermic animals maintain their body temperature.

(a) Explain the difference in temperatures of mammals and birds.

(4)

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(b) State the name of the organ that controls body temperature.

(1)

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(c) Explain **two** ways animals lose heat.

(4)

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2 .....

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(d) State **two** features that distinguish Pisces from other vertebrate classes.

(2)

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2 .....

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(Total for Question 6 = 11 marks)

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**(Total for Question 7 = 8 marks)**

**TOTAL FOR PAPER = 80 MARKS**





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