

0172-33 Level 3 Advanced Technical Extended Diploma in Animal Management (Science)

0172-045/545 Level 3 Animal Management – Theory exam (2)

June 2023 Mark Scheme

Q1	Lethargy and fever can be signs of an abscess. Name two other signs. (2 marks)			
Q1	1 mark each for any of the following, to a maximum of 2 marks: • Inflammation/swelling at the site (1) • Heat coming from the site (1) • Appetite loss (1) • Excessive licking or chewing of the site (1) • Hair loss at the site (1) • Pus/bleeding/oozing from the wound (1) • Black or putrid smelling skin (when left untreated) (1) Accept any other appropriate answer.	Do not accept unspecific signs and symptoms (eg pain).	2	AO1 315 1.3

Q2	Define each of the following anatomical terms: a. Palmar. b. Plantar. (1 mark) (1 mark)			
Q2	Acceptable answer(s)	Guidance	Max mks	Ref
Q2	1 mark each for any of the following, to a maximum of 2 marks: a. <u>Anterior/sole of</u> fore limb/foot (1) b. <u>Inferior/sole of</u> hind limb/foot (1)		1 1	AO1 315 1.1

Q3	Explain three treatments of canine parvovirus. (6 marks)			
Q3	Acceptable answer(s)	Guidance	Max mks	Ref
Q3	• Intensive nursing (1) to keep the animal comfortable/managing pain (1) • Intravenous fluid drip (1) to deal with dehydration (1) • Anti-inflammatory medication (1) to treat the swelling of the liver (1) • Tube feeding/High energy but easily digestible nutrition (1) to support tissue recovery (1) • Antibiotics (1) to treat secondary infections (1) • De-wormer (1) to remove additional stresses/improve immune system (1) Accept any other suitable answer.	Maximum of three marks for statements only.	6	AO2 315 1.4

Q4	A veterinary nurse in practice has noticed an uncapped needle in the general waste bin. Explain one action the veterinary nurse must take to comply with one piece of current legislation. (4 marks)			
Q4	Acceptable answer(s)	Guidance	Max mks	Ref
Q4	- The veterinary nurse must report this to the health and safety manager/safety officer/superior (1) who must report this as a near miss (1) to prevent future harm from the same situation occurring (1) to abide by RIDDOR (1) - Using appropriate PPE (1) the nurse must remove the uncapped needle from the general waste bin (1) and place into the sharps bin (1) to adhere to COSHH legislation (1) Accept any other appropriate answer in line with guidance.	Allow marks linked to one <u>relevant</u> legislation: - RIDDOR - Health and safety act - COSHH A maximum of 1 mark to be awarded for statements only.	4	AO2 315 2.3

Q5	Define the term 'compound' when used in chemistry. (2 marks)			
Q5	Acceptable answer(s)	Guidance	Max mks	Ref
Q5	A substance made from more than one element (1) chemically bonded together (1) Accept any other suitable answer relating to guidance.	Allow marks for answers relating to fixed ratios.	2	AO1 318 1.2

Q6	State two properties of a proton. (2 marks)			
Q6	Acceptable answer(s)	Guidance	Max mks	Ref
Q6	1 mark each for any of the following, to a maximum of 2 marks: - Positively charged particle/charge = +1 (1) - A mass of 1 amu (1) - Repels other protons (1) - Attracts electrons (1) - Located in the nucleus (1) Accept any other suitable answer.		2	AO1 318 1.2

Q7	Write the equilibrium constant expression for the following reaction: $\text{CO}_2(\text{g}) + \text{H}_2(\text{g}) \rightleftharpoons \text{CO}(\text{g}) + \text{H}_2\text{O}(\text{g})$ (3 marks)			
Q7	Acceptable answer(s)	Guidance	Max mks	Ref
Q7	$K_c (1) = \frac{[\text{CO}] [\text{H}_2\text{O}]}{[\text{CO}_2] [\text{H}_2]} \quad (1)$	A maximum of one mark to be awarded if square brackets are not used.	3	AO2 318 2.2

Q8	Explain the benefits of using graphical representation of results in experimental design. (5 marks)			
Q8	Acceptable answer(s)	Guidance	Max mks	Ref
Q8	Allows for quicker data comparison/processing (1) as it helps present complex data in a simple format/as graphs clearly show patterns in the data (1) which makes the data easier to interpret/provides clarity (1) helping researchers to identify relationships between variables (1) to inform the formulation of hypotheses/conclusion (1) Accept any other suitable answer.	Award marks for similar wording. Award up to one mark for statements only. Do not award marks for repetitive explanations.	5	AO2 318 2.1

Q9	Name two enzymes involved in protein transcription. (2 marks)			
Q9	Acceptable answer(s)	Guidance	Max mks	Ref
Q9	1 mark each for any of the following, to a maximum of 2 marks: • RNA <u>polymerase</u> (1) • Helicase (1) • RNA <u>primase</u> (1) Accept any other appropriate answer		2	AO1 321 2.3

Q10	State two animal cell organelles whose main function contributes to cellular waste disposal. (2 marks)			
Q10	Acceptable answer(s)	Guidance	Max mks	Ref
Q10	• Lysosome (1) • Vacuole (1) • Peroxisome (1)		2	AO1 321 1.1

Q11

Identify the type **and** stage of cell division shown in **each** figure below.

a)

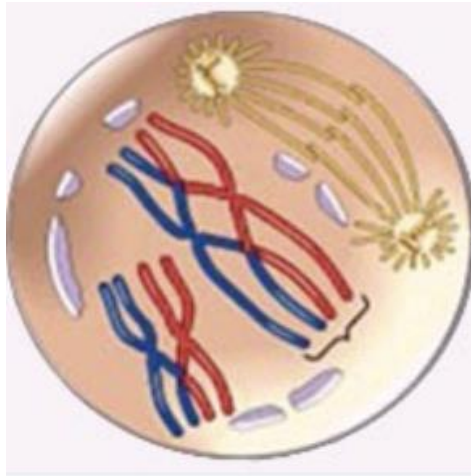


Figure 1

<https://quizlet.com/>

b)

(2 marks)

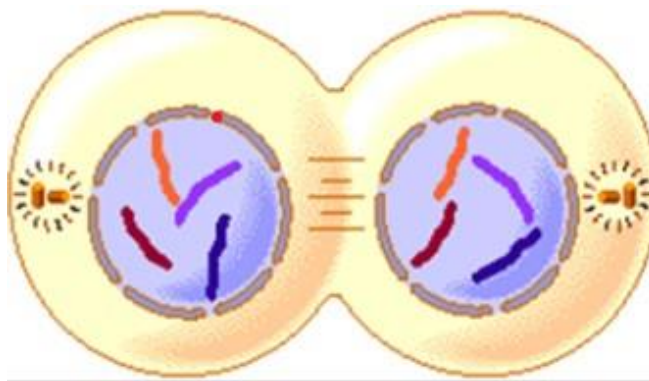


Figure 2

<https://www.quora.com/>

(2 marks)

Q11

Acceptable answer(s)

Guidance

**Max
mks**

Ref

Q11

a) Meiosis - (1) Prophase I (1)
b) Mitosis - (1) Telophase (1)

Only accept Prophase I.

**2
2**

**AO1
321 2.2**

Q12	Reticular tissue is a type of loose connective tissue. State the two other types. (2 marks)			
Q12	Acceptable answer(s)	Guidance	Max mks	Ref
Q12	1 mark each for any of the following, to a maximum of 2 marks: • Adipose (1) • Areolar (1)	Do not award marks for 'fat'.	2	AO1 321 4.2

Q13	Using examples, explain three ways mammalian cells use active transport.			
	(6 marks)			
Q13	Acceptable answer(s)	Guidance	Max mks	Ref
Q13	• Macrophages ingest bacteria through active transport (1) resulting in destruction of bacteria/phagocytosis (1) • Movement of ions (sodium or calcium pump) out of cells (1) to create an equilibrium/balance inside/outside of the cells (1) • Transportation of amino acids across the intestinal lining (1) for the absorption of nutrients (1) • Secretion of proteins/enzymes/hormones/antibodies (1) making them accessible for absorption (1) • Removal of waste products (1) via the bloodstream out of the body (1) • Regulate the movement of water (1) to control the volume of cells (1) Accept any other appropriate answer.	Award a maximum of three marks for statements only.	6	AO2 321 1.2

Q14	Explain three links between the structure and function of the skin. (6 marks)			
Q14	Acceptable answer(s)	Guidance	Max mks	Ref
Q14	• It has many layers of tightly packed cells/cells grow from the inner layer outwards (1) which protects underlying tissues (1) • Cells become keratinised/form hard covering as they age (1) to form a waterproof barrier (1) • The dermal layer contains sweat glands (1) which allow for secretion (1) • The dermal layer contains pores (1) which will allow for absorption (1) Accept any other suitable answer.	Do not award marks for repetitive answers. Only award a maximum of three marks for statements only.	6	A02 321 4.1

Q15	A rabbit presenting with a fever and other signs of Viral Haemorrhagic Disease has been brought into a veterinary practice. Discuss the effects the fever will have on the tissues within the body and the impact on nursing care considerations. (12 marks)			
Q15	Acceptable answer(s)	Guidance	Max mks	Ref
Q15	Band 1: 1-4 marks A limited range of considerations with a mostly descriptive answer showing clear gaps in knowledge and limited understanding. Candidate attempts to use technical terminology infrequently but mostly inaccurately. To access the higher marks in the band, the candidate demonstrates a wider range of considerations with superficial explanations, which may not all be valid. An attempt to provide some examples may be evident, but may not be relevant. Band 2: 5-8 marks Candidate considered a range of aspects of the topic with a clear discussion showing knowledge and understanding with some gaps. Technical terminology is used frequently with some inaccuracies. To access the higher marks in the band, discussion is supported with relevant examples with developed and valid links to the topic, including some justifications. Band 3: 9-12 marks Candidate considered a wide range of aspects of the topic with a comprehensive discussion showing thorough knowledge and understanding. Technical terminology is used correctly and appropriately throughout with minimal inaccuracies. To access the higher marks in the band, the discussion is supported using a broad range of highly relevant examples with clear and detailed justifications.	Indicative content Fever effects Renal failure Equilibria of liquids and gases Oxygen-haemoglobin dissociation curve Specialised cell types Structure and function of tissues Paralysis Respiratory problems Bloods/blood cells Loss of appetite/gut stasis Swelling of skin/skin nodules Cellular processes Nursing care Roles of staff Infectious diseases Treatments/IV FT Importance of communication Biosecurity Legislation	12	AO4 315 1.2, 1.4, 2.1, 2.2 318 2.2 321 1.2, 1.3, 4.1, 4.2, 4.3