

0172-545/045 Level 3 Technical in Animal Management (Science)

Q	Acceptable answer(s)	Guidance	Max mks	Ref
1a	a local inflammatory reaction (1) with a necrotic pus filled centre (1)	Do not accept growth.	2	315 – 1.3 AO1
1b	1 mark for each symptom, maximum of 2 marks Symptoms: swelling, inflammation, bite marks, pain, presence of pus, redness. Any other appropriate answer.		2	315 – 1.3 AO1
2	<ul style="list-style-type: none"> • intravenous fluids (1) to treat dehydration/shock (1) • immediate course of antibiotics (1) to reduce liver/kidney damage (1) • whole blood transfusions (1) if anaemia is already present (1) Any other appropriate answer		4	315-1.4 AO2
3	1 mark for any of the following, maximum of 6 marks <ul style="list-style-type: none"> • needles and other sharps must be placed in a designated labelled sharps container (1) and sealed when full (1) and disposed of using a licenced waste disposal company (1) • cadavers (dead animal material) stored safely for disposal (1) e.g for owner burial, pet cemetery burial or cremation (1) • pharmaceuticals stored in appropriate hazardous waste container (1) and removed by a licenced company for incineration (1) • infectious waste (such as contaminated gloves, swabs, animal bedding) placed into either yellow hazardous waste bags (1) for incineration at high temperature (1) or sorted and lower risk waste placed in purple bags (1) for autoclaving or other alternative treatment (1) Any other appropriate answer.		6	315-2.3 AO2
4	1 mark for any of the following, maximum of 4 marks. <ul style="list-style-type: none"> • place any broken glass in a designated glass bin for disposal 	Accept answers that refer to control of the experiment.	4	318-1.1 AO1

	<ul style="list-style-type: none"> report any spillages to a member of staff to avoid slips immediately wash any chemicals from hands with water from the tap rinse any chemicals from eyes with copious amounts of water and use an eye wash wear appropriate PPE to include laboratory coat, gloves and safety glasses use electric balance with care with no trailing cables to avoid electric shock PAT testing equipment to avoid electric shock work tidily to avoid trip hazards <p>Any other appropriate answer</p>			
5a	<p>1 mark for any of the following, maximum of 4 marks for temperature and maximum of 4 marks for catalysts</p> <p>Temperature:</p> <ul style="list-style-type: none"> in exothermic reactions (1) if the temperature is increased, the yield of products is decreased (1) or if the temperature is decreased, the yield of products is increased (1) in endothermic reactions (1) if the temperature is increased, the yield of products is increased (1) or if the temperature is decreased, the yield of products is decreased (1) <p>Any other appropriate answer.</p>		4	318-2.2 AO2
5b	<p>Catalyst:</p> <ul style="list-style-type: none"> lower the activation energy (1) and speed up chemical reactions (1) there is no overall effect of the position of the equilibrium due to the presence of a catalyst (1) if insufficient catalyst present it will take a long time for the equilibrium to be established (1) <p>Any other appropriate answer.</p>		4	318-2.2 AO2

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6	<p>1 mark for any of the following, maximum of 4 marks</p> <ul style="list-style-type: none"> • Bacterial cells are prokaryotic (1) and do not have membrane bound organelles (1) • Bacteria have a single strand of DNA/RNA/nucleoid (1) • Bacteria have a cell wall/membrane (1) • Bacteria are smaller than animal cells (1) • Bacteria cells tend to be unicellular (1) • Bacteria have no specialised cells (1) <p>Any other appropriate answer</p>	<p>Accept any of the following -</p> <p>Ribosomes</p> <p>Plasmid</p> <p>Flagellum</p> <p>Pili</p>	4	321-1.3 AO1
7	<p>1 mark for any of the following, maximum of 4 marks</p> <ul style="list-style-type: none"> • prophase • metaphase • anaphase • telophase 		4	321-2.2 AO1
8	<p>1 mark for each of the following, maximum of 2 marks</p> <ul style="list-style-type: none"> • Chromosomes come together (1) and genetic information is exchanged or swapped this is known as crossing over (1) • This is a random act that results in an extensive gene pool (1) • Male and female chromosomes exchange genetic material (1) <p>Any other appropriate answer</p>		2	321-2.2 AO1
9	<p>1 mark for any of the following, maximum of 4 marks</p> <ul style="list-style-type: none"> • Chromosomes carry the genetic code for the organism in the DNA (1) • Contains the genetic information to make each living organism unique (1) • Chromosomes are responsible for the coding (1) and construction of proteins within the cell (1) • Chromosomes share genetic material between male and female chromosomes – crossing over (1) • Identical copies of chromosomes are made in mitosis (1) • Non-identical copies of chromosomes are made in meiosis (1) <p>Any other appropriate answer</p>		4	321-2.1 AO2

10	<p>1 mark each for any of the following, maximum of 4 marks</p> <p>Loose connective tissue</p> <ul style="list-style-type: none"> • Located between the body organs (1) and beneath the skin (1) to separate the skin and tissues underneath • Contains collagen fibres (1) to provide some strength (1) • Contains elastic fibres (1) to allow limited expansion/contraction of the tissue (1) • Contains fibroblasts to produce collagen fibres (1) for tissue strength (1) • Contains fat cells (1) for energy storage and insulation (1) • Blood and nerve cells embedded within it (1) for provision (1) and nutrients (1) and communication (1) <p>Answer: 1 mark each for any of the following, maximum of 4 marks</p> <p>Dense connective tissue</p> <ul style="list-style-type: none"> • Contains larger numbers of collagen fibres (1) for extra strength (1) • Contains more fibroblasts than loose connective tissue (1) enabling the production of more collagen/matrix (1) • Fibres may be arranged at random in different directions (1) • In ligaments and tendons the fibres are arranged in parallel (1) to provide greater strength (1) • Fibres are arranged in flat sheets (1) to bind together muscle fibres (1) <p>Any other appropriate answer</p>	8	<p>321-4.2</p> <p>AO2</p>
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11	<p>Band A (1 – 4 marks): The candidate briefly discussed the considerations in relation to the condition or injury. Key points in relation to the topics were described, but clear gaps in knowledge were present and limited understanding of the topics shown. Technical terminology is used either infrequently or inaccurately.</p> <p>To access the higher marks within the band, the candidate will have briefly described both the condition and injury.</p> <p>Band B (5 - 8 marks): The candidate discussed the condition and injury in detail and most points are valid. Key points in relation to the topics were described, with some gaps in knowledge present but a good understanding of the topics shown. Technical terminology is used frequently and mostly accurately.</p> <p>To access the higher marks within the band, the candidate will have justified their considerations and recommended actions, with discussion around the genetic condition.</p> <p>Band C (9 - 12 marks): The candidate comprehensively discussed the valid points the importance of genetic condition and injury, and infection control, with justifications. Key points in relation to the topics were described, minor gaps in knowledge may be evident, but a thorough understanding of the topics shown. Technical terminology is used frequently and accurately throughout.</p> <p>To access the higher marks within the band, the candidate will have provided coherent comprehensive description of sex-limiting traits and inheritance of genes, plus the implications to the dog.</p> <p>For no awardable content, award 0 marks.</p>	<p>Indicative content:</p> <p>Gene interactions and their effects on inheritance</p> <p>Haemophilia as a sex-linked trait.</p> <p>Implications of breeding</p> <p>Common surgical conditions</p> <p>Control of bleeding and infection control</p> <p>Safe disposal of waste</p>	12	Unit Integr ated questi on AO2
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