

7457-402 Marking Scheme

Level 3 Diploma in Small Animal Veterinary Nursing

Level 3 Anatomy and Physiology Knowledge Test – Paper 3

Series: March 2023

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Q1	Define the following physiological terms. a) Hysterectomy. (1 mark) b) Neuralgia. (1 mark) c) Perivascular. (1 mark)		
Q1	Acceptable answer(s)	Guidance	Max mks
Q1	1 mark each for any of the following, to a maximum of 3 marks: a) (Surgical) removal of the uterus (1) b) Pain in a nerve/nerve pain (1) c) Around a vessel (1)	Similar wording / terminology acceptable	3

Q2	State two modes of joint movement that can be applied to the hip joint of a dog. (2 marks)		
Q2	Acceptable answer(s)	Guidance	Max mks
Q2	1 mark each for any of the following, to a maximum of 2 marks: <ul style="list-style-type: none">• Abduction (1)• Adduction (1)• Extension (1)• Flexion (1)• Rotation (1)• Protraction (1)• Retraction (1)• Circumduction (1)		2

Q3	State three anatomical boundaries of the abdominal cavity of a cat. (3 marks)		
Q3	Acceptable answer(s)	Guidance	Max mks
Q3	1 mark each for any of the following, to a maximum of 3 marks: <ul style="list-style-type: none">• Diaphragm (1)• Pelvic inlet (1)• Lumbar vertebrae/hypaxial muscles (1)• Muscles of the ventral abdominal wall (1)• Muscles of the lateral abdominal wall (1)	Similar wording / terminology acceptable	3

Q4	State three functions of synovial fluid. (3 marks)		
Q4	Acceptable answer(s)	Guidance	Max mks
Q4	1 mark each for any of the following, to a maximum of 3 marks: <ul style="list-style-type: none"> • Lubricates the joint (1) • Protects the joint (against impact/ injury) (1) • Provides nutrition to the cartilage (1) Any other acceptable answer	Similar wording / terminology acceptable	3

Q5	Describe the process of diffusion. (3 marks)		
Q5	Acceptable answer(s)	Guidance	Max mks
Q5	1 mark each for each of the following, to a maximum of 3 marks: The (passive) movement of molecules/liquid/gas (1) down a concentration gradient (1) from an area of <u>high concentration to an area of low concentration</u> (1)	Similar wording / terminology acceptable	3

Q6	Explain the process for the following two types of muscle contraction. a) Isometric. (2 marks) b) Isotonic. (2 marks)		
Q6	Acceptable answer(s)	Guidance	Max mks
Q6	1 mark each for any of the following, to a maximum of 2 marks: <p>a) Muscle tone is increased/muscles tenses (1) but the muscle does not shorten/move (1)</p> 1 mark each for any of the following, to a maximum of 2 marks: <p>b) Muscle shortens or lengthens (1) to allow movement (1)</p>	Similar wording / terminology acceptable	4

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Q7	Name three salivary glands. (3 marks)		
Q7	Acceptable answer(s)	Guidance	Max mks
Q7	1 mark each for any of the following, to a maximum of 3 marks: <ul style="list-style-type: none">• Mandibular (1)• Parotid (1)• Sublingual (1)• Zygomatic (1)		3

Q8	Explain the function of the blood-brain barrier. (3 marks)		
Q8	Acceptable answer(s)	Guidance	Max mks Ref
Q8	1 mark each for each of the following, to a maximum of 3 marks: Neurological/nervous tissue that forms an (impenetrable) barrier (1) to protect the brain from harmful/unneeded substances (1) allows useful substances/oxygen/electrolytes across (for brain metabolism) (1)	Similar wording / terminology acceptable	3

Q9	Explain the role of the parathormone in regulating blood calcium. (4 marks)		
Q9	Acceptable answer(s)	Guidance	Max mks
Q9	1 mark each for the following, to a maximum of 4 marks: Parathormone is secreted from the parathyroid glands (1) in response to low blood calcium (1) (this initiates) calcium is reabsorbed from the bone/intestines/kidneys into the blood (1) blood calcium levels rise (1)	Similar wording / terminology acceptable	4

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Q10	Name two superficial lymph nodes. (2 marks)		
Q10	Acceptable answer(s)	Guidance	Max mks
Q10	1 mark each for any of the following, to a maximum of 2 marks: <ul style="list-style-type: none">• Submandibular (1)• Parotid (1)• Prescapular/superficial cervical (1)• Inguinal (1)• Popliteal (1)• Axillary (1)		2

Q11	Name three substances that are transported in the blood. (3 marks)		
Q11	Acceptable answer(s)	Guidance	Max mks
Q11	1 mark each for any of the following, to a maximum of 3 marks: <ul style="list-style-type: none">• Carbon dioxide (1)• Oxygen (1)• Nutrients (1)• Waste products (1)• Hormones (1)• Enzymes (1)• Mineral salts (1)• Plasma proteins (1)• Antibodies (1)• Antigens (1) Any other acceptable answer	Allow specific examples of each point given eg 'glucose' instead of nutrients	3

Q12	State the function of the following structures. a) Paranasal sinuses. (1 mark) b) Nasal turbinates. (1 mark) c) Epiglottis. (1 mark) d) Larynx. (1 mark)		
Q12	Acceptable answer(s)	Guidance	Max mks
Q12	1 mark each of the following, to a maximum of 4 marks: a) lightens the weight of the skull/site for heat exchange/site for mucus production (1) b) warm/moisten inhaled air (1) c) seals entrance to the larynx during swallowing (1) d) regulates air flow into respiratory tract/prevents objects other than gas entering respiratory tract/houses vocal ligaments to produce sound (1)	Similar wording / terminology acceptable	4

Q13	Explain two functions of the distal convoluted tubule in the kidney. (4 marks)		
Q13	Acceptable answer(s)	Guidance	Max mks
Q13	1 mark each for the function and 1 mark for a linked explanation, to a maximum of 4 marks: <ul style="list-style-type: none"> Regulates (Extracellular) fluid volume (1) by reabsorbing sodium and secreting potassium (1) Regulates acid/base balance (1) by the excretion of hydrogen (ions) (1) 	Similar wording / terminology acceptable Maximum of 2 marks each function	4

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Q14	Name three structures sperm pass through after production in the testes of a mammal. (3 marks)		
Q14	Acceptable answer(s)	Guidance	Max mks
Q14	1 mark each for any of the following, to a maximum of 3 marks: <ul style="list-style-type: none"> • Epididymis (1) • Vas deferens/deferent duct/ductus deferens (1) • Urethra/penis (1) 		3

Q15	State four anatomical features of the skeleton of a snake that are different to a cat. (4 marks)		
Q15	Acceptable answer(s)	Guidance	Max mks
Q15	1 mark each for any of the following, to a maximum of 4 marks: <ul style="list-style-type: none"> • Kinetic skull (1) • No thoracic limbs (1) • No sternum (1) • Many more vertebrae (150->400) (1) • Vestigial pelvic limbs/spurs (1) • All vertebrae have a rib (1) Any other acceptable answer	Similar wording / terminology acceptable No not accept the opposite answer if one answer given e.g. snake has no sternum cat has a sternum	4

Q16	Discuss the functions of skin, hair and associated glands in a cat. (12 marks)		
Q16	Acceptable answer(s)	Guidance	Max mks
Q16	<p>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.</p> <p>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. Attempted to provide some explanations but may not all be relevant.</p> <p>Band 2 (5-8 marks) The candidate considered a range of aspects of the topic with a developed discussion showing clear knowledge and understanding with some gaps. Technical terminology is used frequently.</p> <p>To access the higher marks in the band Discussion is supported with relevant explanation(s) with clear and valid links to the topic.</p> <p>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.</p> <p>To access the higher marks in the band The discussion is supported using a broad range of highly relevant links to the topic with clear and detailed justifications</p>	<p>Indicative content</p> <p>The role of skin/hair/glands (integument) to include:</p> <ul style="list-style-type: none"> • Protection - underlying structures (physical barrier/keratinised areas/claws/pigmented areas • Sensory - nerve endings/tactile hairs • Secretion - glands/pheromones • Vitamin D production • Fat Storage • Thermoregulation - Hair • Communication - scents & pheromones <p>Types of integument to include:</p> <ul style="list-style-type: none"> • Skin • Hair • Footpads • Claws • Glands: sweat, sebaceous, mammary 	12