

0171-510 March 2022

Level 3 Advanced Technical Extended Diploma in Agriculture (Livestock)

Level 3 Agriculture – Theory exam (2)

Q	Acceptable answer(s)	Guidance	Max marks
1	<p>State the two main parts of the central nervous system in livestock. (2 marks)</p> <p>Answer</p> <ul style="list-style-type: none"> • Brain (1) • Spinal Cord (1) 	<p>1 mark each</p> <p>Do not accept just spine</p>	2
2	<p>State one function of each of the following parts of the reproductive systems.</p> <p>a) Testicles. (1 mark) b) Epididymis. (1 mark) c) Vas Deferens. (1 mark) d) Oviduct. (1 mark) e) Ovaries. (1 mark) f) Uterus. (1 mark)</p> <p>Answer</p> <p>a) Testicles</p> <ul style="list-style-type: none"> • To produce semen • To produce Testosterone <p>b) Epididymis</p> <ul style="list-style-type: none"> • To store sperm <p>c) Vas Deferens</p> <ul style="list-style-type: none"> • To transport spermatic fluid/semen <p>d) Oviduct</p> <ul style="list-style-type: none"> • To transport eggs/ovum <p>e) Ovaries</p> <ul style="list-style-type: none"> • To produce eggs/ovum • Producing oestrogen • Holds eggs <p>f) Uterus</p> <ul style="list-style-type: none"> • To grow the foetus/embryo 	<p>1 mark each</p>	6

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3	<p>List four hormones involved in the oestrus cycle. (4 marks)</p> <p>Answer</p> <ul style="list-style-type: none"> • Follicle Stimulating Hormone (FSH) • Luteinising Hormone (LH) • Progesterone • Oestrogen 	<p>1 mark each</p> <p>Accept abbreviations – FSH and LH</p>	4
4	<p>Explain how sexed semen can improve a dairy farmer's income. (4 marks)</p> <p>Answer</p> <p>Breed more high quality heifer calves from better cows (1) and therefore speed up genetic improvement. (1) Meaning that lower quality cows can be bred to beef bulls (1) and therefore improve income from excess calves (1).</p>	<p>Up to 4 marks</p> <p>Accept any other suitable answer</p>	4
5	<p>List four potential home-grown plant-based sources of protein in a ruminant's diet. (4 marks)</p> <p>Answer</p> <ul style="list-style-type: none"> • Red clover • White clover • Lucerne • Peas • Beans • Oilseeds • Lupins • Silage (Grass) 	<p>1 mark for each</p> <p>Accept clover as an answer by itself.</p> <p>Marker should accept red clover and white clover for 1 mark each but not clover by itself for a 3rd mark.</p> <p>Accept any other suitable answer</p> <p>Do not accept Maize or whole crop silage</p>	4

6	<p>Explain two reasons why it is important to follow the recommended dose rate accurately when administering antibiotics and anthelmintics. (4 marks)</p> <p>Answer</p> <ul style="list-style-type: none"> • Underdosing / overdosing (1) causes resistance of pathogens (1) / reduces the effectiveness of the medicines long term (1). • Underdosing (1) this could lead to slow recovery of the animal (1) • Overuse of medicines are not cost effective (1) because of the waste of medicine (1) 	<p>Up to 2 marks each, to maximum of 4 marks</p> <p>Accept any other suitable answer</p>	4
7	<p>List four signs of Hypocalcaemia in a dairy cow. (4 marks)</p> <p>Answer</p> <ul style="list-style-type: none"> • Staggering • Shivering /tremors • Recumbent/Down • S shaped neck • Dry faeces • Cold ears / Low temperature 	<p>1 mark each</p> <p>Accept any other suitable answer</p> <p>Do not accept loss of appetite</p>	4
8	<p>List the four strokes of the diesel four stroke cycle. (4 marks)</p> <p>Answer</p> <ul style="list-style-type: none"> • Induction • Compression • Power • Exhaust 	<p>1 mark each</p> <p>Accept in any order</p>	4
9	<p>Define the term 'Load Centre' in relation to Rough Terrain Telescopic Forklifts (RTFL). (2 marks)</p> <p>Answer</p> <p>The distance from the headstock/face of the forks (1) to the centre of the load (1)</p>	<p>Up to 2 marks</p> <p>Accept any other suitable answer</p>	2

10	<p>Describe two ways in which an All-Terrain Vehicle (ATV) should be manoeuvred on sloping land. (4 marks)</p> <p>Answer</p> <ul style="list-style-type: none"> • Active riding (1) moving body in relation to slope (1) • Selection of lower gears (1) to reduce risk of runaway (1) • Use of 4-wheel drive on slopes and slippery ground (1) for better traction (1) • Suitable engine speed (1) to reduce risk of stalling or excess speed (1) • Drive up down the slope (1) to reduce risk of rolling (1) • Ensure the ATV is loaded correctly (1) to avoid load moving in transit (1) • Plan the most suitable route to go (1) to avoid wet and rough land) (1) 	<p>Up to 2 marks each, to maximum of 4 marks</p> <p>Accept any other suitable answer</p> <p>Do not accept pre-checks/preparation</p>	4
11	<p>State two legal methods of disposing of farm animal carcasses. (2 marks)</p> <p>Answer</p> <ul style="list-style-type: none"> • On farm licensed incineration • Licensed disposal company/ The National Fallen Stock Scheme (NFSCO)/renderer/knackerman • Hunt kennels • Maggot farm • Burial with DEFRA authorisation 	<p>1 mark each</p> <p>Accept any other suitable answer</p> <p>Candidates must state that the incinerator is licensed.</p> <p>Accept NFSCO as a suitable answer</p>	2
12	<p>Explain what is meant by 'farm organic waste'. (2 marks)</p> <p>Answer</p> <p>Waste that is biodegradable/breaks down (1) and comes from plants / animals / contains carbon (1)</p>	<p>Up to 2 marks</p> <p>Accept any other suitable answer</p>	2

13	<p>For each of the following, describe the correct storage and disposal, in accordance with relevant legislation.</p> <p>a) Needles (2 marks) b) Medicine bottles (2 marks) c) Pesticide containers (2 marks)</p> <p>Answer</p> <p>a) Needles</p> <ul style="list-style-type: none"> - Storage: In a locked/lockable container (1) - Disposal: Should be put in a sharps container (1) returned to the vet / licensed waste disposal(1) <p>b) Medicine bottles</p> <ul style="list-style-type: none"> - Storage: In secure storage (1)/ at the correct temperature (1) - Disposal: disposed of to an appropriate collector (1) returned to vet (1) / licensed waste disposal (1) <p>c) Pesticide containers</p> <ul style="list-style-type: none"> - Storage: In a locked/bunded/fireproof/signed container/store (1) - Disposal: should be triple rinsed (1) / stored securely (1) / have a licensed waste disposal contract (1) 	<p>Up to 2 marks each – 1 mark for storage, 1 mark for disposal</p> <p>Accept any other suitable answer</p>	6
14	<p>Discuss how the digestive processes in both cattle and pigs will affect their dietary requirements. (12 marks)</p> <p>Band 1 (1 – 4 marks) Limited understanding of key topics. Answer is mainly descriptive with little evidence of discussion, mostly lacking in detail. Few or no specialist terms are used. Answer may be disorganised or ambiguous. To access the higher marks in the band, discussion is supported with limited examples.</p> <p>Band 2 (5 – 8 marks) Good understanding of key topics. Evidence of developed discussion but may be lacking in some detail. There will be some use of specialist terms, although they may not always be used correctly. The information is presented mostly in a structured format. To access the higher marks in the band, discussion is supported with a range of relevant examples with clear links to the topic.</p> <p>Band 3 (9 – 12 marks) Thorough and consistent understanding of key topics. Evidence of well-developed discussion. Specialist terms are used correctly and appropriately. Information is presented in a logical and structured format. To access</p>	<p>Cattle</p> <ul style="list-style-type: none"> • Herbivore • Bacterial breakdown of food and fibre • Rumen fermentation of food • Reticulum further microbial fermentation • Omasum • Abomasum • Chewing the cud • Breaking down cellulose • Milk in young goes straight to abomasum • Roughage based diet • Excess cereals can cause build-up of gas 	

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	<p>the higher marks in the band, a broad range of examples are used with clear and highly relevant links to the topic.</p>	<p>Pigs</p> <ul style="list-style-type: none">• Omnivore• Acidic breakdown• Monogastric• Eat both animal and plant• Difficulty breaking down cellulose• Grain based diet• Efficient convertors of feed.	
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