

0171-506/006 - Level 3 Agriculture-Theory exam (2) (Mixed Farming) – March 2018

0171-32 Level 3 Advanced Technical Extended Diploma in Agriculture (720)

Q	Acceptable answer(s)	Guidance	Max mks
<p>1a & b</p>	<p>a) 1 mark for each machine from any of the following – up to 2 marks</p> <ul style="list-style-type: none"> • Cutting • Tedding • Wind row/rowing up • Baling <p>b) 1 mark for each function from any of the following – up to 2 marks</p> <ul style="list-style-type: none"> • Cutting- mower conditioner, cuts grass and bruises to aid drying (1) • Tedding- lifts crop to get air into it for drying (1) • Wind row/rowing up- puts several rows into one to aid baling efficiency (1) • Baling- compresses and contains crop for transport and storage (1) 	<p>Accept any other relevant answers</p>	<p>4</p>
<p>2</p>	<p>2 marks for each advantage and disadvantage from any of the following; maximum 8 marks</p> <p><u>Advantages</u></p> <ul style="list-style-type: none"> • Low aerobic spoilage (1), no large clamp with face exposed, open bales as you use them. (1) • Flexibility to cut at optimum cutting date (1) no need to fill a large clamp, can make smaller amounts (1) • Can target quality to livestock needs (1) easier to have several different qualities of silage (1) • Flexibility for storing surplus grass, (1) not restricted by clamp size and position (1) 	<p>Accept any other relevant answers</p>	<p>8</p>

	<ul style="list-style-type: none"> • Low dry matter loss during production and storage (1), as sealed promptly in field, keeping moisture in and preventing further drying (1) • Limited capital investment (1) as low transport and storage costs (1) <p><u>Disadvantages</u></p> <ul style="list-style-type: none"> • Not suitable for wet silage(1), water cannot run out (1) • Labour intensive at feeding out (1), each bale has to be unwrapped and plastic taken away (1) • Risk of variability between bales (1), variability of small amounts in a clamp has less effect (1) • Prone to damage(1), covering is easily holed by machines, birds or vermin (1) • Plastic disposal(1) high cost, cannot be burnt (1) 		
3	<p>1 mark for each factor from any of the following; maximum four marks</p> <ul style="list-style-type: none"> • If cut early will give higher D value as crop is more leaf and less stalk (1) • If cut late will give a lower D value as crop is more stalk and less leaf (1) • Different varieties of grass have different values (1) • Amount of leaf, more leaf= higher D value (1) • Amount of clover in sward, more clover= more leaf= higher D value (1) • Length of time since last grazing or cutting, longer length = lower D value (1) 	Accept any other relevant answers	4
4	<p>1 mark for each quality from any of the following; maximum 4 marks</p> <ul style="list-style-type: none"> • Cold and wet tolerant grass • Good recovery from poaching • Poor resistance to hard grazing. • Good for horse hay- produces soft hay • Grows early in Spring • Generally not as high yielding as Perennial Ryegrass 	Accept any other relevant answers	4
5a and b	<p>1 mark for each method, maximum of two marks</p> <ul style="list-style-type: none"> • Mechanical • Chemical • Manual <p>a) 2 marks per explanation, 1 mark per point made</p>	Accept any other relevant answers	4

	<ul style="list-style-type: none"> • Mechanical – no chemicals, less risk of pollution, meets organic requirements • Chemical – a longer lasting method, more selective • Manual – very selective, less equipment required, environmentally friendly 		
6	<p>1 mark for each item from any of the following; maximum 4 marks</p> <ul style="list-style-type: none"> • Head protection • Eye protection • Protective footwear • Gloves • Non snag outer clothing 	Accept any other relevant answers	4
7	<p>1 mark for each reason from any of the following; maximum 4 marks</p> <ul style="list-style-type: none"> • Improves stability and safety, uneven pressures may cause tipping over • Reduces fuel consumption, improves efficiency by minimising rolling resistance • Improves operator comfort, tyres which are too hard provide a harsh ride • Promotes longer life of tyres, less tyre wear • Less punctures and blow outs, tyres too soft or hard are more likely to get these • Improves traction and therefore more efficient 	Accept any other relevant answers	4
8	<p>1 mark for each precaution from any of the following; maximum of 4 marks</p> <ul style="list-style-type: none"> • Use wheel chocks • Park across steep slopes ensuring wheels are turned up hill • Apply the handbrake • Operators dismounts on uphill side, when parked across slope 	Accept any other relevant answers	4
9	<p>1 mark for each cause explained from any of the following; maximum three marks</p> <ul style="list-style-type: none"> • Turning at speed- moves weight to one side • Operating with a soft tyre- moves weight to one side • Uneven ground- can raise or lower part of the vehicle 	Accept any other relevant answers	3

	<ul style="list-style-type: none"> • Turning on a slope- can move weight down the hill • Carrying load too high- reduces safe loading capacity • Load not centrally placed- moves centre of gravity to side • Articulation under load- moves load in relation to counter balance weight • Live loads- load may move quickly, hence moving centre of gravity 		
10a & b	<p>a) 1 mark for:</p> <p>Locks both wheels on an axle together so they turn at the same speed to maintain traction.</p> <p>b) 1 mark for:</p> <p>To improve traction when one wheel is spinning and the other stationary</p>	Accept any other relevant answers	2
11	<p>1 mark each max 3 marks</p> <ul style="list-style-type: none"> • Where possible choose the less steep part of the slope to travel up • Travel up and down the slope rather than across to prevent over turn • Use correct tyre pressures to prevent overturn • Keep speed down, especially on uneven ground • Wear correct PPE – crash helmet, steel toe capped boots to protect the operator • Make sure operator has had correct and sufficient training • Correct weight distribution of load and operator to prevent overturn • Load secure and fastened to prevent overturn • Ensure ground conditions are suitable before travelling 	Accept any other relevant answers	3
12	<p>1 mark for each answer from any 4 of the following; maximum 4 marks</p> <ul style="list-style-type: none"> • By using the correct tyre pressures • By avoiding over revving the engine • By planning lifting and carrying to minimise distance travelled • By keeping the vehicle well maintained including filters • By using appropriate gears 	Accept any other relevant answers	4

13	<p>Band 1 (1-4 marks) Limited discussion of damage that may have occurred and how the RTFL should be operated. There are minimal suggestions and little justification. Answer may be disorganised and ambiguous.</p> <p>Band 2 (5-8 marks) Fair discussion of damage that may have occurred and how the RTFL should be operated. There are some suggestions and justification. The answer is presented in a fairly structured format.</p> <p>Band 3 (9-12 marks) Detailed discussion of damage that may have occurred and how the RTFL should be operated. There are a wide range of suggestions and justification. The answer is presented in a well-structured format.</p>	<p>Indicative content</p> <ul style="list-style-type: none"> • Operating in drier areas of the field • Speed • Avoiding wheel spin • Minimising traffic • Lay a track • Subsoiling • Partial reseed • Complete reseed • Compaction • Ruts <p><i>For no awardable content, award 0 marks.</i></p>	12