

# **Level 2 Technical Certificate in Agriculture (0171-20)**

**Sample External Test**

Duration: 2 hours


SAMPLE

No	Test spec ref	Question	Key
1	203 1.1 AO1	Which one of the following is a cereal crop?	
		a. Barley. b. Linseed. c. Rye grass. d. Oil seed rape.	A
2	203 1.1 AO1	Which one of the following is a legume?	
		a. Kale. b. Maize. c. Clover. d. Wheat.	C
3	203 1.2 AO1	Which type of crop is <b>most</b> often used for bread making?	
		a. Rolled oats. b. Durum wheat. c. Milling wheat. d. Malting barley.	C
4	203 1.2 AO2	Which of the following are benefits of crop rotation for production?	
		1. Reduces weed and disease build-up. 2. Enhances machinery life. 3. Changes soil type. 4. Contributes to pest control.	
		a. 1 and 2. b. 2 and 3. c. 3 and 4. d. 1 and 4.	D
5	203 1.2 AO2	<b>Statement 1</b> A clay soil will drain easily compared to a sandy soil.  <b>Statement 2</b> A clay soil will warm up slowly compared to a sandy soil.  Which one of the following is correct for the above statements?	

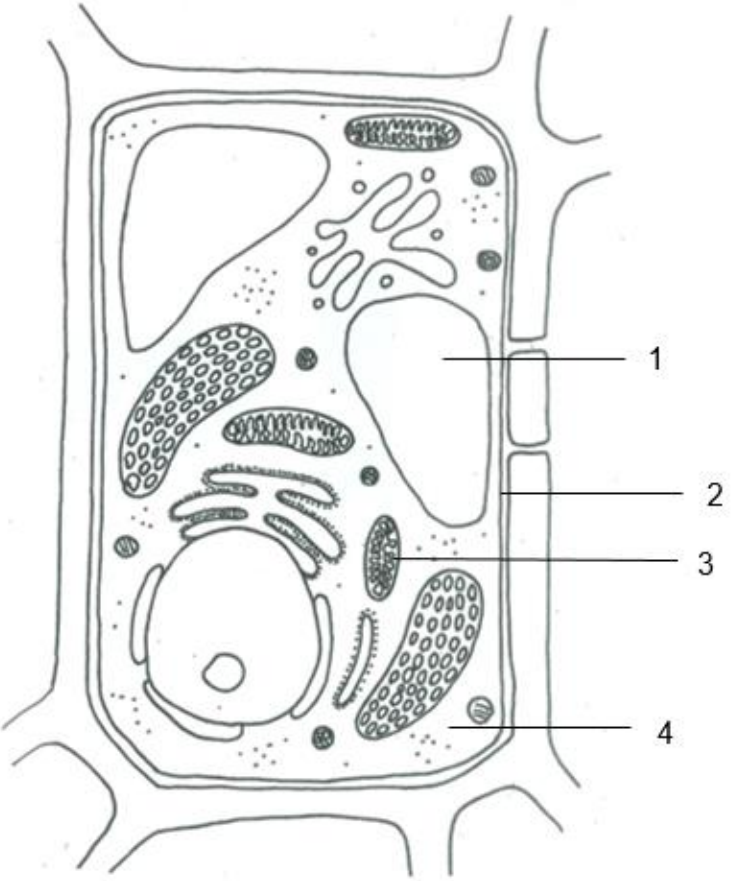
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a.	True	True																
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6	203 4.1 AO1	Which of the following is a <b>major</b> nutrient for crops?																
		a. Boron (B). b. Copper (Cu). c. Potassium (K). d. Magnesium (Mg).	C															
7	203 4.3 AO2	Why is Personal Protective Equipment required when using a crop sprayer?																
		a. To improve efficiency of operation. b. To increase speed of task completion. c. To protect the operator from contamination. d. To protect the environment from contamination.	C															
8	203 4.3 AO2	Why are compound fertilisers used in place of straight fertilisers?																
		a. To reduce soil organic matter. b. To improve the texture of the soil. c. To improve the structure of the soil. d. To reduce number of applications required.	D															
9	203 4.3 AO1	Which one of the following is a method of cultural weed control in a cereal crop?																
		a. Irrigation. b. Harrowing. c. Manure spreading. d. Chemical application.	B															
10	203 4.2 AO2	Which of the following is the <b>main</b> benefit of using a legume in a crop rotation?																

No	Test spec ref	Question	Key
		a. Adding potash to the soil. b. Adding sulphur to the soil. c. Adding nitrogen to the soil. d. Adding phosphate to the soil.	C
<p><b>Scenario 1</b> – Relates to Questions 11 – 12</p> <p>The water in a stream which runs through the farm you work on has been tested. The test results indicate pollution originating from the farm. The farm has a dairy, sheep and a large arable enterprise. Liquid fertiliser is stored in unbunded tanks. Cows are on a slurry-based system, fed grass clamp silage and milk is stored in an old bulk tank.</p>			
11	AO4 203 4.2, 204 1.3	Which source of pollution is likely to have the <b>greatest</b> damaging effect on a water course?	Scenario 1
		a. Leakage of milk. b. Leakage of slurry. c. Leakage of fertiliser. d. Leakage of silage effluent.	A
		In order to answer the above item, candidates would need to demonstrate the following- <b>Knowledge:</b> Types of pollution, fertiliser types and storage methods. <b>Understanding:</b> Effects of pollution, risks of pollution, properties of fertilisers (e.g. liquids vs solids). <b>Evaluation:</b> Consideration of scenario parameters and how pollutants could have entered the water courses and evaluation of the severity of pollution caused by different substances.	
12	AO4 206 1.1/1.3, 203 4.3	Which one of the following is the <b>most</b> severe effect of this farm pollution in the water course?	Scenario 1
		a. Removes CO <sub>2</sub> which results in death of plants in the water. b. Increases nitrate levels which results in water organism growth. c. Increase phosphate levels which results in water animal growth. d. Depletes O <sub>2</sub> levels in the water which results in death of organisms.	D

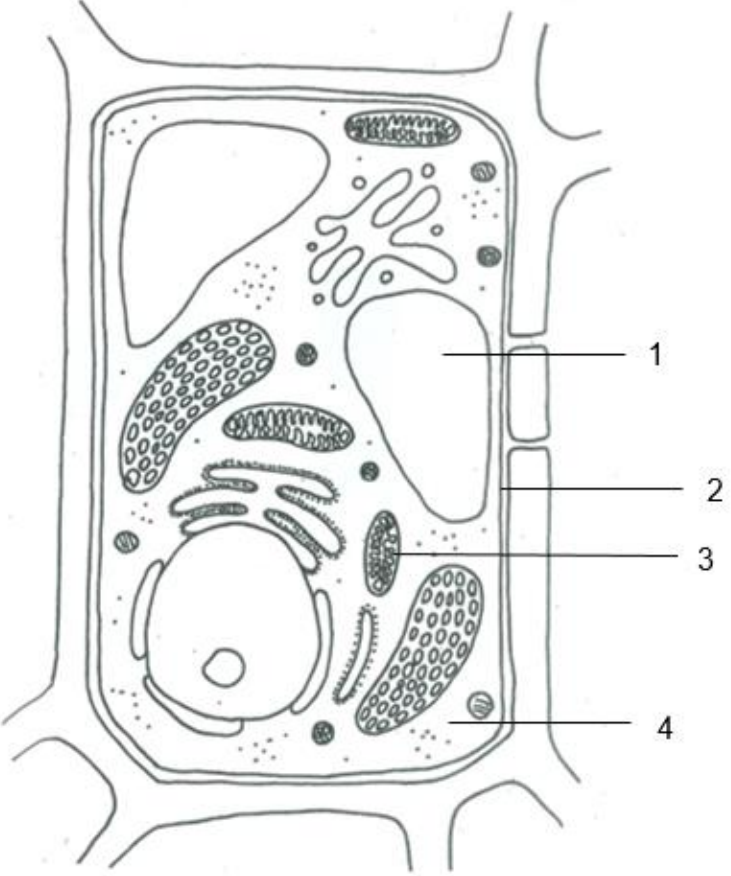
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		<p>In order to answer the above item, candidates would need to demonstrate the following-</p> <p><b>Knowledge:</b> Types of pollution, gases needed by plant and animals for growth (i.e. eutrophication), chemical symbols for elements.</p> <p><b>Understanding:</b> Effects of pollution, risks of pollution, recognising the effects of depletion of oxygen.</p> <p><b>Analysis:</b> Consideration of scenario parameters and effects of pollutants on the organisms within the water course.</p> <p><b>Evaluation:</b> Evaluation of the severity of pollutions impacts on the environment and water born organisms.</p>																
13	203 4.2 AO2	<p><b>Statement 1</b> Burying chopped straw after harvesting a wheat crop improves soil organic matter.</p> <p><b>Statement 2</b> Burying chopped straw after harvesting a wheat crop increases earthworm activity in the soil.</p> <p>Which one of the following is correct for the above statements?</p>																
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14	203 1.1 AO2	Which one of the following is the <b>most</b> likely reason for growing a green cover crop?																
		<p>a. To improve cultivation effectiveness.</p> <p>b. To feed livestock over the winter period.</p> <p>c. To reduce nutrient loss over the winter period.</p> <p>d. To reduce the number of diseases in the following crop.</p>	C															
15	203 1.2 AO2	Which one of the following is <b>mainly</b> used as a forage crop?																
		<p>a. Maize.</p> <p>b. Potatoes.</p> <p>c. Winter wheat.</p> <p>d. Oil seed rape.</p>	A															

No	Test spec ref	Question	Key															
16	204 1.1 A01	<p><b>Statement 1</b> Sheep can be used for meat and dairy production.</p> <p><b>Statement 2</b> Ducks can be used for meat and egg production.</p> <p>Which one of the following is correct for the above statements?</p>																
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17	204 1.1 A02	<p>Which factors are the <b>most</b> important when choosing cattle breeds for an extensive farming system?</p> <ol style="list-style-type: none"> <li>1. Increasing profitability.</li> <li>2. Reducing the number of parasites.</li> <li>3. Reducing disease in the animals.</li> <li>4. Ensuring they can cope with changing weather.</li> </ol>																
		<ol style="list-style-type: none"> <li>a. 1 and 2.</li> <li>b. 2 and 3.</li> <li>c. 3 and 4.</li> <li>d. 1 and 4.</li> </ol>	D															
18	204 1.2 A01	<p>What breed of cattle is indicated in the image?</p> 																
		<ol style="list-style-type: none"> <li>a. Jersey.</li> <li>b. Ayrshire.</li> <li>c. Friesian.</li> <li>d. Limousin.</li> </ol>	C															
19	204 1.2 A02	<p>What is the <b>main</b> reason a terminal sire (e.g. Texel) would be used in commercial sheep production?</p>																

No	Test spec ref	Question	Key
		a. To improve the wool quality. b. To increase milk yield from the ewe. c. To increase the number of lambs born per ewe. d. To improve the carcass quality of finished lambs.	D
20	204 1.2 AO2	Which breeds are bred to produce the mule cross bred sheep?	
		a. Rouge x Texel. b. Charollais x Suffolk. c. North country Cheviot x Texel. d. Blue faced Leicester x Swaledale.	D
21	204 1.3 AO2	Why is a sandy soil type most appropriate for an outdoor pig production system?	
		a. To provide free drainage. b. To promote weed control. c. To reduce disease in animals. d. To reduce the presence of pests.	A
22	204 3.1 AO1	Which organisation publishes the Codes of Recommendations for the Welfare of Livestock?	
		a. NFU. b. HSE. c. RSPCA. d. DEFRA.	D
23	204 3.4 AO1	Which one of the following is an example of a zoonotic disease?	
		a. Footrot. b. Milk Fever. c. Ringworm. d. Digital Dermatitis.	C
24	AO4 204 1.1/1.3, 206 2.3, 207 3.2	Which one of the following identifies the <b>main</b> advantage of January lambing rather than Easter lambing?	
		a. Low housing costs due to the likely weather conditions. b. Low production costs through minimal concentrate use. c. High market price due to high numbers of home produced lamb. d. High market price due to low numbers of home produced lamb.	D

No	Test spec ref	Question	Key
		<p>In order to answer the above item, candidates would need to demonstrate the following-</p> <p><b>Knowledge:</b> Market patterns, factors influencing market numbers, feeding system terminology.</p> <p><b>Understanding:</b> Supply and demand curve, implications on cost of production, effects of weather on production.</p> <p><b>Analysis:</b> Analysis of factors influencing market and their relative importance, price in relation to quantity of supply.</p> <p><b>Evaluation:</b> Choosing the system to obtain the best price and maximise profits based on the parameters in the question options and scenario.</p>	
25	206 1.1 AO1	<p>What plant cell structure is indicated by the number 1 on the diagram?</p> 	
		<p>a. Nucleus. b. Vacuole. c. Cytoplasm. d. Cell membrane.</p>	B

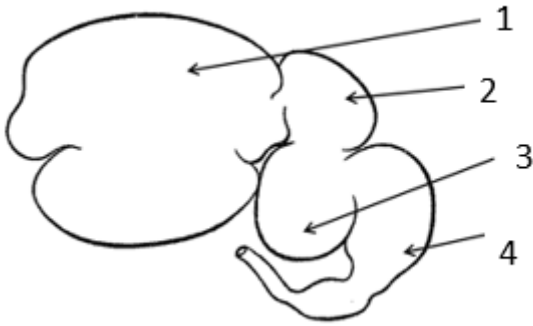


No	Test spec ref	Question	Key
26	206 1.1 A01	<p>What plant cell structure is indicated by the number 2 on the diagram?</p> 	
		<p>a. Cell Wall. b. Ribosome. c. Chloroplast. d. Mitochondria.</p>	A
27	206 1.1 A02	<p>'Moisture is carried from plant roots to pores on the underside of leaves, where it changes to vapour and is released to the atmosphere.'</p> <p>Which plant cell process is defined in the statement above?</p>	
		<p>a. Diffusion. b. Respiration. c. Transpiration. d. Translocation.</p>	C


No	Test spec ref	Question	Key															
28	206 1.2 AO2	<p><b>Statement 1</b> An ephemeral plant has several lifecycles in one season.</p> <p><b>Statement 2</b> An annual plant completes its lifecycle in two years.</p> <p>Which one of the following is correct for the above statements?</p>																
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29	206 1.3 AO1	What is the <b>main</b> function of plant roots?																
		<p>a. To fight diseases.</p> <p>b. To aid germination.</p> <p>c. To anchor the plant.</p> <p>d. To carry out photosynthesis.</p>	C															
30	206 1.3 AO2	How do very high moisture levels in the soil affect seed germination and survival?																
		<p>a. Oxygen levels in the soil will be raised.</p> <p>b. Waterlogged soils will cause seed rotting.</p> <p>c. Moist soils will promote early germination.</p> <p>d. Moist soils will have a higher nutrient level.</p>	B															
31	206 2.1 AO1	The pancreas is an organ of which of the following animal body systems?																
		<p>a. Nervous.</p> <p>b. Digestive.</p> <p>c. Circulatory.</p> <p>d. Respiratory.</p>	B															
32	206 2.1 AO1	What is the function of the cytoplasm in animal cells?																

No	Test spec ref	Question	Key
		a. To maintain cell structure. b. For controlling cell activity. c. For moving the cell around. d. To provide energy for the cell.	A
33	206 2.1 AO2	Which cell structures are found in <b>both</b> animal cells <b>and</b> plant cells?  1 Nucleus. 2 Vacuole. 3 Chloroplast. 4 Mitochondria.	
		a. 1 and 2. b. 2 and 3. c. 3 and 4. d. 1 and 4.	D
34	206 2.2 AO1	'The process or period of developing inside the womb between conception and birth.'  Which animal breeding process is defined in the statement above?	
		a. Lactation. b. Gestation. c. Incubation. d. Parturition.	B
<p><b>Scenario 2</b> – Relates to Questions 35 – 36</p> <p>Grass growth has dropped significantly in one particular field on a livestock farm you are working on. The farm manager has taken a soil sample for analysis and the results are as follows:</p> <ul style="list-style-type: none"> <li>• pH level of 4.5</li> <li>• Phosphate indices of 1</li> <li>• Potash indices of 4</li> </ul>			
35	AO4 203 1.2/4.1, 204 1.3, 206 1.3	Based on the soil analysis results what is the <b>most</b> likely type of soil type in the field?	Scenario 2
		a. A heavy clay soil with mild alkalinity. b. A heavy clay soil with strong acidity. c. A limestone/chalk soil with mild alkalinity. d. A limestone/chalk soil with strong acidity.	B

No	Test spec ref	Question	Key															
		<p>In order to answer the above item, candidates would need to demonstrate the following-</p> <p><b>Knowledge:</b> Soil types, soil nutrients, pH scale, impact of pH levels on growth, impact of soil type on pH and other nutrients.</p> <p><b>Analysis:</b> Analysing the results of the soil test and relating to soil type and linkage to cropping (i.e. grass), analysis of most likely impact of the results of the pH testing and indices on associated soil type, acidity etc.</p>																
36	AO4 203 1.2/4.1/4.3, 204 1.3, 206 1.3	What type of material should be applied to correct the pH in this scenario?	Scenario 2															
		<p>a. Lime. b. Potash. c. Nitrogen. d. Phosphate.</p>	A															
		<p>In order to answer the above item, candidates would need to demonstrate the following-</p> <p><b>Knowledge:</b> Nutrients involved in crop production, pH levels.</p> <p><b>Understanding:</b> What pH indicates and implications in soil, differing properties of nutrients and their applications.</p> <p><b>Analysis:</b> pH from soil sample in scenario and linking to corrective nutrient application.</p> <p><b>Evaluation:</b> Evaluation of which of the crop nutrients would be best suited to correcting the pH issue presented.</p>																
37	206 2.2 AO2	Which of the following correctly identifies the gestation periods of cattle and pigs?																
		<table border="1"> <thead> <tr> <th></th> <th>Cattle</th> <th>Pigs</th> </tr> </thead> <tbody> <tr> <td>a.</td> <td>280 days</td> <td>214 days</td> </tr> <tr> <td>b.</td> <td>180 days</td> <td>114 days</td> </tr> <tr> <td>c.</td> <td>280 days</td> <td>114 days</td> </tr> <tr> <td>d.</td> <td>180 days</td> <td>214 days</td> </tr> </tbody> </table>		Cattle	Pigs	a.	280 days	214 days	b.	180 days	114 days	c.	280 days	114 days	d.	180 days	214 days	C
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38	206 2.3 AO2	<p>Which of the following options identifies the sequence of a ruminant stomach structure correctly?</p> 																										
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39	207 1.1 AO1	<p>Which one of the following defines the role of a tenant farmer?</p>																										
		<p>a. A farmer that owns the land. b. A farmer that rents their land out. c. A farmer that rents land from others. d. A farmer that provides land for others.</p>	C																									
40	207 1.1 AO1	<p><b>Statement 1</b> Seasonal workers are employed to work in specific roles at particular times of the year.</p> <p><b>Statement 2</b> Apprentices are paid a wage and are allowed time away from work to study.</p> <p>Which one of the following is correct for the above statements?</p>																										
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41	207 1.2 AO1	Which from the following are the most likely first jobs for an agricultural student following level two education?  1. Head of estate. 2. Tractor driver. 3. Assistant stockperson. 4. Senior machinery technician.																
		a. 1 and 2. b. 2 and 3. c. 3 and 4. d. 1 and 4.	B															
42	207 3.1 AO1	What type of IT application would be <b>best</b> suited to calculating yearly profits?																
		a. Database. b. Spreadsheet. c. Word document. d. Electronic record card.	B															
43	207 3.2 AO1	<b>Statement 1</b> Increased demand for a product will most likely result in an increased price.  <b>Statement 2</b> Increased supply of a product will most likely result in an increased price.  Which one of the following is correct for the above statements?																
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44	207 3.2 AO2	How are profits calculated?																
		a. Income minus costs. b. Overheads plus income. c. Income divided by time. d. Costs divided by income.	A															

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45	207 3.3 AO1	Which one of the following is a legal requirement for use of cattle passport systems on a farm?	
		a. Costing stock feed. b. Controlling stock levels. c. Monitoring cattle growth. d. Tracking cattle movements.	D
46	207 3.3/3.1 AO1	 <p>Which type of agricultural technology is indicated by the image?</p>	
		a. EID for livestock. b. GPS for machinery. c. Heat monitoring for livestock. d. Service history recording for machinery.	A
47	207 3.3 AO2	What is the <b>most</b> likely use of aerial drones on a farm?	
		a. Eliminating pests. b. Weighing livestock. c. Calibrating equipment. d. Monitoring growing crops.	D
<p><b>Scenario 3</b> – Relates to Questions 48 – 50</p> <p>A complaint has been made to a Government Department by a member of the public concerning the welfare of cattle on a farm on which you work.</p> <p>In one of the fields there did not appear to be any water, some of the adult cattle looked to be of a low weight and in poor condition.</p>			
48	AO4 204 3.1 - 3.4	What is the <b>most</b> likely cause of poor cattle condition in this case?	Scenario 3

No	Test spec ref	Question	Key
		a. Brucellosis. b. Ringworm. c. Toxoplasmosis. d. Digital dermatitis.	D
		In order to answer the above item, candidates would need to demonstrate the following- <b>Knowledge:</b> Animal conditions and associated symptoms, basic anatomy/animal physiology. <b>Understanding:</b> Implications of diseases on visible condition in adult cattle. <b>Analysis:</b> Matching potential cause to symptoms presented in scenario. <b>Evaluation:</b> evaluation of the options and consideration of which is the most likely under the parameters given.	
49	AO4 204 3.1 - 3.4, 207 1.1	What aspects of the government animal welfare codes are being adhered to in this case?  1. Suitable diet. 2. Protected from pain suffering and disease. 3. Suitable environment. 4. Exhibiting normal behaviour patterns.	Scenario 3
		a. 1 and 2. b. 2 and 3. c. 3 and 4. d. 1 and 4.	C
		In order to answer the above item, candidates would need to demonstrate the following- <b>Knowledge:</b> Animal welfare codes. <b>Understanding:</b> Implications of the codes for animal production, what not meeting the codes looks like in practical terms (e.g. lack of water). <b>Analysis:</b> Consideration of the cattle production situation presented and how each element of links to the welfare codes or not. <b>Evaluation:</b> Selection of the correct options based on the scenario and stem options provided.	
50	204 3.1-3.4, 207 1.1/3.1	A member of the public has made a complaint about the cattle's condition.  What are the <b>most</b> likely implications for the farm following this complaint being reported?	Scenario 3



No	Test spec ref	Question	Key
		a. Inspection by NFU and a possible fine following legal action. b. Inspection by ministry vet and possible changes to caring for livestock. c. Inspection by NFU and possible changes to caring for livestock. d. Inspection by Farm vet and the person who made the complaint.	B
		In order to answer the above item, candidates would need to demonstrate the following- <b>Knowledge:</b> Industry bodies/abbreviations, welfare legislation. <b>Understanding:</b> roles and responsibilities of industry bodies and organisations, implications of welfare legislation breaches, possible sanctions, link between legislation and procedures, link between day to day actions on the farm and the law, responsibilities of farm workers in animal welfare. <b>Analysis:</b> Matching the responsibilities to the bodies and the scenario in the stem. <b>Evaluation:</b> Consideration of the potential breaches, their seriousness and the likely sanctions.	

SAMM