



**0171-521 MARCH 2018**  
**Level 2 Technical Certificate in Agriculture**  
Level 2 Agriculture – Theory Exam

**Thursday 15 March 2018**  
**09:30 – 11:30**

**You should have the following for this examination**

- a multiple-choice answer sheet
- a pen with black or blue ink

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**This question paper is the property of the City and Guilds of London Institute and is to be returned after the examination.**

**Read the following notes before you answer any questions**

- You **must** use a pen with black or blue ink to complete **all** parts of the answer sheet.
- Check that you have the correct answer sheet for the examination.
- Check that your name and candidate details are printed correctly at the top of your answer sheet.
- Inform the invigilator if your name or examination details are not correct.
- Each question shows **four** possible answers (lettered 'a', 'b', 'c' and 'd'); only **one** is correct.
- Decide which **one** is correct and mark your answer on the **answer sheet** with your pen.

For example if you decide 'a' is correct, mark your answer like this

101	<input checked="" type="radio"/>	<input type="radio"/> b	<input type="radio"/> c	<input type="radio"/> d
	Cancel	Cancel	Cancel	Cancel

If you want to change your answer, cancel your first choice by filling in the 'cancel' box below the circle like this

101	<input checked="" type="radio"/>	<input type="radio"/> b	<input type="radio"/> c	<input type="radio"/> d
	Cancel	Cancel	Cancel	

Then mark the answer which you have now decided is correct. For example if you now decide 'c' is correct, mark your answer like this

101	<input checked="" type="radio"/>	<input type="radio"/> b	<input checked="" type="radio"/>	<input type="radio"/> d
	Cancel	Cancel	Cancel	

Any other marks on the form may invalidate some of your answers.

- Any calculations or rough working can be done on the question paper.
- Attempt all questions. If you find a question difficult, leave it and return to it later.

**This paper contains 50 questions. Answer them using the 'boxes' numbered 1 to 50 on the answer sheet.**



**Figure 1**

1 What type of cereal crop is shown in Figure 1?

- a Wheat.
- b Barley.
- c Oats.
- d Rye.

2 What type of crop is Short Rotation Coppice (SRC)?

- a Combinable.
- b Forage.
- c Energy.
- d Root.

3 In which one of the following would precision chopped silage **most** commonly be stored?

- a Clamp.
- b Tower.
- c Bales.
- d Bin.

4 When soil is sampled and placed in a soil sample test jar, water is added and the contents shaken then allowed to settle to identify the soil texture.

Starting from the bottom layer, which is the correct order of particle settlement?

- a Organic Matter, Clay, Silt, Sand.
- b Sand, Silt, Clay, Organic Matter.
- c Organic Matter, Silt, Clay, Sand.
- d Sand, Clay, Silt, Organic Matter.

5 Field beans are grown for both animal and human consumption, to provide

- a fats
- b carbohydrate
- c oils
- d protein.

6 What does the topography of a field area describe?

- a Shape and features.
- b Height above sea level.
- c Local weather conditions.
- d Direction in which the land faces.

7 **Statement 1**

Winter wheat is grown on heavier soil types because land work can be completed early and it is easier to harvest.

**Statement 2**

Winter wheat is grown on heavier soil types because of better fertility and potentially higher yield.

Which one of the following is correct for the above statements?

	<b>Statement 1</b>	<b>Statement 2</b>
a	True	True
b	True	False
c	False	True
d	False	False

8 A bag of fertiliser has the following analysis written on the bag: 12:15:20.

Which **two** of the following are **true** about the fertiliser?

- 1 The percentage of Phosphate in this analysis is 15.
- 2 Potash and Nitrogen are the other two nutrients.
- 3 The percentage of Sulphur in this analysis is 12.
- 4 The percentage of Nitrogen in this analysis is 20.

- a 1 and 2.
- b 3 and 4.
- c 1 and 4.
- d 2 and 3.

- 9 What is the nutrient that is produced on the roots of legumes, which is valuable to the next crop which will be grown?
- Boron.
  - Nitrogen.
  - Selenium.
  - Magnesium.



Figure 2

- 10 What task is being undertaken in Figure 2?
- Granular application of fertilisers.
  - Foliar application of fertilisers.
  - Umbilical application of fertilisers.
  - Injection of foliar fertilisers.
- 11 Which one of the following is the correct treatment for crops that are affected by aphids?
- Herbicides.
  - Fungicides.
  - Insecticides.
  - Molluscicides.
- 12 How many nutrients does a straight fertiliser contain?
- 1
  - 2
  - 3
  - 4
- 13 On a bag of ammonium nitrate, the analysis is 34.5%N. How many kilos of Nitrogen is there in one tonne of this fertiliser?
- 34.5
  - 345
  - 3450
  - 34500



Figure 3

- 14 What breed of sheep is shown in Figure 3?
- Texel.
  - Mule.
  - Beltex.
  - Suffolk.
- 15 **Statement 1**  
Early Spring lamb is usually cheaper for customers to buy due to lower numbers of lambs on the market.
- Statement 2**  
As the demand for lambs increase the price in the markets tends to fall.
- Which one of the following is correct for the above statements?
- |   | Statement 1 | Statement 2 |
|---|-------------|-------------|
| a | True        | True        |
| b | True        | False       |
| c | False       | True        |
| d | False       | False       |
- 16 Farm buildings used for semi-intensive beef production would usually need, which **three** of the following?
- Adequate ventilation.
  - Temperature control.
  - Automated feeding.
  - Access to grazing.
  - Medicated feed.
  - Appropriate lighting.
- 1, 4, 6
  - 2, 3, 5
  - 1, 3, 5
  - 2, 4, 6



<https://www.hectare.farm/file/full/livestock>

**Figure 4**

17 What breed of pig is shown in Figure 4?

- a Duroc.
- b Pietrain.
- c Landrace.
- d Tamworth.

18 Newcastle Disease is a disease of which farm animal species?

- a Pigs.
- b Sheep.
- c Cattle.
- d Poultry.

19 Which one of the following is a sign of good health in calves?

- a White scours.
- b Sunken eyes.
- c Moist nose.
- d Dull coat.

20 A calf is clearly ill. It has rapid shallow breathing and a nasal discharge. What disease is the calf **most** likely to be suffering from?

- a Ringworm.
- b Pneumonia.
- c Coccidiosis.
- d Leptospirosis.

21 On a farm, several pens of pigs are found to be very thin and there are examples of fighting within the groups.

Which one of the following is the key welfare need that **must** be addressed by the farmer?

- a Protection from pain, suffering and disease.
- b Allow to exhibit normal behaviour.
- c Provide a suitable environment.
- d Provide a suitable diet.

22 Chloroplasts in the plant cell are a key part of which one of the following processes?

- a Photosynthesis.
- b Transpiration.
- c Respiration.
- d Translocation.

23 Which **two** of the following are examples of Dicotyledons (Dicots)?

- 1 Wheat.
- 2 Oats.
- 3 Swedes.
- 4 Beans.

- a 1 and 2.
- b 2 and 3.
- c 3 and 4.
- d 4 and 1.

24 If moisture is **not** available for plants, what would farm crops do **first**?

- a Wilt.
- b Grow.
- c Die.
- d Flower.

25 By which **two** of the following methods do plants and animals release Carbon into the atmosphere?

- 1 Respiration.
- 2 Osmosis.
- 3 Photosynthesis.
- 4 Decaying organisms.

- a 1 and 2.
- b 2 and 3.
- c 3 and 4.
- d 4 and 1.

26 Which one of the following describes ephemeral plants?

- a Plants that complete their lifecycle in one year.
- b Plants that complete several lifecycles in one year.
- c Plants that complete their lifecycle over two years.
- d Plants that complete their lifecycles over several years.

27 **Statement 1**  
Stem diseases can cause lodging in cereal crops resulting in easier harvesting.

**Statement 2**  
Stem diseases in cereal crops reduces yield but improves quality.

Which one of the following is correct for the above statements?

	Statement 1	Statement 2
a	True	True
b	True	False
c	False	True
d	False	False

28 Which one of the following animal body systems are the ovaries and testes part of?

- a Digestive.
- b Circulatory.
- c Respiratory.
- d Reproductive.

29 **Statement 1**  
A dry period in mammals is the time between lactations.

**Statement 2**  
The average lactation period in a UK dairy cow is approximately 300 days.

Which one of the following is correct for the above statements?

	Statement 1	Statement 2
a	True	True
b	True	False
c	False	True
d	False	False

30 For which one of the following farm animal species is the term 'incubation' **most** commonly used in reproduction?

- a Cattle.
- b Sheep.
- c Pigs.
- d Poultry.

31 What is the **main** function of red blood cells?

- a To fight disease in the body.
- b To carry oxygen to the body tissues.
- c To regulate body temperature.
- d To transport nutrients around the body.

32 What are lipids made up of?

- a Fats.
- b Vitamins.
- c Minerals.
- d Protein.

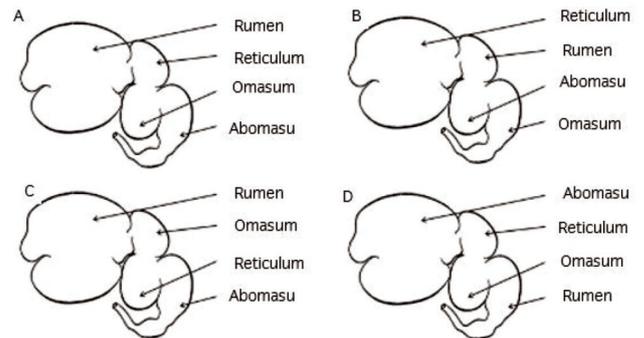


Figure 5

33 Which one of the following diagrams, in Figure 5, of the ruminant digestion system is labelled **correctly**?

- a A.
- b B.
- c C.
- d D.

34 What are **two main** reasons why farmers participate in the Red Tractor farm assurance scheme?

- 1 To promote British food.
- 2 To produce what the market wants.
- 3 To produce higher yields.
- 4 To promote food produced overseas.

- a 1 and 2.
- b 1 and 3.
- c 2 and 3.
- d 3 and 4.

35 When a farmer sells products directly off the farm, how should they request payment from the buyer?

- a By completing a movement record.
- b By completing a passport.
- c By producing an invoice.
- d By issuing a receipt.

36 Which one of the following organisations is **not** funded by the government?

- a DEFRA.
- b RPA.
- c EA.
- d NFU.

37 Which **two** of the following are allied trades within the agricultural industry?

- 1 Veterinary surgeons.
- 2 Plumbers.
- 3 Fertiliser suppliers.
- 4 Electricians.

- a 1 and 2.
- b 1 and 3.
- c 2 and 3.
- d 4 and 1.

38 What is the **main** role of an agronomist?

- a To advise on livestock on the farm.
- b To look after machinery on the farm.
- c To update the office farm records.
- d To advise on the crops on the farm.

39 A permanent farm worker is someone who is employed

- a full time on the farm
- b when the farm is busy
- c by several different farmers
- d for 2-3 days a week on the farm.

40 Within livestock production, what legal requirement is an E.I.D used for?

- a Identifying individual animals.
- b Improving growth rates.
- c Managing feed rations.
- d Recording milk yields.

41 Which one of the following is a pedometer used to monitor in dairy cattle?

- a Activity.
- b Feed intake.
- c Milk yield.
- d Growth.

42 Which **two** of the following are examples of Key Performance indicators (KPi).

- 1 Tractor horse power.
- 2 Days to slaughter.
- 3 Farm vehicle speed.
- 4 Calving interval.

- a 1 and 4.
- b 1 and 3.
- c 2 and 3.
- d 2 and 4.

**To answer questions 43, 44 and 45 you must refer to Scenario 1.**

**Scenario 1:**

A farmer is planning to establish a grass ley to feed the dairy cows. They are planning a grass mixture that is high yielding and will have good digestibility.

The farmer plans to apply fertilisers in the form of slurry and farm yard manure to the field before it's ploughed to improve fertility. They intend to undertake as much work as possible using farm staff but do not have all the equipment needed and time is limited to meet legislative requirements.

43 Which one of the following is the **main** species of grass to be added to the mixture?

- a Timothy.
- b Cocksfoot.
- c Ryegrass.
- d Blackgrass.

44 Which one of the following regulations govern when and where the farmer can apply the fertilisers?

- a COSHH.
- b NVZ.
- c PPE.
- d FEPA.

45 Which one of the following is the **most** appropriate to employ to help the farmer to complete the tasks in a timely manner?

- a Contractor.
- b Apprentice.
- c Casual labour.
- d Seasonal staff.

To answer questions 46 and 47 you must refer to Scenario 2.

**Scenario 2:**

A farmer has some cattle and sheep that are grazing on some very wet grassland. The stockperson has noticed that several are very thin and coughing. In order to comply with legislation, the stockperson will treat the animal.

- 46 What is the **most** likely condition, judging by the symptoms, shown by the animals?
- a Mastitis.
  - b Grass staggers.
  - c Footrot.
  - d Liver Fluke.
- 47 Which one of the following records **must** be completed by the stockperson?
- a Medicine.
  - b Movement.
  - c Passport.
  - d Stock.

To answer questions 48, 49 and 50 you must refer to Scenario 3.

**Scenario 3:**

A farmer has recently acquired a mixed farm. They wish to grow crops that will benefit both the soil and the livestock. In order to improve the crop rotation and yields, to reduce costs, the farmer would like to add pulses.

- 48 Which one of the following is an appropriate crop to add to the rotation?
- a Oilseed rape.
  - b Winter wheat.
  - c Fodder beet.
  - d Spring beans.

- 49 The farmer decides to add pulses to the crop rotation. Is this the correct choice of crop?
- a No, because pulses do not add any beneficial nutrients to soil.
  - b Yes, because pulses are legumes and can be a source of protein to the livestock.
  - c No, because pulses are not a suitable feed for livestock.
  - d Yes, because pulses are the only crop used in crop rotation.

50 **Statement 1**

A good rotation will benefit the crop by reducing pest and diseases.

**Statement 2**

Adding pulses to the rotation will increase the cost of growing the next crop.

Which one of the following is correct for the above statements?

	<b>Statement 1</b>	<b>Statement 2</b>
a	True	True
b	True	False
c	False	True
d	False	False

**NOW GO BACK AND CHECK YOUR WORK**

- **IMPORTANT -**  
Are the details at the top of the answer sheet correct?  
Have you filled in your answers in INK in the appropriate boxes on the answer sheet?