



**0171-514 MARCH 2020**

**Level 3 Advanced Technical Extended Diploma in Agriculture  
(Farm Mechanisation)**

Level 3 Agriculture – Theory exam (2)

If provided, stick your candidate  
barcode label here.

**Tuesday 3 March 2020  
13:30 – 15:30**

Candidate name (first, last)

First

Last

Candidate enrolment number


Date of birth (DDMMYYYY)

Gender (M/F)

Assessment date (DDMMYYYY)

Centre number

Candidate signature and declaration\*

- If additional answer sheets are used, enter the additional number of pages in this box. 
- Before taking the examination, **all candidates** must check that their barcode label is in the appropriate box. Incorrectly placed barcodes may cause delays in the marking process.
- Please ensure that you staple additional answer sheets to the **back** of this answer booklet, clearly labelling these with your full name, enrolment number, centre number and qualification number in BLOCK CAPITALS.
- All candidates need to use a **black/blue** pen. **Do not** use a pencil or gel pen, unless otherwise instructed.
- If provided with source documents, these documents **will not** be returned to City & Guilds, and will be shredded. Do not write on the source documents.

**\*I declare that I had no prior knowledge of the questions in this examination and that I will not divulge to any person any information about the questions.**

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

- a pen with blue or black ink
- non-programmable calculator

**General instructions**

- Use black or blue ball-point pen.
- The marks for questions are shown in brackets.
- This examination contains 13 questions. Answer **all** questions.
- Answer the questions in the spaces provided. Answers written in margins or on blank pages will **not** be marked.
- Cross through any work you do not want to be marked.



1 State **four** methods of transmitting power mechanically in land-based power units. (4 marks)

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2 Explain **two** reasons why a 1000 rpm Power Take Off (PTO) is preferable to a 540 rpm PTO when using a 6m power harrow. (4 marks)

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3 a) Describe the function of the differential lock on a tractor. (2 marks)

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b) State when the differential lock on a tractor should **not** be used and give **one** reason why. (2 marks)

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4 a) State **two** advantages of a turbo charger when fitted to a tractor. (2 marks)

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b) Explain how a turbo charger works. (4 marks)

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5 What size fuse should be fitted to a 600 watt hand drill working off a 240V supply?  
Show all workings. (3 marks)

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6 List **four** responsibilities of an **employee**, under the Health and Safety at Work Act 1974 (HASWA). (4 marks)

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7 Explain why service intervals on tractors are carried out in hours rather than miles. (2 marks)

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8 List **two** features of  
a) closed centred hydraulics (2 marks)

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b) open centred hydraulics. (2 marks)

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9 a) Explain how double acting and single acting spool valves work. (5 marks)

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b) Give **one** example of a machine that uses  
i) a single acting ram (1 mark)

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ii) a double acting ram. (1 mark)

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10 State **four** potential hazards when using an angle grinder in a workshop. (4 marks)

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11 a) What metal are hand files made of? (1 mark)

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b) Why should the hand files be kept apart in storage? (1 mark)

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12 Aluminium and mild steel are unsuitable for making the vanes on a fertiliser spreader.

Considering the characteristics of the fertiliser, give **two** reasons why **each** of these metals is unsuitable. (4 marks)

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