

081105T4SAR

## SUSTAINABLE AGRICULTURE FOR RURAL DEVELOPMENT LEVEL 5

AGR/OS/SARD/CC/03/5 And Vocational College

Date: 20.11.2025 03:34 PM

### Apply Agricultural Engineering Principles

November/December 2025

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## TVET CURRICULUM DEVELOPMENT, ASSESSMENT AND CERTIFICATION COUNCIL (TVET CDACC)

### WRITTEN ASSESSMENT

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**Time: 3 HOURS**

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### INSTRUCTIONS TO CANDIDATE

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1. This paper consists of TWO sections: A and B.

2. Answer ALL questions in section A and ANY THREE questions in section B.

3. Marks for each question are indicated in the brackets.

4. Candidates are provided with a separate answer booklet

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5. Do not write on the question paper.

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This paper consists of THREE (3) printed pages

Date: 20.11.2025 03:34 PM Candidates should check the question paper to ascertain that all pages

are printed as indicated and that no questions are missing.

## SECTION A (40 MARKS)

**Answer ALL the questions in this section.**

1. Animal power is an important source of farm power for centuries. State FOUR advantages of using animal power on a farm. (4 Marks)
2. Fuel filters are essential in fuel flow in an engine. Give FOUR reasons why fuel filters are important. (4 Marks)
3. A flywheel is a heavy wheel that is part of some engines of farm machines. Outline FOUR functions of a flywheel. (4 Marks)
4. The portion of the total rainfall that is actually used for their growth is called "effective rainfall". Mention FOUR ways soil characteristics affects "effective rainfall" (4 Marks)
5. Wood is the most commonly used material in construction sites. Name FOUR defects of wood. (4 Marks)
6. Maintenance of workshop equipment prolongs the life of the equipment and ensures safety. Outline FOUR maintenance practices of workshop measuring equipment. (4 Marks)
7. In a farm, various farm structures are required for various activities and ensuring overall farm efficiency. List FOUR types of farm structures. (4 Marks)
8. Power Take-Off (P.T.O.) is a mechanical device found on most tractors that allows the engine's power to be transferred. State FOUR precautions when operating tractor P.T.O powered implements. (4 Marks)
9. Designing a good farm fence is a critical investment that impacts the safety, security, and efficiency of farm operation. Give FOUR uses of farm fences. (4 Marks)
10. Three-Point Hitch is the most common and versatile farm tractors. State FOUR functions of hitches on farm machines. (4 Marks)

## SECTION B (60 MARKS)

### Attempt Any THREE Questions in This Section

11. Seed drills representent over traditional methods of manual seeding and broadcasting  
fertilizer.

- a. Explain THREE Functions of a seed cum fertilizer drill. (6 Marks)
- b. Describe SEVEN components of a seed drill. (14 Marks)

12.

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- a. Bench terraces are a soil and water conservation technique that involves converting steep, sloping land into a series of level. Factors that should be considered when designing a bench terrace. (10 Marks)

- b. Irrigation is the manual application of water required by plants. Describe FIVE factors to consider while selecting the right method of irrigation. (10 Marks)

13. Concrete is a versatile and widely used construction material due to its strength and durability.

- a. Describe THREE components of making concrete. (6 Marks)

- b. Explain THREE reasons of curing a concrete mix after it has set. (6 Marks)
- c. Livestock farm structures are buildings and facilities specifically designed to house, feed, and manage farm animals. Discuss FOUR structural requirements of a crush. (8 Marks)

14.

- a. A boom sprayer is a piece of agricultural equipment used during crop protection. (10 Marks)

Components of a boom sprayer.

- b. Soil erosion is a natural process in which the agents of erosion move the top layer of soil from one place to another. Discuss FIVE factors that contribute to soil erosion by water. (10 Marks)