higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

N980**(E)**(N24)H
NOVEMBER EXAMINATION

NATIONAL CERTIFICATE

MAINTENANCE MANAGEMEMT: FARMING N5

(4090535)

24 November 2016 (X-Paper)
09:00–12:00

Nonprogrammable calculators may be used.

This question paper consists of 5 pages.

GENERAL STUDIES

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DEPARTMENT OF HIGHER EDUCATION AND TRAINING
REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATE
MAINTENANCE MANAGEMENT: FARMING N5
TIME: 3 HOURS
MARKS: 100

INSTRUCTIONS AND INFORMATION

1. Answer ALL the questions.
2. Read ALL the questions carefully.
3. Number the answers according to the numbering system used in this question paper.
4. Sketches and diagrams should be neatly done in pencil.
5. Write neatly and legibly.

GENERAL STUDIES

QUESTION 1

1.1 Name the year and the person who invented the diesel engine. (2)

1.2 Explain the basic operation of the diesel engine. (8)

1.3 Explain the operation of the valves as the camshaft rotates. (7)

1.4 Name any THREE functions of the carburetor. (3)
[20]

QUESTION 2

2.1 Give THREE reasons why a vehicle is equipped with a gearbox. (3)

2.2 Name the TWO types of gears used in the modern gearbox. (2)

2.3 Briefly explain the function of the following gearbox parts:

2.3.1 Main shaft

2.3.2 Gear-selector rod

2.3.3 Cluster-gear assembly

2.3.4 Synchroniser

(4 × 2) (8)

2.4 Name TWO primary characteristics concerning the behaviour of liquids contained within a closed space like in a brake system of a vehicle. (2)
[15]

QUESTION 3

3.1 Name any FIVE functions of a wheel rim. (5)

3.2 Name any FIVE functions of tires. (5)

3.3 As the farm manager you are responsible for the condition of the different vehicles' tires.

What points will you focus on when managing the tires? (5)
[15]

GENERAL STUDIES

QUESTION 4

4.1 Describe the oxy-acetylene welding (OAW) process. (5)

4.2 Name any FIVE safety rules when doing OAW. (5)

4.3 How will you handle and store gas cylinders at your maintenance building? (5)
[15]

QUESTION 5

5.1 Name the FIVE most common types of electrical sources available for the farm. (5)

5.2 As the farming manager you are responsible for all the electrical motors on the farm. It is your task to work out a maintenance plan for the electrical motors.

Work out the maintenance plan under the following headings:

5.2.1 Daily maintenance task (1)

5.2.2 Weekly maintenance task (1)

5.2.3 Monthly maintenance tasks (3 × 1) (3)

5.2.4 Six-monthly (semi-annual) tasks (5 × 1) (5)
[15]

GENERAL STUDIES

QUESTION 6

6.1 Name FIVE essential functions of a roof. (5)

6.2 Make TWO neat drawings illustrating the difference between a flat/pent roof and an enclosed/parapet pent roof. (2 × 5) (10)

6.3 A farmer has three herds of cattle comprising of 40, 60 and 90 head, and a flock of 300 sheep. Assume a four camp grazing system is used for each group of animals, and with the present veld management practices the size of the herds cannot be increased. A stock-watering scheme like in the TABLE below is required to supply water to each of the camps.

ANIMAL TYPE	WATER REQUIREMENTS (per head per 24 hours)
Small animals (sheep and smaller)	5 litres
Larger animals	50 litres

TABLE

The water supply is from a dam and it is anticipated that there will be no run-off into the dam for a 90-day period.

Calculate the minimum needed capacity of the dam measured in m^3 and use a safety factor of 1,5, to ensure that there would be sufficient water for the 90 day period. (5)

[20]

TOTAL: 100

GENERAL STUDIES

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