



**NAMIBIA UNIVERSITY  
OF SCIENCE AND TECHNOLOGY**

**FACULTY OF HEALTH, NATURAL RESOURCES AND APPLIED SCIENCES**

**DEPARTMENT OF AGRICULTURAL SCIENCES AND AGRIBUSINESS**

<b>QUALIFICATION : BACHELOR OF SCIENCE IN AGRICULTURE</b>	
<b>QUALIFICATION CODE: 07BAGA</b>	<b>LEVEL: 7</b>
<b>COURSE CODE: AMC520S</b>	<b>COURSE NAME: AGRICULTURAL MECHANISATION</b>
<b>SESSION: JUNE 2024</b>	<b>PAPER: 1</b>
<b>DURATION: 3 HOURS</b>	<b>MARKS: 100</b>

<b>FIRST OPPORTUNITY EXAMINATION QUESTION PAPER</b>	
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<b>INSTRUCTIONS</b>
1. Answer ALL the questions. 2. Write clearly and neatly. 3. Number the answers clearly.

**PERMISSIBLE MATERIALS**

1. Examination question paper
2. Answering book

**THIS QUESTION PAPER CONSISTS OF 5 PAGE (Including this front page)**

## SECTION A: TRUE OR FALSE QUESTIONS

### QUESTION 1

**State** whether the following statements is *True* or *False*. Only write the number and **True** or **False** for each statement. [10]

- 1.1. Hazard identification is the process of controlling the potential risks at the workplace.
- 1.2. Solar energy is produced by making use of other means than fossil fuels.
- 1.3. It is not necessary to check engine oil and coolant levels on a newly purchased vehicle.
- 1.4. To ensure that the fan for the cooling system is functioning properly, a loose fan belt must be replaced as soon as possible.
- 1.5. It is important to ensure that local conservation authorities and other relevant officials are consulted before any fences are erected.
- 1.6. To ensure that an appropriate fencing infrastructure is erected for a successful farming operation, it is important to consider the weather conditions of the area.
- 1.7. To check and refill your vehicle's engine oil, it is important to check the coolant and make sure it is diluted to 50/50 water and anti-freeze.
- 1.8. In water infrastructure supply, the choice of pump driver to be purchased depends on the type of animal kept on a ranch/park.
- 1.9. It is the legal responsibility of employers to ensure the safety of workers at the workplace.
- 1.10. To control excessive bleeding from a victim of a motor vehicle accident, administer a cardiopulmonary resuscitation (CPR).

## B: MULTIPLE CHOICE QUESTIONS

### QUESTION 2

**Choose** the correct answer. Only write the number and the letter corresponding to the correct answer. [10]

- 2.1. Which one is **NOT** applicable for good maintenance practice?
  - a) To intervene after a failure occurs.
  - b) To do maintenance only when necessary.
  - c) To reduce the number of failures and shutdowns.
  - d) To reduce maintenance cost and cost due to production loss.
- 2.2. The following are methods of how hazards enter our bodies except one, which **ONE**?
  - a) Inhalation
  - b) Digestion
  - c) Absorption
  - d) Injection
- 2.3. You can extend the life of your vehicle by making use of the following tips, except one, which **ONE**?
  - a) Check engine oil at every other fill-up.
  - b) Change the oil frequently.
  - c) Mix coolants.
  - d) Avoid hose hassles.
- 2.4. Which **ONE** is **NOT** an advantage of an electrified fence?

- a) It is expensive when considering its effectiveness and high maintenance cost.
- b) It controls most types of animals effectively.
- c) It can be constructed with low labour input.
- d) It requires low maintenance, provided that the fence is correctly planned and erected.

2.5. The following are general requirements for an effective electrified fence **EXCEPT** one. Which **ONE**?

- a) The fence should be planned and designed for specific types of animals to be controlled, therefore the power of the energizer and the placement of the wire strands and other posts should be suitable for the intended animal.
- b) It should be as low a cost as possible by using poor-quality materials.
- c) Should be neat and permanent and of low maintenance.
- d) Should be safe from contact with humans.

2.6. Which **ONE** is **NOT** true for concrete aggregates?

- a) Strong and hard to give a strong final concrete.
- b) Durable to stand up to wear and tear and weathering.
- c) Chemically active so that it reacts with cement.
- d) Clean, since dirt or clay sticking to the aggregates will weaken the bond between paste and aggregates.

2.7. Which **ONE** is **NOT** a common type of workplace hazard?

- a) Transportation and vehicle-related accidents
- b) Enclosed spaces
- c) Gender-based violence
- d) None of the above

2.8. Which **ONE** is **NOT** a method to treat snake bites?

- a) Reassure the patient and keep calm
- b) Wipe venom from the wound
- c) Apply tourniquet
- d) Immobilise limb

2.9. Which **ONE** is **NOT** an advantage of solar energy?

- a) Solar energy is a truly renewable energy source.
- b) It can be harnessed only in some areas of the world and is not available every day.
- c) We cannot run out of solar energy, unlike some of the other sources of energy.
- d) Solar energy will be accessible as long as we have the sun.

2.10. Which **ONE** is an essential element of farm water planning?

- a) Understanding total farm water requirements.
- b) Assessing the reliability of water sources.
- c) Establishing the sizes of storages (dams or tanks) needed.
- d) All of the above.

**SUBTOTAL: 20**

### QUESTION 3

3.1. **Name** and **explain** the 2 main categories of hazards that could occur at a workplace and give an appropriate and relevant example for each. (6)

3.2. Excessive blood loss from an open wound due to injuries sustained at work may lead to a fatality. **Explain** how you would control excessive loss of blood from open wounds by applying the direct pressure method. (4)

[10]

**QUESTION 4**

- 4.1. **Name** four ways in which health hazards enter and affect our bodies. (4)
- 4.2. **Write** brief notes to **explain** how you will check and re-fill a vehicle's engine oil. (6)

[10]

**QUESTION 5**

- 5.1. Commercial farming, especially livestock farming requires good fencing infrastructures. **Provide** 8 requirements of a good fence for productive farming. (15)
- 5.2. In a table format, **provide** the advantages and disadvantages of wooden post fence and iron post fence. (12÷2=6)

[21]

**QUESTION 6**

- 6.1. **What** are the 3 specific factors that will determine the type of pump driver to choose for farm water supply (as discussed in class)? (3)
- 6.2. **Provide** 6 principles of good maintenance practice for farm tools and implements. (6)

[9]

**QUESTION 7**

- 7.1. Briefly **explain** what alternative energy is. (3)
- 7.2. **Discuss** solar as an alternative source of energy in terms of the following.
  - a) How it is generated (2)
  - b) Its applications (3)
- 7.3. **Discuss** the following disadvantage of wind power in (details).  
*The Wind Fluctuates* (4)

[12]

**QUESTION 8**

**Redraw** the table below and **complete** it by filling in the missing sentences **1** to **6**, explaining the causes and remedial actions for the following welding defect: (6)

*Incomplete penetration*

CAUSES	REMEDY
1. _____	Increase current
Electrode too large for the joint	2. _____
Insufficient gab	3 _____
4. _____	Too inclined, does not give penetration, keep nearer to correct angle
5. _____	Use the correct build-up sequence
Speed of travel too fast	6. _____

[6]

**QUESTION 9**

- 9.1. **Explain** the curing of concrete with regards to the following.
  - a) What is curing? (2)
  - b) When to cure? (1)
  - c) Why cure? (3)
  - d) How to cure? (2)

9.2. **Provide** an appropriate term/word/phrase for the following: (4)

- a) How easy it is to place, handle, compact and finish the concrete.
- b) Concrete is a mixture of cement, water, coarse and fine aggregates and (possibly) admixtures.
- c) This type of maintenance is essential to put machinery and equipment in good working condition instantly to avoid serious consequences, for instance, cleaning of distributor cap in the electrical system of an engine.
- d) Reduction in cross section weakening the joint and creating a slag trapped in a weld.

[12]

**TOTAL: 100**

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