



education

Department:
Education
REPUBLIC OF SOUTH AFRICA

**T1320(E)(N16)T
NOVEMBER 2009**

**NON-NATIONAL CERTIFICATE:
ENGINEERING CERTIFICATE OF COMPETENCY**

LEGAL KNOWLEDGE: MINES

(13050026)

**16 November (X-Paper)
09:00 – 12:00**

CLOSED-BOOK EXAMINATION

This question paper consists of 5 pages.

**DEPARTMENT OF EDUCATION
REPUBLIC OF SOUTH AFRICA
NON-NATIONAL CERTIFICATE:
ENGINEERING CERTIFICATE OF COMPETENCY
LEGAL KNOWLEDGE: MINES
TIME: 3 HOURS
MARKS: 100**

INSTRUCTIONS AND INFORMATION

1. Answer ALL the questions.
 2. Read ALL the questions carefully.
 3. Number the answers correctly according to the numbering system used in this question paper.
 4. Answers written in pencil are NOT allowed.
 5. This is NOT an OPEN-BOOK EXAMINATION. Candidates are NOT allowed to use any notes, textbooks or reference works during this examination.
 6. Rule off across the page on completion of each question.
 7. ALL calculations must be shown.
 8. Candidates who have not been accepted by the Commission of Examiners will be disqualified.
 9. Candidates arriving more than 30 minutes late will NOT be allowed to sit the examination. Candidates writing the examination may NOT leave the examination room BEFORE ONE HOUR after the beginning of the examination.
 10. Questions are based on the requirements and practical application of the Mine Health and Safety Act, 1996 (Act No. 29 of 1996) and the regulations framed under Schedule 4. Answers MUST BE CONFINED to these requirements.
 11. NO cellular phones are allowed in the examination room.
 12. Write neatly and legibly.
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QUESTION 1

Define the following:

- | | | |
|-----|-----------------|------|
| 1.1 | Hazard | (2) |
| 1.2 | Risk | (2) |
| 1.3 | Serious injury | (2) |
| 1.4 | Serious illness | (2) |
| 1.5 | Working place | (2) |
| | | [10] |

QUESTION 2.

- | | | |
|-----|--|------|
| 2.1 | What appointments must be made in the case of an underground mine with more than 50 workers underground at any one time when the manager himself is not the holder of a manager's certificate? (State the regulation and qualification requirements of the appointee). | (4) |
| 2.2 | List SIX of the manager's duties as expounded in the regulations in force in terms of Schedule 4 of the Mine Health and Safety Act. | (6) |
| | | [10] |

QUESTION 3

- | | | |
|-----|--|------|
| 3.1 | What information must appear on the authorisation certificate of any Inspector of Mines to enter a mine and who must issue such certificates? | (6) |
| 3.2 | What is the duty of every Inspector of Mines relating to the authorisation permit mentioned in QUESTION 3.1? | (2) |
| 3.3 | What is the legal requirement in the event of an Inspector of Mines not being in possession of an authorisation certificate mentioned in QUESTION 3.1? | (2) |
| | | [10] |

QUESTION 4

- | | |
|--|------|
| What are the requirements of the employer relating to scraper winches? | [10] |
|--|------|

QUESTION 5

- 5.1 Define *lifting equipment*. (2)
- 5.2 Define *winding plant*. (3)
- 5.3 May lifting equipment be utilised to hoist persons in a shaft containing a licensed winder? Substantiate the answer. (5)
[10]

QUESTION 6

- 6.1 What are the requirements for the safe use of scaffolding as contemplated in the Mine Health and Safety Act? Include the standard in the answer. (3)
- 6.2 What are the energy sources which could possibly occur, resulting in the need to lock out equipment? (4)
- 6.3 State THREE possible inconsistencies which could result in machinery causing injury to persons as contemplated in Regulation 8.8(2). (3)
[10]

QUESTION 7

- 7.1 The employer is required to take measures relating to underground water dams to prevent injury to persons. What could cause injury, as contemplated in Regulation 10.2(3)(a)? (2)
- 7.2 List EIGHT hydraulic pressure systems in an underground mine for which the employer must prepare and implement a procedure. (8)
[10]

QUESTION 8

What dangerous occurrences must be reported to the Principal Inspector relating to the following:

- 8.1 Winding plants (List FIVE occurrences) (5)
- 8.2 Lifts and elevators (List THREE occurrences) (3)
- 8.3 Boilers (List ONE occurrence) (1)
- 8.4 Chairlifts (List ONE occurrence) (1)
[10]

QUESTION 9

- 9.1 As the winder and shaft engineer, you are responsible for conducting winder dynamic tests. At which intervals must these tests be done? (2)
- 9.2 As the winder and shaft engineer you are planning to conduct winder dynamic tests. State what tests, setting and examinations you are going to conduct, including the sequence of each test and/or examination, including also the acceptable results required. (Answers that a technician will do the tests will result in no marks being awarded.) (8)
- [10]

QUESTION 10

- 10.1 What are the requirements for the constitution of a Commission of Examiners for a mechanical or electrical engineer's certificate of competency? (4)
- 10.2 What are the requirements for the constitution of a Commission of Examiners for a mine manager's certificate of competency? (4)
- 10.3 What are the requirements for the constitution of a Commission of Examiners for a mine overseer's certificate of competency? (2)
- [10]

TOTAL: 100

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