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# higher education & training

Department:  
Higher Education and Training  
REPUBLIC OF SOUTH AFRICA

T1270(E)(N15)T  
NOVEMBER 2011

NON-NATIONAL CERTIFICATE: ENGINEERING CERTIFICATE OF  
COMPETENCY

**LEGAL KNOWLEDGE: MINES**

(13050026)

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

**CLOSED-BOOK EXAMINATION**

This question paper consists of 5 pages.

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

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**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. Rule off across the page on completion of each question.
  5. ALL calculations MUST be shown.
  6. Use only BLACK or BLUE ink.
  7. NO cellular phones are allowed in the examination room.
  8. Questions are based on the requirements and practical application of the Mine Health and Safety Act, 1996 (Act 29 of 1996) and the regulations framed there under. Answers MUST be confined to these requirements.
  9. Candidates arriving 30 minutes late will NOT be allowed to sit the examination. NO candidate must leave the EXAMINATION ROOM BEFORE ONE HOUR has elapsed from the commencement of the examination.
  10. Candidates who have NOT been accepted by the Commission of Examiners, will be disqualified.
  11. This is a CLOSED-BOOK EXAMINATION. Candidates may NOT use any notes, textbooks or reference works during this examination.
  12. Write neatly and legibly.
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### QUESTION 1

State the manufacturer's and supplier's duties with regard to hazardous substances in terms of Section 21 of the Mine Health and Safety Act.

[10]

### QUESTION 2

Define the following in terms of the Mine Health and Safety Act:

- 2.1 Engine (3)
  - 2.2 Machinery (3)
  - 2.3 Reasonably practicable (4)
- [10]

### QUESTION 3

- 3.1 What reasonable measures must the employer take with regard to underground rail bound transport in terms of the guideline for a code of practice for rail bound equipment? (7)
  - 3.2 The employer must take reasonable measures to ensure that no person is injured due to the failure of any lifting equipment or lifting tackle. What can cause failure in lifting equipment or lifting tackle? (3)
- [10]

### QUESTION 4

- 4.1 State the dangerous occurrences regarding lifts and elevators that must be reported. (6)
  - 4.2 On what form must a dangerous occurrence be confirmed? (2)
  - 4.3 Within how many days after a dangerous occurrence relating to fires, must the forms be forwarded by the employer to the Principal Inspector of Mines? (1)
  - 4.4 How long must the accident and dangerous occurrence record be kept? (1)
- [10]

### QUESTION 5

- 5.1 In terms of Minerals Act Regulation 2.13.1, explain the word 'designed rating of machinery used in the generation of power together with the power supplied from outside sources'. (2)
  - 5.2 State the requirements under Minerals Act Regulation 2.13.6.1 regarding the period that a mine or works can continue to work without a certificated engineer? (3)
  - 5.3 Must the appointment of a competent person in terms of Minerals Act Regulation 2.13.2 be reported to the Principal Inspector of Mines? (1)
  - 5.4 May the manager of a mine or works appoint himself as engineer? (2)
  - 5.5 Define engineer in terms of Chapter 1 of the Minerals Act Regulations. (2)
- [10]**

### QUESTION 6

- 6.1 Which persons may be authorised to travel with material in terms of Chapter 16 (Winding) of the Minerals Act? (3)
  - 6.2 In accordance with what standard must the condition of a winding rope or balance rope be assessed? (2)
  - 6.3 What must be entered in the Rope Record Book in terms of the Minerals Act Regulation? (4)
  - 6.4 What signal is rung when shaft examination and repair is about to take place? (1)
- [10]**

### QUESTION 7

- 7.1 When may a cable trench be left open, uncovered or unprotected? (1)
  - 7.2 What are the requirements regarding the use of apparatus, components or machinery made of light metal in a hazardous area? (2)
  - 7.3 What are the requirements in terms of Minerals Act Regulation 21.14.6 for a trailing cable used in a hazardous location? (3)
  - 7.4 What are the requirements when an overhead power line is erected in the vicinity of an explosives magazine? (3)
  - 7.5 What is the minimum factor of safety for overhead power line supports (steel lattice towers and cross-arms)? (1)
- [10]**



## QUESTION 8

Define the following in terms of the Minerals Act Regulations:

- |     |                    |             |
|-----|--------------------|-------------|
| 8.1 | Controlled mine    | (2)         |
| 8.2 | Lifting machine    | (2)         |
| 8.3 | Metalliferous mine | (2)         |
| 8.4 | Dead               | (2)         |
| 8.5 | Flexible cable     | (2)         |
|     |                    | <b>[10]</b> |

## QUESTION 9

- |     |  |             |
|-----|--|-------------|
| 9.1 | What documentation needs to accompany the application for a new boiler permit?   | (8)         |
| 9.2 | Minerals Act Regulation 22.6.2 states that every boiler needs to be provided with a soft copper plate. What are the sizes of this soft copper plate? | (2)         |
|     |  | <b>[10]</b> |

## QUESTION 10

- |      |   |             |
|------|---|-------------|
| 10.1 | What particulars need to be marked on a pressure vessel?  | (7)         |
| 10.2 | When must every pressure vessel, in which the product of the designed working gauge pressure in kilopascals and the capacity in cubic metres exceeds 30, be inspected and tested? | (3)         |
|      |   | <b>[10]</b> |

**TOTAL: 100**