

QUESTION 1

What are objects of this Act?

(10) 7

1. Objects of Act

The objects of this Act are-

- (a) to protect the *health and safety* of persons at *mines*;
- (b) to require *employers* and *employees* to identify *hazards* and eliminate, control and minimise the *risks* relating to *health and safety* at *mines*;
- (c) to give effect to the public international law obligations of the Republic that concern *health and safety* at *mines*;
- (d) to provide for *employee* participation in matters of *health and safety* through *health and safety representatives* and the *health and safety committees* at *mines*;
- (e) to provide for effective monitoring of *health and safety* conditions at *mines*;
- (f) to provide for enforcement of *health and safety* measures at *mines*;
- (g) to provide for investigations and inquiries to improve *health and safety* at *mines*; and
- (h) to promote-
 - (i). a culture of *health and safety* in the mining industry;
 - (ii). training in *health and safety* in the mining industry; and
 - (iii). co-operation and consultation on *health and safety* between the State, *employers*, *employees* and their representatives.

QUESTION 2

Define the following:

- a) Competent Person
- b) Engineer
- c) Self-propelled mobile machine

(5)
(2)
(3)

(4B) '**competent person**' means a person who-

- (a)
 - (i). is qualified by virtue of his knowledge, training, skills and experience to organize the work and its performance;
 - (ii). is familiar with the provisions of the Act and the regulations which apply to the work to be performed; and
 - (iii). has been trained to recognise any potential or actual danger to *health* or safety in the performance of the work; or
- (b) is in possession of the appropriate certificate of competency where such certificate is required by these Regulations;

(6B) 'engineer' means a person who is the holder of an appropriate mechanical or electrical engineer's certificate of competency appointed in terms of these Regulations;

(27A) 'self-propelled mobile machine' means any machine which is self-propelled, requires a driver and is used for the purpose of performing mining operations or for performing similar operations at a works;

QUESTION 3

What are the duties and responsibilities of the engineer in terms of Regulation 2.13.4.1? (10)

Structure
Machinery

2.13.4.1 An engineer or competent person appointed in terms of regulation 2.13.2 shall-

- (a) subject to regulation 2.13.12, be responsible for the safe installation and the proper operation, running and maintenance of all machinery;
- (b) be responsible for the safe erection and proper maintenance of all buildings, structures and tanks;
- (c) take all reasonable measures to ensure that-
 - (i). all safety appliances, mechanisms and guards are maintained in good condition;
 - (ii). the provisions of the regulations relating to machinery are fully complied with; and
 - (iii). the working of any apparatus or machine, the using of which may constitute a danger to any person, is stopped.

QUESTION 4

List 13 duties and responsibilities of the Banksman and Onsetter?

(13)

Mining
Mineral Act Regulation

16.91 The banksman, onsetter or other person authorised to give signals for winding operations-

16.91.1 shall not, after the winding-engine driver has signalled that persons may enter the conveyance for the purpose of travelling or that persons in the conveyance may continue to travel, give any signal on the signalling arrangements for that winding compartment until all persons are properly placed in the conveyance and the doors or gates of the conveyance and the gates or barriers at the bank, station or landing platform are properly shut: Provided that when the banksman, onsetter or other person authorised to give signals intends to travel, such doors, gates or barriers as will prevent his entrance to the conveyance may be left open until he has given the signal to raise or lower and has entered the conveyance;

16.91.2 shall not, when the conveyance containing persons is brought to rest in the proper position at the bank, station or landing platform and the winding-engine driver has signalled that persons may leave the conveyance, give any signal on the signalling arrangements for that winding compartment until all persons who are to leave the conveyance are out and clear of it;

16.91.3 shall ensure that the roof, cover or hood, required to be provided in terms of regulations 16.11 to 16.14 inclusive, is properly in position before persons are raised or lowered in or on such conveyance;

16.91.4 shall take all reasonable measures to prevent persons from having unauthorised access to the conveyance and to the winding compartments;

16.91.5 shall not allow any person to travel in a conveyance operated by a winding engine if such conveyance contains mineral and, except as provided for in regulation 16.62, shall not allow any person to travel in a conveyance operated by a winding engine that is being used simultaneously for the winding of mineral;

16.91.6 shall not, except as provided for in regulations 16.63 and 16.65, allow any person to travel in a conveyance operated by a winding engine that is being used simultaneously for the winding of material;

16.91.7 shall not, except as provided for in regulation 16.67, allow any person to ride on the roof, top, side, bow, rim, bridle or frame of or in any position outside a conveyance operated by a winding engine;

16.91.8 shall acquaint himself with the maximum number of persons authorised by the Principal Inspector of Mines to travel at any one time in the cage and on each deck of the cage, or in the skip or other means of conveyance and shall not allow such maximum to be exceeded;

16.91.9 shall not allow any unauthorised person to give signals on the signalling arrangements used in connection with winding operations;

16.91.10 shall not give the 'clear signal' 2 pause 2 or any signal to raise or lower the conveyance unless all persons at the bank, station, landing platform, loading box or other place where he is in charge, are in a position in which they will not be endangered by the movement of such conveyance or any other conveyance operated by the same winding engine;

16.91.11 shall not give a signal to clutch unless all persons are out of and clear of the conveyance or conveyances operated by the winding engine;

16.91.12 shall not cause or permit any person to enter or to have access to the conveyance or conveyances until he has received a signal from the winding-engine driver that clutching operations are completed; and

16.91.13 shall take all reasonable measures to safeguard against accident all persons at the place where he is in charge, whether such persons are under his direct supervision or not.

QUESTION 5

Turn Cop.

The employer must take reasonably practicable measures to ensure that procedures are prepared and implemented for the selection, training, appointment and licensing of trackless mobile machine operators, which procedures must include:

List the procedures that must be included.

(10)

- (23) The *employer* must take *reasonably practicable* measures to ensure that procedures are prepared and implemented for the selection, training, appointment and licensing of trackless mobile machine operators, which procedures must include:
- (23.1) physical and psychological pre-selection criteria;
 - (23.2) a training programme for trackless mobile machine operators, covering:
 - (i). theoretical training in a training Centre;
 - (ii). practical training; and
 - (iii). on the job training.
 - (23.3) assessment of the trainee, on successful completion of the training programme, by a competent person;
 - (23.4) that only operators, assessed to be competent are authorised in writing by the responsible engineer to operate trackless mobile machines;
 - (23.5) that operators of trackless mobile machines are authorised in writing by their supervisor to operate trackless mobile machines. Such authorisation must detail their duties, responsibilities, limitations and areas of operation;
 - (23.6) when an operator has not operated a trackless mobile machine for a period of two years, such operator is re-assessed to be competent by a competent person prior to being issued with a new licence.
 - (23.7) that every operator of trackless mobile machines is issued with a licence containing at least the following:
 - (i). a photograph to positively identify the operator;
 - (ii). the trackless mobile machine types which the operator may operate;
 - (iii). date of issue and expiry date; and
 - (iv). the operator's company identification number.

QUESTION 6

5) In terms of the Mine Health and Safety Act, Section 11(5) Every employer must conduct an investigation.

Mention all the requirements of Section 11(5).

(10)

(5) Every *employer* must-

(a) conduct an investigation into every-

- (i). accident that must be reported in terms of *this Act*;
- (ii). *serious illness*; and
- (iii). *health-threatening occurrence*;

(aA) commence an investigation referred to in paragraph (a) within 10 days from the date of such accident, *serious illness* or *health threatening occurrence*;

[Para. (aA) inserted by s. 4 (a) of Act 74 of 2008]

- (b) consult the *health and safety committee* on investigations in terms of this section;
- (c) conduct an investigation in co-operation with the *health and safety representative* responsible for the *working place* in which the investigation takes place;
- (d) on completion of each investigation, prepare a report that-
 - (i). identifies the causes and the underlying causes of the accident, *serious illness* or *health-threatening occurrence*;

- (ii). identifies any unsafe conditions, acts, or procedures that contributed in any manner to the accident, *serious illness* or *health-threatening occurrence*; and
- (iii). makes recommendations to prevent a similar accident, *serious illness* or *health-threatening occurrence*; and
- (e) deliver a copy of the report referred to in paragraph (d) within 30 days from the date of the accident, *serious illness* or *health-threatening occurrence* being investigated to the *Principal Inspector of Mines* and the *health and safety committee*. If there is no *health and safety committee* the *employer* must deliver a copy of the report to the *health and safety representative* responsible for the *working place*.

(5A) An investigation in terms of subsection (5) must be completed within 30 days after the accident, *serious illness* or *health-threatening occurrence* being investigated or such longer period as the *Principal Inspector of Mines* may permit.

[Sub-s. (5A) inserted by s. 4 (d) of Act 74 of 2008]

- (5B) The *employer* must notify the *Principal Inspector of Mines* of any accident or occurrence at a mine that results in-
- (a) the serious injury;
 - (b) illness; or
 - (c) death, of any person, in order to allow the *Principal Inspector of Mines* to instruct an *Inspector* to conduct an investigation simultaneously with the *employer* as required in section 11 (5) (a).

QUESTION 7

Mention 10 rights and powers of the health and safety representative.

(10)

- (1) A *health and safety representative* may-
 - (a) represent *employees* on all aspects of *health and safety*;
 - (b) direct any *employee* to leave any *working place* whenever circumstances arise at that *working place* which, with reasonable justification, appears to the *health and safety representative* to pose a serious danger to the *health* or *safety* of that *employee*;

- (c) assist any *employee* who has left a *working place* in terms of section 23;
- (d) identify potential *hazards* and *risks* to *health* or *safety*;
- (e) make representations or recommendations to the *employer* or to a *health and safety committee* on any matter affecting the *health* or *safety* of *employees*;
- (f) inspect any relevant document which must be kept in terms of *this Act*;
- (g) request relevant information and reports from an *inspector*;
- (h) with the approval of the *employer*, be assisted by or consult an adviser or technical expert who may be either another *employee* or any other person;
- (i) attend any meeting of a *health and safety committee*-
 - (i). of which that representative is a member; or
 - (ii). which will consider a representation or recommendation made by that representative;
- (j) request-
 - (i). an *inspector* to conduct an investigation in terms of section 60; or
 - (ii). the *Chief Inspector of Mines* to conduct an inquiry in terms of section 65;
- (k) participate in consultations on *health* and *safety* with-
 - (i). the *employer* or person acting on behalf of the *employer*; or
 - (ii). an *inspector*;
- (l) participate in any *health* and *safety* inspection by-
 - (i). the *employer* or person acting on behalf of an *employer*; or
 - (ii). an *inspector*;
- (m) inspect *working places* with regard to the *health* and *safety* of *employees* at intervals agreed with the *employer*;
- (n) participate in any internal *health* or *safety* audit;
- (o) investigate complaints by any *employee* relating to *health* and *safety* at work;
- (p) examine the causes of accidents and other dangerous occurrences in collaboration with the *employer* or person acting on behalf of the *employer*;
- (q) visit the site of an accident or dangerous occurrence at any reasonable time;
- (r) attend a post-accident inspection;
- (s) co-operate with the *employer* in the conducting of investigations in terms of section 11 (5);
- (t) participate in an inquiry held in terms of section 65; and
- (u) perform the functions-
 - (i). agreed by the *health* and *safety committee*; or
 - (ii). *prescribed*.

QUESTION 8

Chapter 3.

The employer must take reasonable practicable measures to ensure that no person suffers any electrical shock, arc flash or electrocution as a result of what? (7)

3.2 The **employer** must take **reasonable practicable** measures to ensure that no person suffers any electrical shock, **arc flash** or electrocution as a result of:

- (a) exposure to electrical current flow;
- (b) a person coming into contact with **live** exposed parts of any **electrical apparatus**;
- (c) exposure to electricity, **arc flash**, all fault currents, overvoltage and surges;
- (d) any **electrical apparatus** failing due to electromagnetic interference from other equipment;
- (e) any **electrical apparatus** being incorrectly designed, installed, operated or maintained; and
- (f) any exposure to blasts, fires or **arc flashes** resulting from electrical faults.

QUESTION 9

Chapter 8.

As a responsible Engineer for conveyor belt installation in your mine. What must you ensure in compliance with regulation 8.8(1)? (10)

- (3) The measures to be taken by the *employer* in terms of regulation 1 must include measures to ensure that-
- (a) only persons authorised by the *employer* to do so, start, operate and maintain any machine where such starting, operation or maintenance may pose a significant risk to any person;
 - (b) where the moving of machinery may pose a significant risk to any person, such machinery is only moved under the constant supervision of a competent person who is fully aware of the risks attached to such moving of the machinery;
 - (c) only persons authorised by the *employer* to do so enter any area where machinery is operated, where such operation may pose a significant risk to any person;
 - (d) machinery is only operated if all installed safety devices are operational and functional;
 - (e) persons in close proximity to moving parts of machinery do not wear or are not permitted to wear clothing or anything else that can be caught in such moving parts;
 - (f) where the unexpected moving of any machinery or any part of any machinery could pose a significant risk to any person, appropriate pre-start warning devices, such as audible warning devices, the delay time must be determined by risk assessment with a minimum of a ten second time delay, are fitted to such machinery and used to warn persons that such machinery is about to be set in motion;
 - (g) where there could be a significant risk to any person working on any machinery due to the release from such machine of any mechanical, electrical, hydraulic, chemical or other source of energy, a written lockout procedure is prepared and implemented to ensure that such source of energy is effectively locked out and de-energised before any person works on such machinery;
 - (h) access scaffolding is erected, used, maintained and dismantled safely and in accordance with SANS Standard 10085-1:2004 'The design, erection, use and inspection of access scaffolding';
 - (i) means are provided, on or in close proximity to any machine, to immediately remove the source of power to that machine in case of an emergency;
 - (j) where the starting of machines are interlocked, no unintended starting of any of those machines can take place;
 - (k) starting devices are so arranged that no accidental starting of machinery can take place; and
 - (l) all electrical, pneumatic and hydraulic portable equipment are operated and maintained in a safe working order.

QUESTION 10

Chapter 8.

- (1) The employer, at every mine where scraper-winches or mono-rope winches are operated, must take reasonable measures to prevent persons from being injured as a result of-
- (a) any person coming into contact with any moving part of a scraper winch or mono-rope winch installation, or any equipment attached thereto; and
 - (b) the scraper winch or mono-rope winch installation being unsafe.

List the measures that must be taken by the employer to prevent injuries. (10)

→ Competent person: ✓

- (2) The measures to be taken by the *employer* in terms of regulation 8.4(1) must include measures to ensure that-
- (a) scraper-winches and mono-rope winches are only operated by competent persons authorised by the *employer* to do so;
 - (b) the scraper winch or mono-rope winch is not operated until it is examined and declared safe to operate by a person authorised to do so by the *employer*;
 - (c) means are provided to forewarn persons of the intention to commence operating any scraper-winch or mono-rope winch;
 - (d) means are provided for persons to signal to the operator, from any access point to the installation, to shut down the operation of the scraper winch or mono-rope winch installation;
 - (e) scraper winch and mono-rope winch ropes, scraper attachments and rope splicing are regularly inspected;
 - (f) the scraper winch ropes are always underlay;
 - (g) a written procedure is prepared and implemented for the installation of the winch system, covering at least-
 - (i). the requirements of scraper and mono-winch foundations and installations;
 - (ii). the crossover and anti-fouling arrangements of ropes from two or more winches;
 - (iii). illumination of the moving parts of any winch so that they can be identified by persons;
 - (iii). illumination of the moving parts of any winch so that they can be identified by persons;
 - (iv). appropriate sheave and return pulley anchor and rigging arrangements, including the use of safety slings;
 - (v). measures to ensure that winch ropes are used within the design capacity;
 - (vi). winch starter box location to ensure ease of operation by the operator; and
 - (vii). the moving and transport of winches from one location to another.