

higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

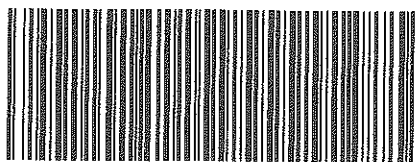
NON-NATIONAL CERTIFICATE: ENGINEERING CERTIFICATE OF COMPETENCY

OCCUPATIONAL HEALTH AND SAFETY ACT

(13050046)

8 June 2022 (X-paper)
09:00–12:00

This question paper consists of 11 pages.



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QUESTION 1

- 1.1 Define each of the following terms used in the Occupational Health and Safety Act:

1.1.1 Machinery

1.1.2 Major hazard installation

1.1.3 Medical surveillance

1.1.4 User



(4 × 1)

(4)

- 1.2 Every chief executive officer (CEO) shall, as far as is reasonably practicable, ensure that the duties of his employer as contemplated in this Act are properly discharged and he/she may assign any duty to any person under his control.

Do the CEO and the person to whom he/she has assigned certain duties relieve the employer of any responsibility or liability under this Act?

(1)

- 1.3 Subject to certain provisions, no person shall sell or market in any manner whatsoever any article, substance, plant, machinery or health and safety equipment unless it complies with all prescribed requirements.



Under what conditions may one sell or market an article, substance or plant which does not comply with all prescribed requirements?

(2)

- 1.4 Whenever an employee does or omits to do any act which it would be an offence in terms of this Act for the employer of such employee to do or omit to do, the employer himself shall be presumed to have done or omitted to do that act and shall be liable to be convicted and sentenced in respect hereof. The fact that the employer issued instructions forbidding any act or omission of the kind in question shall not, in itself, be accepted as sufficient proof that he took all reasonable steps to prevent the act or omission, unless certain facts can be proved.

Name THREE facts which the employer must prove in order to be found not liable for such act or omission.



(3)
[10]

QUESTION 2

- 2.1 Every employer shall designate in writing for a specified period health and safety representatives for the workplace, or for different sections thereof. ★
- 2.1.1 When must one designate health and safety representatives for the workplace?
- 2.1.2 Who shall be eligible for designation as health and safety representatives?
- 2.1.3 How many health and safety representatives shall be appointed in the case of shops and offices?
- 2.1.4 How many health and safety representative shall be appointed in the case of other workplaces?
- 2.1.5 How will one deal with one's employees performing work at workplaces other than at one's factory where all one's other employees report for duty? ★
- (5 × 1) (5)
- 2.2 An employer shall in respect of each workplace where two or more health and safety representatives have been designated, establish one health and safety committee but where more health and safety committees have been established in respect of a workplace, each health and safety representative for that workplace shall be a member of at least one of those committees. ✓
- What number of persons other than health and safety representatives may an employer nominate on any health and safety committee? (1)
- 2.3 A health and safety committee shall hold meetings as often as may be necessary, at a time and place determined by the committee. ★
- 2.3.1 What period between meetings is prescribed? (1)
- 2.3.2 Name TWO reasons when additional meetings apart from normal health and safety committee meetings must be held. (2)
- 2.4 What records must the health and safety committee keep? (1)
- [10]

QUESTION 3

- 3.1 Define the following terms used in the Ergonomics Regulations, 2019:

3.1.1 Ergonomics ★

3.1.2 Work system

(2 × 1) (2)

- 3.2 An employer must, after consultation with health and safety committees or representatives, where there is a potential ergonomic risk, establish a training programme.



3.2.1 When must the training be conducted?

3.2.2 At what intervals must refresher training be conducted?

(2 × 1)

(2)

- 3.3 Any person who is or may be exposed to ergonomic risks must obey any lawful instruction given to him or her by the employer.

Name TWO instructions an employer may give to a person.

(2)

- 3.4 An employer must, before the commencement of any work that may expose employees to ergonomic risks, have an ergonomic risk assessment performed by a competent person.



3.4.1 At what intervals must an ergonomic risk assessment be conducted?

(1)

3.4.2 Name TWO reason why an ergonomic risk assessment must be reviewed?

(2)

- 3.5 Name ONE reason why an employer must place an employee under medical surveillance, which is overseen by an occupational medicine practitioner.

(1)

[10]

QUESTION 4

- 4.1 Define the following terms as used in the Construction Regulations, 2014:

4.1.1 Demolition work



4.1.2 Excavation work

(2 × 1)



(2)

- 4.2 A contractor who intends to carry out construction work other than work for which a construction work permit needs to be issued by the provincial director, must at least 7 days before the work is to be carried out notify the provincial director in writing in the form of Annexure 2 only if the intended construction work will include certain activities.



4.2.1 Name TWO activities that will require an Annexure 2 notification.

(2)



- 4.2.2 Must the contractor who intends to construct a single-story dwelling in which the client is going to reside similarly notify the provincial director?  (1)
- 4.3 Name the TWO tasks a contractor must perform before doing excavation work after he or she has notified the provincial director in the form of Annexure 2. (2)
- 4.4 What other provision must a contractor ensure where construction work is done over or in close proximity to water, other than preventing workers from falling into the water? (1)
- 4.5 A contractor must, in addition to the construction site provisions contained in the Facilities Regulations, provide at or within reasonable access of every construction site, clean and maintained facilities.
- 4.5.1 What number of shower facilities must be provided when necessary?
- 4.5.2 What number of sanitary facilities must be provided when necessary?  (2 × 1) (2) ✓
- [10]

QUESTION 5

- 5.1 Define the following terms as used in the Facilities Regulations, 2004:
- 5.1.1 SABS 0400 (SANS 10400)
- 5.1.2 SABS 241 (SANS 241)  (2 × 1) (2)
- 5.2 In respect of each room that contains closets, urinals, showers or washbasins, every employer shall provide certain things and facilities.
- Name TWO provisions or facilities that must be provided other than to ensure that water feeding to showers or washbasins on his premises which is not obtained from the water supply system of a local authority, complies with prescribed standards. (2)
- 5.3 An employer in a factory shall provide every employee in his service, excluding office workers, with a personal facility.
- For what reason must such personal facilities be provided? (2)
- 5.4 There is no exposure to high-risk or poisonous substances, dirt, filth or untanned hides or skins on the premises. The employer intends to allow a change-room to be used for employees to take their meals. 
- Under what conditions may this be allowed? (2)




- 5.5. Where there is exposure to high-risk or poisonous substances, dirt, filth or untanned hides or skins on the premises, the employer shall provide a separate dining room or eating place on the premises which in respect of the maximum number of employees who will be using it at any one time, shall be in accordance with part C of SABS 0400 (SANS 10400).





Name TWO requirements that the employer must ensure other than that every dining room is naturally or artificially ventilated in accordance with the provisions of Part O of the National Building Regulations.



(2)
✓ [10]


QUESTION 6

- 6.1: Define the following terms as used in the Driven Machinery Regulations, 2015:
- 6.1.1 Point of operation 
- 6.1.2 Transportation plant
- (2 × 1) (2)
- 6.2 A grinding machine with grinding wheels of 300 mm in diameter is in use.
- 6.2.1 Name TWO places where the operating speed must be marked.
- 6.2.2 What most one do with regard to eye protection?
- 6.2.3 What notice must be posted in a conspicuous place at every grinding wheel?
-  (3 × 1) (3)
- 6.3 A press where the opening at the point of operation is greater than 10 mm, which is fully guarded, is in use.
- (1)
- 6.3.1 Name TWO conditions under which one may permit the use of the press without the guarding contemplated in the regulations?
- (2)
- 6.3.2 What device must be provided on a full-revolution clutch press which is fed by hand?
-  (1)
- 6.3.3 What must this device incorporate?
- (1)
[10]

- 4.2.2 Must the contractor who intends to construct a single-story dwelling in which the client is going to reside similarly notify the provincial director?  (1)
- 4.3 Name the TWO tasks a contractor must perform before doing excavation work after he or she has notified the provincial director in the form of Annexure 2. (2)
- 4.4 What other provision must a contractor ensure where construction work is done over or in close proximity to water, other than preventing workers from falling into the water? (1)
- 4.5 A contractor must, in addition to the construction site provisions contained in the Facilities Regulations, provide at or within reasonable access of every construction site, clean and maintained facilities.
- 4.5.1 What number of shower facilities must be provided when necessary?
- 4.5.2 What number of sanitary facilities must be provided when necessary?  (2 x 1) (2) [10]

QUESTION 5




- 5.1 Define the following terms as used in the Facilities Regulations, 2004:
- 5.1.1 SABS 0400 (SANS 10400)
- 5.1.2 SABS 241 (SANS 241)  (2 x 1) (2)
- 5.2 In respect of each room that contains closets, urinals, showers or washbasins, every employer shall provide certain things and facilities.
- Name TWO provisions or facilities that must be provided other than to ensure that water feeding to showers or washbasins on his premises which is not obtained from the water supply system of a local authority, complies with prescribed standards. (2)
- 5.3 An employer in a factory shall provide every employee in his service, excluding office workers, with a personal facility.
- For what reason must such personal facilities be provided? (2)
- 5.4 There is no exposure to high-risk or poisonous substances, dirt, filth or untanned hides or skins on the premises. The employer intends to allow a change-room to be used for employees to take their meals.  Under what conditions may this be allowed? (2)

- 5.5. Where there is exposure to high-risk or poisonous substances, dirt, filth or untanned hides or skins on the premises, the employer shall provide a separate dining room or eating place on the premises which in respect of the maximum number of employees who will be using it at any one time, shall be in accordance with part C of SABS 0400 (SANS 10400). 





Name TWO requirements that the employer must ensure other than that every dining room is naturally or artificially ventilated in accordance with the provisions of Part O of the National Building Regulations.

(2)
✓ [10]

QUESTION 6

- 6.1: Define the following terms as used in the Driven Machinery Regulations, 2015:
- 6.1.1 Point of operation 
- 6.1.2 Transportation plant (2 x 1) (2)
- 6.2 A grinding machine with grinding wheels of 300 mm in diameter is in use.
- 6.2.1 Name TWO places where the operating speed must be marked.
- 6.2.2 What must one do with regard to eye protection?
- 6.2.3 What notice must be posted in a conspicuous place at every grinding wheel?  (3 x 1) (3)
- 6.3 A press where the opening at the point of operation is greater than 10 mm, which is fully guarded, is in use. (1)
- 6.3.1 Name TWO conditions under which one may permit the use of the press without the guarding contemplated in the regulations? (2)
- 6.3.2 What device must be provided on a full-revolution clutch press which is fed by hand?  (1)
- 6.3.3 What must this device incorporate? (1) [10]

QUESTION 7

- 7.1 Define the following terms as used in the Electrical Machinery Regulations, 2011: 
- 7.1.1 Confined space
- 7.1.2 Portable electric tool
- 7.1.3 Miniature substation
- (3 × 1) (3)
- 7.2 An employer or user shall cause notices to be displayed within, and at all designated entrances to premises, as the case may be, where generating plant and transforming, switching or linking apparatus are situated.
- What is required in this regard for miniature substations?  (1)
- 7.3 Every user shall provide an unobstructed space for operating and maintenance staff at the back and front of all switchboards, and the space at the back shall be kept closed and locked except for the purpose of inspection, alteration or repair.
- Name TWO cases where these requirements will not apply except when switchboards of which the backs are accessible only through an opening in the wall or partition against which they are placed with such openings being kept closed and locked. (2)
- 7.4 You intend to buy a portable electric tool constructed with double or reinforced insulation. 
- Name TWO things you must look for on the tool? (2)
- 7.5 Only a registered person may issue an electric fence system certificate in the form of Annexure 1, after having satisfied himself or herself by means of an inspection and test that it complies and is safe.
- 7.5.1 Who may issue an electric fence system certificate for a pet-shock system or strip-grazing electric fence system?
- 7.5.2 If at any time prior to the issuing of an electric fence system certificate (Annexure 1), any fault or defect is detected in any part of the system, what must the registered person do?  (2 × 1) (2)
- [10]**

QUESTION 8

- 8.1 Define the following terms as used in the Pressure Equipment Regulations, 2009:



8.1.1 Repair

8.1.2 Re-rating

(2 × 1) (2)

- 8.2 The user shall ensure that his pressure equipment is operated and maintained within its design and operating parameters and certified by the manufacturer, repairer or modifier that the pressure equipment has been designed and manufactured, repaired or modified in accordance with the relevant health and safety standard.



8.2.1 What must be included on the certificate when required?

8.2.2 Who must issue the certificate before commissioning of pressure equipment?

8.2.3 Who must issue the certificate for a gas system before commissioning?

(3 × 1) (3)



- 8.3 From an inspection and test it appeared that pressure equipment cannot be used safely in accordance with its design criteria and you choose to have it repaired or modified. Once the work is done, the modifier or repairer must issue a certificate describing the repair or modification and certify that it is in accordance with the relevant health and safety standard and the assessment procedure as specified by the relevant hazard category as determined by SANS 347.

What is also required on the certificate? (1)

- 8.4 From an inspection and test it appears that certain pressure equipment cannot be used safely in accordance with its design criteria and you decided not to do the necessary repairs immediately but rather to re-rate the pressure equipment.

Name TWO steps that must be followed in the re-rating process! (2)





- 8.5 Pressure equipment with a quick-actuating opening for operational purposes shall be provided with an interlock or other effective means.

What is the purpose of the interlock?



(2)
[10]

QUESTION 9

- 9.1 Define the term, *exposed*, as used in the Regulations for Hazardous Chemical Agents 1995 (HCS) as amended.  (1)
- 9.2 About what procedures must an employer give written instruction to the drivers of vehicles carrying HCS? (1)
- 9.3 An employer shall ensure that an employee is under medical surveillance if the employee may be exposed to a listed substance.
- Name TWO other cases when an employee must be under medical surveillance. (2)
- 9.4 What must one do where the concentration of HCS in the air in a workplace is such that the exposure of employees working in that workplace exceeds the recommended limit without the wearing of respiratory protective equipment? (1)
- 9.5 Define the term, *temporary installation*, as used in the Major Hazard Installation Regulations, 2001 (MHI).  (1)
- 9.6 Prior to the commencement of the erection of any installation that will be a major hazard installation, one shall notify the chief inspector, provincial director and the relevant government (local authority) in writing thereof.
- Name TWO items of information that must be included in this notification other than the physical address of the installation.  (2)
- 9.7 An employer shall, after consultation with the health and safety representative or committee, carry out a risk assessment and submit it to the chief inspector, provincial director and the relevant local government.
- At what intervals must this risk assessment be carried out? (1)
- 9.8 A risk assessment is the process of collecting, organising, analysing, interpreting, communicating and implementing information in order to identify the probable frequency, magnitude and nature of any major incident which could occur.
- What is the purpose of collecting this information?  (1)

[10]

QUESTION 10

- 10.1 Define the term, *occupational exposure limit for lead, in the case of tetra-ethyl lead*, as used in the Lead Regulations, 2001. ★ (1)
- 10.2 An employer shall, before any employee is exposed or may be exposed to lead and, after consultation with the health and safety committee established for that section of the workplace, ensure that the employee is adequately and comprehensively informed and trained on both practical aspects and theoretical knowledge.
- 10.2.1 At what intervals must refresher training be provided? (1)
- 10.2.2 Name TWO cases when training must be provided more frequently. (2)
- 10.2.3 Who must provide the training? (1)
- 10.3 Define the term, *8-hour rating level*, as used in the Noise-Induced Hearing Loss Regulations, 2003. ★ (1)
- 10.4 Where an assessment or its review indicates that employees may be exposed to noise at or above 85 dBA, one needs to implement a representative measurement programme.
- 10.4.1 What must one do to comply with the measurement programme in the case where a number of employees work in an area of approximately equal noise level? ★
- 10.4.2 What must one do to comply with the measurement programme in the case of an employee working in at an approximately fixed location relative to the noise source? (2 × 1) (2)
- 10.5 One has to ensure that the exposure of your employees to noise is either prevented or, where this is not reasonably practicable, one needs to reduce the exposure to noise by implementing noise control measures.
- 10.5.1 What engineering control measures can be applied? ★
- 10.5.2 What administrative control measures can be applied? (2 × 1) (2)

[10]**TOTAL: 100**