

Minerals Council South Africa



EXAMINATION PAPER

SUBJECT: CHAMBER OF MINES OF SOUTH AFRICA - CERTIFICATE IN MINE ENVIRONMENTAL CONTROL PAPER 6 – THE MINE HEALTH AND SAFETY ACT REGULATIONS SUBJECT CODE: COMMEC 6 EXAMINATION DATE: 06 MAY 2025 TIME: 08:30 – 10:30	EXAMINER: M Lebelo MODERATOR: B Letlape TOTAL MARKS: [100] PASS MARK: (60%)
NUMBER OF PAGES: 3	
SPECIAL REQUIREMENTS: <i>All candidates are advised to read the below instructions/requirements and adhere to them. Not adhering to them could lead to the loss of marks.</i> ANSWER ALL THE QUESTIONS - This is an OPEN BOOK EXAM. References, including guidance notes, guidelines for mandatory codes of practices, the Mine Health and Safety Act and Regulations and Regulations in force in terms of Schedule 4 of the Mine Health and Safety Act are permitted. NO PREVIOUS EXAMINATION QUESTIONNAIRES WILL BE ALLOWED. Put your ID number on the outside cover of each book used, and on any graph paper or other loose sheets handed in. NB: YOUR NAME MUST NOT APPEAR ON ANY ANSWER BOOK OR LOOSE SHEETS. - Write in ink on the right-hand page only – the left hand page will not be marked. - Illustrate your answers by means of sketches or diagrams wherever possible. - Please quote all the relevant regulation numbers. - Keep your answers short and to the point, it is not necessary to provide word-perfect reproductions of the regulations. In many cases a single word or phrase will suffice. - Please note that you are not allowed to contact your examiner or moderator regarding this examination. - Cell phones are NOT allowed in the examination room. - You are encouraged to make use of the CoMCert Tip-off Hotline whenever you witness or suspect any wrongdoing related to the CoMCert Examinations on landline 0800 118 998 or alternatively you can use email COMCert@tip-offs.com.	

QUESTION 1

Define the following concept and quote relevant section or regulation from the MHS Act and MHSC Guidelines.

- 1.1 Handheld flammable gas warning device. (2)
- 1.2 Explosion proof seal. (2)
- 1.3 Breathing apparatus. (2)
- 1.4 Occupational exposure limit' (OEL) (2)
- 1.5 Abnormally hot environment (2)

[10]**QUESTION 2**

- 2.1 What are the two components of an occupational health programme (2)
- 2.2 As the Section 12. (1) legal appointee, you are required to calculate the emergency heat stress index (EHSI) of an environment with wet and dry bulb temperatures of 31.2° C and 36.9° C respectively. Define EHSI and calculate the EHSI of such an environment and provide a comment on your answer. (5)
- 2.3 List and describe the conditions when a thermal stress risk assessment should be reviewed? (8)
- 2.4 Who is required to inspect the refuge bays and what is the frequency of inspection? State the applicable regulation. (5)

[20]**QUESTION 3**

- 3.1 List and discuss five the ventilation incidents and/or occurrences that are reportable to the Principal Inspector of Mines as required by the MHS Act. (15)

[15]**QUESTION 4**

- 4.1 What are the Occupational Exposure Limits for Physical Agents as prescribed in the MHS Act? (6)
- 4.2 What are the required qualifications for a person appointed as outlined in the MHS Act Regulation 5.1? (4)

[10]

QUESTION 5

You are an occupational hygienist (MHSA Section 12(1) appointee) at a mine. Personal noise exposure statistical analysis conducted for the following HEGS revealed the following HEG classification.

HEG	HEG classification	Number of employees per HEG
X	Category A	1050
Y	Category B	160
Z	Category D	50

- 5.1 List the requirements for a personal noise exposure monitoring programme. (12)
- 5.2 What are the minimum number of personal noise samples to be taken per quarter for HEG X and HEG Z in the table above? (4)
- 5.3 Define “baseline audiogram” (2)
- 5.4 Define “Homogenous Exposure group” in the context of personal noise sampling. (2)
- [20]**

QUESTION 6

A 4m x 4m development end at your underground trackless section is currently blasted once in a 24-hour period. The force quantity of this end is 8m³/s. The mine manager (Section 3.1 appointee) tasks you to investigate prospects of blasting the development end twice in a 24-hour period, which would require you to calculate the re-entry interval and provide guidance as a Section 12(1) appointee in conducting a risk assessment.

Based on this scenario above please answer the questions below.

- 6.1 Discuss the statutory requirements with regards to re-entry intervals and the minimum air quantities requirements for multi-blast development ends. (8)
- 6.2 What is the duty of the employer with regards to assessing and responding to risk, as per MHSA (quote the relevant regulation)? (4)
- 6.3 Which hazards should be taken into consideration when conducting the risk assessment? (5)
- 6.4 What are the disadvantages of exhaust overlap system when multi-blasting? (3)
- (20)**

QUESTION 7

7. List five employee responsibilities with regard to health and safety? (5)

Total Marks: [100]