

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: COMMEC6 EXAMINATION DATE: 10 NOVEMBER 2020 TIME: 08:30 – 10:30	EXAMINER: N B LETLAPE MODERATOR: K Beukes TOTAL MARKS: [100] PASS MARK: (60%)
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NUMBER OF PAGES: 4
SPECIAL REQUIREMENTS: 1. ANSWER ALL THE QUESTIONS 2. This is an <u>OPEN BOOK EXAM</u> . 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. 3. 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. 4. Write in ink on the right hand page only – the left hand page <u>will not</u> be marked. 5. Illustrate your answers by means of sketches or diagrams wherever possible. 6. Please quote all the relevant regulation numbers. 7. 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. 8. Please note that you are not allowed to contact your examiner or moderator regarding this examination. 9. Cell phones are NOT allowed in the examination room.

QUESTION 1

- 1.1 Elaborate on the requirements that mine ventilation and rescue plans are to be kept at every underground mine – quote the relevant legislation. (10)
- 1.2 How are explosions, fires and flooding at mines to be reported to the employer? – discuss and quote the relevant legislation. (2)
- 1.3 An employer is duty-bound to protect employees against exposure to irrespirable atmosphere. Discuss the obligation, covering:
- Early warning – quote relevant regulation (2)
 - Mitigating action - quote the relevant regulation. (8)
- 1.4 From a ventilation/Occupational Hygiene point of view, discuss the employer's obligation regarding the likelihood of an undesirable event of persons being exposed to fumes from a conveyor belt installation. Quote the applicable regulation. (3)
- [25]**

QUESTION 2

- 2.1 State the MHSA requirement regarding provision of potable and palatable water (2)
- 2.2 An employer is obliged to provide and maintain ablution and change house facilities. State the regulation number and elaborate on this requirement. (6)
- 2.3 State the employee's obligation regarding working clothes (2)
- 2.4 List the legislative requirements on main and booster fans regarding:
- Examination. (3)
 - Record keeping. (2)
- 2.5 According to the Mine Health and Safety Act, the inspector has powers to deal with dangerous conditions:
- State the regulation (2)
 - The inspector may give any instruction necessary to protect the health and safety of persons at the mine. Elaborate on this statement. (8)

[25]

QUESTION 3

3.1 With emphasis on employee safety and health, discuss the legislative requirements regarding second outlets /escape ways from underground working places. Quote the relevant regulations. (6)

3.2 Where multi blasting is taking place, list the following:

- Minimum force quantity. (1)
- Minimum exhaust quantity. (1)
- Exhaust column maximum distance to face. (1)
- Force column maximum distance to face. (1)
- Overlap distance. (1)
- Prevention of open circuit fan re-circulation min.airflow requirements. (1)

3.3 State the noise level at which a Hearing Conservation Programme must be established and implemented. (2)

3.4 An individual, while in the employ of a mine, is required by law to be subject to medical surveillance. Discuss the exit procedure requirement, should such an individual's employment be terminated for any reason. Quote the applicable section of the Act. (6)

[20]

QUESTION 4

Answer the following questions based on the DMR Mine Health and Safety Inspectorate - Guideline for the compilation of a Mandatory Code of Practice for the Prevention of Fires at Mines - Ref: DMR 16/3/2/4-B3 dated 28 February 2017.

4.1 Define:

- 4.1.1 Fire. (1)
- 4.1.2 Fire hazard. (1)
- 4.1.3 Fire detection system. (1)
- 4.1.4 Fire suppression system (1)
- 4.1.5 IFSTA (10)

4.2 Discuss the following under fire hazards:

4.2.1: Fuel sources

4.2.2: Ignition sources (10)

4.3 Elaborate on the following under fire prevention controls:

4.3.1: Mine infrastructure. (10)

[30]

Total Marks: 100

