

## Mining engineering manager of underground coal mines certificate of competence

Examiners' report May to July 2018

### Written examination

#### Summary of results and general comments

Examination date:	3+4 May 2018
Number candidates:	14
Number who passed:	6
Highest overall mark:	73%
Average overall mark:	61%
Lowest overall mark:	40%

### MB1 – Mining legislation

#### Summary of results and general comments

Exam Date:	May 2018
Number of Candidates:	14
Number who passed:	6
Highest mark:	79%
Average mark:	60%
Lowest mark:	42%

#### Question 1 (total of 20 marks)

Highest mark:	19
Average mark:	12.7
Lowest mark:	3

#### Examiner's comments

Most candidates answered this question effectively. It is important that the mining engineering manager ensures the response plan for the incident has been activated rather than becoming the response agent.

### Question 2 (total of 20 marks)

Highest mark:	18
Average mark:	12.3
Lowest mark:	7

#### Examiner's comments

Most candidates had a good understanding of the role of the safety and health representative in work health and safety matters and were able to negotiate between what may be perceived as an industrial matter.

### Question 3 (total of 20 marks)

Highest mark:	18
Average mark:	12
Lowest mark:	6

#### Examiner's comments

Candidates need to be able to determine where an issue is safety based or has an underlying industrial relations focus. It is important to understand what the role of site and industry health and safety representatives are as a stakeholder in worker health and safety matters.

### Question 4 (total of 20 marks)

Highest mark:	19
Average mark:	13
Lowest mark:	7

#### Examiner's comments

Candidates need to be fully conversant with the obligations for the management of risk with a primary focus on elimination.

Several candidates, when asked to give examples of the hierarchy of controls, struggled to provide examples that demonstrated their understanding of the different levels of control.

### Question 5 (total of 20 marks)

Highest mark:	16
Average mark:	10
Lowest mark:	4

#### Examiner's comments

Candidates generally struggled to identify all the exposures that are required controls in the health control plan.

## MB2 - Mine ventilation

### Summary of results and general comments

Exam date:	May 2018
Number of candidates:	7
Number who passed:	1
Highest mark:	63.5%
Average mark :	47%
Lowest mark:	35%

#### Question 1 (total 100 marks)

Highest mark:	40
Average mark:	39
Lowest mark:	30

##### Examiner's comments

Most candidates answered the question in general terms rather than address the critical issues that were present on the ventilation plan. That is, a listing of common ventilation hazards, rather than specific issues that were present for the scenario.

Very few candidates proposed solutions for many critical ventilation deficiencies, such as the limited number of roadways available to provide ventilation to the working area of the mine.

Where a solution to a hazard was proposed candidates need to consider how controls for one hazard may affect another hazard that has been identified.

#### Question 2 (total 100 marks)

Highest mark:	77
Average mark:	56
Lowest mark:	30

##### Examiner's comments

Legibility and clarity made marking of the paper very awkward for the examiners.

Candidates need to ensure that any work or calculations on the plan need to clearly indicate for what purpose they have been completed including for what areas of the mine plan they relate to.

Candidates need to ensure that the examiners are informed of all assumptions that have been made as part of the ventilation design.

Candidates should take into consideration what development production is required to match longwall retreat. For example; if the longwall retreats 1 pillar per week, gate road development must advance 1 pillar per week. Main headings must advance 1 longwall block width in the time it takes the longwall to retreat the block.

## MB3 – Coal mining practices

### Summary of results

Exam date:	May 2018
Number of candidates:	7
Number who passed:	4
Highest mark:	78%
Average mark:	58%
Lowest mark:	46.5%

### Section A - Underground coal mining

#### Question 1 (total 16 marks)

Highest mark:	12
Average mark:	11
Lowest mark:	10

#### Examiner's comments

Most candidates that answered this question understood longwall ventilation systems.

In terms of identification of causal factors that result in gas exceedances, candidates need to include those potential causes not related to production such as barometric change and the effects that this will have on gas reservoirs.

#### Question 2 (total 20 marks)

Highest mark:	16
Average mark:	12.5
Lowest mark:	10

#### Examiner's comments

As a mining engineering manager, it is expected that candidates will have a clear understanding of the various methods of development. As such, candidates need to ensure that they apply a systematic risk-based approach to determining which method is most suitable for the conditions

#### Question 3 (total 20 marks)

Highest mark:	13
Average mark:	11.5
Lowest mark:	10

**Examiner's comments**

Candidates that answered this question successfully identified the need to modify the safety management system to take into consideration a reduction of key personnel and a focus on the hazards that will continue to be present at the mine when mining ceases.

It was noted that some candidates looked to have the 'care and maintenance plan' approved by the NSW Resources Regulator, which demonstrated a misunderstanding of the role of the regulator in such matters.

**Question 4 (total 20 marks)**

Highest mark:	17
Average mark:	12.5
Lowest mark:	11

**Examiner's comments**

Candidates demonstrated a good understanding of frictional ignition and the control measures that need to be implemented, maintained and monitored.

**Question 5 (total 20 marks)**

Highest mark:	17
Average mark:	10
Lowest mark:	5.5

**Examiner's comments**

Candidates that answered the question successfully had a clear understanding of pillar extraction panel requirements.

It was apparent to the examiners that candidates need to better understand pillar extraction layouts/geometry.

**Question 6 (total 20 marks)**

Highest mark:	14
Average mark:	10.5
Lowest mark:	7

**Examiner's comments**

For the first part of the question, candidates generally has a sound understanding of emergency sealing sequencing.

It was apparent that candidates need to ensure that as mining engineering managers the focus during emergency sealing is for the safety of not just those completing the sealing but of all workers at the mine.

## Section B - Surface coal mining

### Question 7 (total 20 marks)

Highest mark:	16
Average mark:	12
Lowest mark:	8

#### Examiner's comments

In surface coal mining operations hazards associated with rain events are reported frequently in the NSW Resource Regulator's Weekly Incident Summary.

Candidates should have a clear understanding of the issues rain may have for both heavy and light vehicle interactions; road conditions; slope stability; and what activities should not be undertaken during rain.

Candidates, when considering available control measures for rain affected surface coal mines should not discount suspending operations until conditions improve.

As a mining engineering manager, candidates should ensure that there is a statutory inspection and corrective actions prior to any recommencement of operations after such a delay.

### Question 8 (total 20 marks)

Highest mark:	11
Average mark:	10
Lowest mark:	9

#### Examiner's comments

Candidates should have an understanding of highwall mining methods available and the associated hazards of each method and available control methods.

## Oral examination

Date:	27 July 2018
Number of candidates:	8
Number deemed competent:	6

### General comments

This year most candidates appeared to be well prepared.

Generally unsuccessful candidates should avoid:

- too much superfluous information
- motherhood statements

- too generalised responses
- answers lacking practical application and detail and,
- when providing your answer, be able to explain and justify why you believe that answer to be correct.

Generally successful candidates showed:

- benchmarking that was relative to understanding mining issues and mining practices that the candidate had not previously been exposed to
- practical and technical knowledge
- experience in common mining practice and application of risk management techniques in a structured approach to mine management
- good understanding of statutory functions of mining engineering manager.

## More information

NSW Department of Planning and Environment

Resources Regulator

Mining Competence Team

T: 02 4063 6461

Email: [minesafety.competence@planning.nsw.gov.au](mailto:minesafety.competence@planning.nsw.gov.au)

## Acknowledgments

### Mining engineering manager of underground coal mines examination panel

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