



Regional
NSW

CANDIDATE NUMBER: _____ (write in from your letter)

EXAMINATION: Mining engineering manager of underground coal
mines

EXAM PAPER: MB1 – Legislation

DATE: Thursday 2nd March 2023

EXAMINATION

BOOKLET

CANDIDATE NUMBER: _____ **(write in from your letter)**

Question Number	Mark	Available mark	Marked by <i>Name</i>	Summary comments to justify, as necessary
1	a		3	
	b		3	
	c		2	
	d		4	
	e		8	
	Subtotal		20	
2	a		20	
	Subtotal		20	
3	a		3	
	b		5	
	c		2	
	d		4	
	e		1	
	f		1	
	g		4	
	Subtotal		20	
4	a		10	
	b		10	

Question Number		Mark	Available mark	Marked by <i>Name</i>	Summary comments to justify, as necessary
	Subtotal		20		
5	a		14		
	b		3		
	c		3		
	Subtotal		20		
PAPER	TOTAL		100		<i>Marks checked by:</i>



**Regional
NSW**

(MB1)

*Work Health and Safety (Mines and Petroleum Sites) Act 2013
Work Health and Safety (Mines and Petroleum Sites) Regulation 2022*

**EXAMINATION FOR CERTIFICATE OF COMPETENCE
Mining engineering manager of underground coal mines**

Mining Legislation Paper

Thursday 2nd March 2023
10:50am to 12:00pm (60 minutes)

Venue: Tocal College, Paterson NSW 2421

Room: Glendarra (2) Conference Room

INSTRUCTIONS TO CANDIDATES

All five (5) questions are to be attempted.

All questions are of equal value - 20 marks each

10 minutes reading time is allowed prior to the start of the examination

Unless otherwise stated all references to Act and Regulations are to the

Work Health and Safety Act 2011

Work Health and Safety Regulation 2017

Work Health and Safety (Mines and Petroleum Sites) Act 2013

Work Health and Safety (Mines and Petroleum Sites) Regulation 2022

Explosives Act 2003

Explosives Regulation 2013

ANSWER BOOKLET

- A HIGHLIGHTER ONLY (no pen/pencil etc) can be used in this part of the exam paper during reading time
- If you have a question raise your arm and wait for an exam supervisor
- Answers are to be written in the allocated spaces within this booklet ONLY
- Answers must be written in pen however, drawings may be completed in pencil
- This booklet is not to be altered in any way, pages are not to be added or removed

Question 1 (total 20 marks)

Notifiable Incidents

a) Under S14 of the WHS MPS Act 2013 what does a Notifiable incident mean? (3 marks)

b) What is the duty to notify under s15 WHS MPS Act when you have a notifiable incident? (3 marks)

c) S16 of WHS MPS Act requires additional action for a notifiable at a coal mine. What are these requirements and what detail must be provided? (2 marks)

d) What are the requirements under s17 WHS MPS Act to preserve the scene and when can it be disturbed? (4 marks)

e) S16 WHS MPS Regs states what is required to be recorded following a notifiable incident? Briefly outline the requirement. (8 marks)

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Question 2 (total 20 marks)

SMS

What are the contents of the SMS as per s15 of the WHS MPS Regs?

Question 3 (total 20 marks)

Notices

- a) Under s191 of WHS Act for what purposes can an improvement notice be issued? (3 marks)

- b) What must a s191 notice contain? (5 marks)

- c) S194 allows for the extension of the compliance date. At what stage can this not be done by an inspector? (2 marks)

S223 states the issuing of a s191 notice is a reviewable decision.

- a) Who can request the review? (4 marks)

e) What is the timeframe for requesting a review? (1 mark)

f) What timeframe does the regulator have to complete the review? (1 mark)

g) What else must be completed when you receive a s191 notice? (4 marks)

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Question 4 (total 20 marks)

Statutory obligation

a) S19 WHS Act primary duty of care. What are the requirements? (10 marks)

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CANDIDATE NUMBER: _____ (write in from your letter)

EXAMINATION: Mining engineering manager of underground coal
mines

EXAM PAPER: MB2 – Mine Ventilation

DATE: Thursday 2nd March 2023

EXAMINATION

BOOKLET

CANDIDATE NUMBER: _____ **(write in from your letter)**

Question Number		Mark	Available mark	Marked by <i>Name</i>	Summary comments to justify, as necessary
1	a		40		
	b		40		
	c		20		
	Subtotal		100		
2	a		20		
	b i)		50		
	b ii)		10		
	c		10		
	d		10		
	Subtotal		100		
PAPER	TOTAL		200		<i>Marks checked by:</i>



**Regional
NSW**

(MB1)

*Work Health and Safety (Mines and Petroleum Sites) Act 2013
Work Health and Safety (Mines and Petroleum Sites) Regulation 2022*

**EXAMINATION FOR CERTIFICATE OF COMPETENCE
Mining engineering manager of underground coal mines**

Mine Ventilation Paper

Thursday 2nd March 2023
12:50pm to 4:00pm (190 minutes)

Venue: Tocal College, Paterson NSW 2421

Room: Glendarra (2) Conference Room

INSTRUCTIONS TO CANDIDATES

All two (2) questions are to be attempted.

10 minutes reading time is allowed prior to the start of the examination

Unless otherwise stated all references to Act and Regulations are to the

Work Health and Safety Act 2011

Work Health and Safety Regulation 2017

Work Health and Safety (Mines and Petroleum Sites) Act 2013

Work Health and Safety (Mines and Petroleum Sites) Regulation 2022

Explosives Act 2003

Explosives Regulation 2013

ANSWER BOOKLET

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Banjo mine workings are shown on the attached plan

Banjo mine is an underground coal mine that you have only recently taken over as the mining engineering manager. The mine is achieving an average of 25 000t per day whilst having the capacity to achieve 50 000t per day from 1 longwall, 2 x development units. The Mine operates 5 days per week with 1 maintenance shift scheduled mid week and an additional maintenance shift on weekends.

The surface of the mine is a national park with limited access and limited ability to gain approval for infrastructure. Typically only the first 100m of LW have surface access as well as the area above the main headings.

The seam being extracted, the Middle seam, is 7m thick at a depth of 180m with only the lower 2.9m being extracted. There is a tuff 300mm tuff starting 3.5m from the top of the seam. The average virgin in-situ gas content has increased with each LW block and is now 6m³/t at 100% CH₄ distributed equally between the top and bottom part of the seam. The seam has a medium to low propensity to spontaneous combustion and the permeability of the seam is 125 millidarcy. The immediate roof is relatively weak requiring the installation of standing support in the TG. The dip is as shown on the plan and 1 in 50.

During production the mine regularly has longwall delays due to gas and development has issues with methane at the commencement of the hazardous zone.

Only one shaft is in operation shaft A.

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CANDIDATE NUMBER: _____ (write in from your letter)

EXAMINATION: Mining engineering manager of underground coal mines

EXAM PAPER: MB3 – Coal Mining Practices

DATE: Friday 3rd March 2023

EXAMINATION

BOOKLET

CANDIDATE NUMBER: _____ **(write in from your letter)**

Question Number	Mark	Available mark	Marked by <i>Name</i>	Summary comments to justify, as necessary
1	a		2	
	b		4	
	c		10	
	d		4	
	Subtotal		20	
2	a		6	
	b		14	
	Subtotal		20	
3	a		4	
	b		4	
	c		4	
	d		4	
	e		4	
	Subtotal		20	
4	a		3	
	b		3	
	c		14	
	Subtotal		20	

Question Number		Mark	Available mark	Marked by <i>Name</i>	Summary comments to justify, as necessary
5	a		2		
	b		4		
	c		14		
	Subtotal		20		
6	a		4		
	b		14		
	Subtotal		20		
7	a		4		
	b		16		
	Subtotal		20		
8	a		2		
	b				
	c		4		
	d		14		
	Subtotal		20		
PAPER	TOTAL		100		<i>Marks checked by:</i>



**Regional
NSW**

(MB3)

*Work Health and Safety (Mines and Petroleum Sites) Act 2013
Work Health and Safety (Mines and Petroleum Sites) Regulation 2022*

**EXAMINATION FOR CERTIFICATE OF COMPETENCE
Mining engineering manager of underground coal mines
Coal Mining Practices Paper**

Friday 3rd March 2023
9:50am to 13:00pm (180 minutes)

Venue: Tocal College, Paterson NSW 2421

Room: Glendarra (2) Conference Room

INSTRUCTIONS TO CANDIDATES

Only five (5) out of seven (7) questions are to be attempted:

- four (4) out of six (6) underground questions and
 - one (1) out of two (2) open cut questions

All questions are of equal value - 20 marks each

10 minutes reading time is allowed prior to the start of the examination

Unless otherwise stated all references to Act and Regulations are to the

Work Health and Safety Act 2011

Work Health and Safety Regulation 2017

Work Health and Safety (Mines and Petroleum Sites) Act 2013

Work Health and Safety (Mines and Petroleum Sites) Regulation 2022

Explosives Act 2003

Explosives Regulation 2013

ANSWER BOOKLET

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Question 1 (total 20 marks)

You are the Mining Engineering Manager of a mine that operates a “Drift Winder” system for both personnel and materials transport in the 980m long main drift. There are also an Upcast fan shaft and a conveyor drift with a small man riding Dolly car.

At 1:15am on Sunday morning you receive a phone call from the Shift Undermanager, who is new to the mine, informing you that the “Dolly Car” has derailed while taking down a full trailer of timber props and a trailer of bulk stonedust bags at the 635m marker.

a) What are your immediate concerns? (2 marks)

b) What are your immediate actions? (4 marks)

c) Explain in detail how this incident would be recovered. (10 marks)

d) What are your long-term actions to prevent a re-occurrence? (4 marks)

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Question 2 (total 20 marks)

You are the Mining Engineering Manager at a modern UG longwall mine that has a 2.9m seam with a 250m wide block and has encountered a hard dyke that is approximately 1.2m thick at chainage 2315m during the development of the main gate roadways.

The same dyke had been encountered at chainage 1982m in the tail gate roadways but wasn't as hard.

The total chainage of the block is 3800m.

The company General Manager wants you to investigate options of dealing with the dyke through this area.

a) Explain what you would do to determine this. (6 marks)

The decision has been made to retreat the longwall through this area.

b) Explain in detail how this could be safely achieved. (14 marks)

b) What are the signs / physical indicators that indicate a potential spontaneous combustion event? (4 marks)

c) List the triggers that you would have in your spontaneous combustion plan. (4 marks)

d) List the controls you would have in your spontaneous combustion plan. (4 marks)

e) Actions once a fire / spontaneous combustion is confirmed. (4 marks)

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Question 4 (total 20 marks)

You are the Mining Engineering Manager of a deep (375m) underground mine that has a drift winder for men and materials, a bulk winder for coal haulage, an upcast fan shaft and a down cast shaft for ventilation with a 2nd egress man riding cage.

An hour before the end of shift change on Dayshift the man riding cage has stopped at the 284m mark while coming up with the Production Manager, shift Undermanager, outbye Deputy & 2x fitters are in the cage.

The Electrical Engineering Manager then informs you that there has been a small fire in the surface electrical control panel and the repairs are expected to take 24 hours.

a) What are your immediate actions? (3 marks)

b) Who would you notify of this incident and why? (3 marks)

c) What would your longer-term actions be and a time frame around them? (14 marks)

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Question 5 (total 20 marks)

You are the Mining Engineering Manager of a mine that uses the “Herringbone System” of mining. The seam is 3.6m thick with a wet floor that breaks up in places. The lefthand side “runouts” are at 30m centres. At the end of each 105m “runout” a plunge is done both left and right.

During several of these plunges the roof has fallen in.

a) What is the importance of these plunges? (2 marks)

b) What are your immediate actions? (4 marks)

c) What are your long-term actions? (14 marks)

Question 8 – Open Cut (total 20 marks)

You are the Mining Engineering Manager of an open cut mine that has a washery attached on the lease.

Due to the increase in production over the last several years the current “tailings dam” is reaching its capacity.

A decision has been made to increase the size of the existing dam.

a) What are the options for increasing the size of the dam? (2 marks)

b) Select your preferred method.

c) What are the hazards with this method? (4 marks)

d) What are the controls for each hazard? (14 marks)

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