

New South Wales

**Board of Surveying and Spatial Information**

# **MINING LAW ASSESSMENT**

## **MINING SURVEYING**

### **Surveying and Spatial Information Act 2002**

(Mining Legislation)

Wednesday 27<sup>st</sup> February 2018

**All questions to be answered**

Duration 2 Hours

Pass Mark of 60% Required

1. As defined in AS 4368, what is the conventional colour for a fault?
2. As defined in AS 4368, sketch the symbol for a state survey mark.
3. As defined in AS 4368, sketch the symbol for a fire substation.
4. As defined in AS 4368, sketch the symbol for an open stope.
5. According to AS 2397, name 2 precautions required for the use of a Class 3R laser?
6. As described in the Work Health and Safety (Mines and Petroleum) Act 2013, what are 2 objects of the Act?
7. As described in the Work Health and Safety (Mines and Petroleum) Act 2013, what is the meaning of mining operations?
8. As described in the Work Health and Safety (Mines and Petroleum) Regulation 2014, define emplacement area.
9. As described in the Work Health and Safety (Mines and Petroleum) Regulation 2014, name 2 areas defined as the hazardous zone in an underground coal mine?
10. As described in the Work Health and Safety (Mines and Petroleum) Regulation 2014, when must the operator of a mine or petroleum site review a survey plan?
11. As described in the Work Health and Safety (Mines and Petroleum) Regulation 2014 Schedule 3, list 4 high risk activities.
12. Under the Surveying and Spatial Information Act 2002, what is the definition of a Formal Mining Survey Plan?
13. Under the Surveying and Spatial Information Act 2002, for the correction of survey errors who is the regulator?
14. Under the Surveying and Spatial Information Regulation 2017, how many days before the destruction of a permanent survey mark, must an application be made and who is this application made to?
15. Under the Surveying and Spatial Information Regulation 2017, what is the application of the Regulation?
16. As defined in Surveyor General's Directions No. 5, describe the term legal traceability.

17. As defined in Surveyor General's Directions No. 5, what are the 2 inherent systematic errors of EDM instruments that can be solved for, by using the NSW testlines?
18. As defined in Surveyor General's Directions No. 8, for a mining portion survey involving the surface, who can survey the surface area?
19. As described in ESG3, what is the purpose of a MOP?
20. As described in ESG3, who prepares a MOP?
21. As described in ESG3, when is a MOP required?
22. According to SP1 version 1.7, for horizontal angle observations, what is the minimum number of sets and number of rounds per set to achieve class D?
23. According to SP1 version 1.7, list 3 considerations relating to network design and geometry when planning a GPS survey.
24. Name four topics that should be covered with reference to Projection for a metadata statement to accompany information for an engineering data set
25. Name six categories of information to be covered in a metadata statement for the submission of mine workings spatial information.
26. What is the definition of a "closed mine," as described in Survey & Drafting Directions for Mine Surveyors (2015)?
27. What is the definition of "endorsement," as described in Survey & Drafting Directions for Mine Surveyors (2015)?
28. What are the requirements for survey books, as described in Survey & Drafting Directions for Mine Surveyors (2015)?
29. What is a surveyor declaring when signing the CD-R containing the copy of the Mine Survey Plan, as described in Survey & Drafting Directions for Mine Surveyors (2015)?
30. What are the requirements for the suspension of operations and the Mine Survey Plan, as described in Survey & Drafting Directions for Mine Surveyors (2015)?

Question 2 (10 Marks)

You are involved with a team of people undertaking a top soil survey in an exploration area for an open cut metalliferous mine.

People included in the team are ecologists, heritage specialists, plant operators, surveyors, land owners and representatives from a local environmental interest group.

- a) The Work Health and Safety Act 2011 states a number of instances where a person can be classified as a **worker**. Name 6 of them.
- b) The Act also defines the **duties of workers**, what are they?
- c) Give 3 examples of safety tools used to meet these obligations regarding health and safety.

Question 3 (10 Marks)

You are a registered mining surveyor at an open cut coal mine.

The mine has recently purchased part of a neighbouring underground coal mine that will require a partial transfer of a mining lease.

Detail the process and information to be provided to achieve a partial transfer of the lease and have the area included in the open cut's colliery holding.

Question 4 (10 Marks)

You are a newly registered surveyor for an open cut mining operation.

Upon undertaking a review of your mines current Approval, EIS and MOP, you discover that the Approved Mining Disturbance Boundary and Approved Open Cut Extents are outside of the granted ML boundary, but align with the Approvals MLA boundary as drawn.

Provide two solutions to fixing the issue you have discovered, detailing what would be required under current legislation to achieve these solutions.

Question 5 (10 Marks)

Part A (5 marks)

Historical research that you have undertaken for the area covered by the mine's lease has indicated the existence of old (abandoned) workings in the same coal seam as the operating mine that you work for.

Detail the sources of information that you would use and the steps that you would take to geo-reference the old workings in MGA.

What steps would you recommend be taken to confirm the extent of the workings?

Part B (5 marks)

You are required to carry out a mining survey on private property not owned by the mine and you have been unable to obtain consent from the landholder to access the property.

Detail what steps you could take under the Surveying and Spatial Information Act 2002 to gain entry and what this permits you to do.

### Question 6 (10 Marks)

You are the nominated mine surveyor at an existing open cut mine. One of the current mine baseline pillars has moved due to mining and blasting in a close proximity and the other end has been mined out.

You are required to install a brand new mine baseline in a suitable location and complete a GNSS network survey to derive co-ordinates for the baseline.

In relation to ISCM SP1 Guideline for the Installation and Documentation of Survey Control Marks, describe what type of survey marks you would use.

In relation to ISCM SP1 Guideline for Control Surveys and also Survey and Drafting Directions for Mine Surveyors 2015 (NSW-Mine), describe the method, process, standards, class and accuracy required in order to carry out the survey.

Your answer should include what information is required to be supplied to the government departments.