

New South Wales

Board of Surveying and Spatial Information

MINING LAW ASSESSMENT

MINING SURVEYING

Surveying and Spatial Information Act 2002

(Mining Legislation)

Monday 25th September 2023

All questions to be answered

Duration 2 Hours

Pass Mark of 60% Required

1. As defined by the Mining Regulation 2016, what is a Standard Map? (2 marks)
2. As defined by the Mining Regulation 2016, name two ancillary mining activities. (2 marks)
3. Under the Mining Act 1992, What is the maximum term of a Mining Lease? (1 marks)
4. Under the 'Mining Act 1992' all activity relating to mineral mining and exploration must be conducted in accordance with an issued authority. Name 2 of the 3 authorities. (2 marks)
5. What is required in order to be granted a Mining Lease? (1 mark)
6. In reference to the Mining Regulation 2016, what are two requirements to renew a mining lease. (2 marks)
7. As described in the Work Health and Safety (Mines and Petroleum Sites) Regulation 2022, when must the operator of a mine or petroleum site review and revise the survey plan? (3 marks)
8. As described in the Work Health and Safety (Mines and Petroleum Sites) Regulation 2022, give 4 examples of High Risk Activities as described in Schedule 3. (2 marks)
9. As described in AS4368 Mine plans – preparation and symbols, what is the conventional colour on a rescue plan for compressed air? (1 mark)
10. As described in AS4368 Mine plans – preparation and symbols, draw the symbol for a surface magazine. (1 mark)
11. As described in AS4368 Mine plans – preparation and symbols, what is the recommended grid spacing in metres on a 1:2000 plan? (1 mark)
12. As described in AS2397 Safe Use of Lasers, name the 2 mandatory precautions of class 2 lasers. (2 marks)
13. Under the Surveying and Spatial Information Regulation 2017, define *formal Board determinations*. (1 mark)
14. List four (4) Formal Board determinations. (4 marks)
15. In accordance with Surveyor-General's Direction No. 11, Preservation of Survey Infrastructure, name two things that must be addressed in an application prepared for a Mining Project. (2 marks)

16. With reference to Surveyor-General's Direction No. 12, Control Surveys and SCIMS, name two things that would be submitted to Spatial Surveys for the establishment of two new marks in SCIMS which are proposed to be adopted as a Mine Baseline. (2 marks)
17. Name one of the Instrument corrections that can be determined by the process outlined by Surveyor-General's Direction No. 5, Calibration of Electronic Distance Measuring (EDM) Equipment. (1 mark)
18. In relation to Archival Research guidelines, list the 4 of the preliminary research tools. (2 mark)
19. In relation to Archival Research guidelines, list 2 areas to be covered in researching a metalliferous mine. (1 mark)
20. In relation to 'FORM AND WAY Rehabilitation management plan for large mines' list 4 x Mining Domains. (2 mark)
21. With reference ICSM SP1 v1.7, define confidence region? (1 mark)
22. With reference ICSM SP1 v1.7, define accuracy? (1 mark)
23. When determining Class, the following formula is used in ICSM SP1 v1.7:
- $$r = c (d+0.2)$$
- Define r, c & d. (3 marks)
24. With reference to the Surveying and Spatial Information Act 2002 what is;
- Spatial information? (3 marks)
 - Where can it be located? (2 marks)
25. With reference to the Survey and Drafting Directions 2020, what mines may apply for a "Letter of Datum Reference" and who do they apply to? (2 marks)
26. With reference to the Survey and Drafting Directions 2020, where are surveys to originate from? (1 mark)
27. With reference to the Survey and Drafting Directions 2020, what are the requirements for GNSS survey equipment used in mining surveys? (1 mark)
28. With reference to the Survey and Drafting Directions 2020, define Control Surveys. (1 mark)

Question 2 (10 Marks)

You have recently commenced employment with a mining company and have been nominated by the operator to be the Registered Mining Surveyor for an underground precious metal mine which has been on care and maintenance for the past 5 years. Mining activity is known to have occurred in the area for over 100 years and the operator is proposing to recommence operations in an area where new exploration drilling has high grade ore exists.

- a) Outline what archival research you would undertake in order to know where mining has previously occurred and to understand what voids may exist in the vicinity of the proposed mining area. Ensure that you detail the sources of various information that you would seek out and comment on the special accuracy and limitations of this information. (7 Marks)

- b) Prior to re-commencing mining and with the archival now research available, outline what other activities should occur prior to commencement of mining. (3 Marks)

Question 3 (10 Marks)

You are the nominated registered mining surveyor at an open cut mine.

The mine is looking to relinquish one of its mining leases.

An investigation of the area has identified a number of sites that will need additional remediation work.

The remediation will involve removing some naturally regenerated trees and other vegetation, reshaping some spoil areas and rehabilitating the newly re-disturbed areas.

Detail the legislative process to undertake the remediation and the relinquishment of the mining lease.

Question 4 (10 Marks)

A surveyor is completing a traverse at an underground coal mine and is struck by the shuttle car. They sustain a broken leg and lacerations.

In relation to 'Work Health and Safety Act 2011' Incident notification:

a)

- What is a notifiable incident? (1.5 marks)
- Give 3 examples of a serious injury or illness. (1.5 marks)
- Give 4 examples of a dangerous incident. (2 marks)

b)

- Elaborate in detail on the obligations on what should happen after the surveyor has sustained these injuries. (5 marks)

Question 5 (10 Marks)

You the nominated mining surveyor at an open cut metalliferous mine that has had a tailings dam embankment failure. As a result of investigations, a complaint has been filed against you to the Board of Surveying and Spatial Information (BOSSI) for professional incompetence in carrying out a survey.

- a) What are the BOSSI committees and their functions that would investigate and consider appropriate action? (2 marks)

If found guilty of demonstrating professional incompetence in carrying out a survey, what are the actions that can be undertaken by the BOSSI? (3 marks)

- b) Pending the investigation of the complaint by BOSSI, you have decided to cease duties as the nominated mining surveyor. With reference to the Surveying and Drafting Direction for Mining Surveyors (NSW Mines) explain the requirements of the process and charting for the cessation of duties of the nominated mining surveyor. (5 marks)

Question 6 (10 Marks)

You are the nominated mining surveyor at an underground metalliferous mine that is transitioning from care & maintenance to normal production operations.

In regard to the Work Health and Safety (Mines and Petroleum Sites) Act 2013,

- a) Describe the objects of the Act and their relation to the mining operation. (4 marks)
- b) Define places and activities of the Act and their relation to the mining operation. (6 marks)