

New South Wales

Board of Surveying and Spatial Information

MINING LAW ASSESSMENT

MINING SURVEYING

Surveying and Spatial Information Act 2002

(Mining Legislation)

Wednesday 26th September 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, what is the conventional colour to be used on an electrical plan for power lines above 3,300 V?
3. As defined in AS 4368, sketch the symbol for an air compressor.
4. As defined in AS 4368, sketch the symbol for a gas drainage borehole.
5. As defined in AS 4368, sketch the symbol for a mains firing station.
6. As described in the Work Health and Safety (Mines and Petroleum) Act 2013, what 2 matters concerning safety must a government official give written notice to the operator for.
7. As described in the Work Health and Safety (Mines and Petroleum) Act 2013, name 3 dangers a mine safety and health representative carrying out an inspection at a coal mine must record the findings in book or record kept at the mine.
8. As described in the Surveying and Spatial Information Regulations 2017, what is the definition of an established survey mark?
9. As described in the Surveying and Spatial Information Regulations 2017, what are the qualifications for registration?
10. As described in ESG3, what is the term of a MOP and an extension if granted by the Department?
11. As described in ESG3, a MOP application may be granted only if the Department is satisfied that the MOP or MOP amendment covers what 3 areas?
12. Name 4 metadata attributes required for both metalliferous and coal mines spatial submissions?
13. Name the 3 compulsory file extensions that make up a shapefile and describe what they store?
14. With reference to ICSM SP1 v1.7, describe the difference between Class and Order.
15. With reference to ICSM SP1 v1.7, what 'c' value is used for a class B survey in the formula $r = c(d + 0.2)$?
16. With reference to ICSM SP1 v1.7, when completing a differential level run, what is the maximum sighting length for class LD?
17. With reference to ICSM SP1 v1.7, what is the allowable misclose for a 2km class LD differential level run?

18. With reference to the Mining Regulation 2016, name 4 purposes that a borehole or shaft may be used for as an ancillary mining activity.
19. With reference to the Mining Regulation 2016, what are the requirements for a standard map?
20. With reference to the Mining Act 1992, what are the requirements to undertake surface activities on a subsurface lease?
21. With reference to the State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007, name 3 types of development that may be carried out without a development consent.
22. With reference to the State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007, define mining.
23. With reference to the Work Health and Safety (Mines and Petroleum sites) Regulation 2014, define highwall mining.
24. With reference to the Work Health and Safety (Mines and Petroleum sites) Regulation 2014, define emplacement area.
25. With reference to the Work Health and Safety (Mines and Petroleum sites) Regulation 2014, when is the survey plan to be provided to the regulator?
26. With reference to the Work Health and Safety (Mines and Petroleum sites) Regulation 2014, what are the requirements for security of survey data?
27. With reference to the Surveying and Spatial Information Act 2002, what is the definition of a mining survey?
28. With reference to the Surveying and Spatial Information Act 2002, what is the meaning of spatial information?
29. With reference to the Survey and Drafting Directions for Mine Surveyors 2015 (NSW Mines), where are all surveys to originate from?
30. With reference to the Survey and Drafting Directions for Mine Surveyors 2015 (NSW Mines), what is the standard of accuracy required for a secondary survey employed to locate mine workings for a 1:500 plan?
31. With reference to the Survey and Drafting Directions for Mine Surveyors 2015 (NSW Mines), what are the requirements for the maintenance of survey equipment?

Question 2 (10 Marks)

You are the owner of a small survey company only employing yourself and an assistant.

You have been requested to provide survey assistance for shear vane testing to be carried out on a disused tailings dam prior preparation of a capping manual to be presented as a part of a High Risk Activity Application.

Detail the steps and processes that would enable you to go to site and complete the work.

Question 3 (10 Marks)

You are a registered surveyor working within an offsite Technical Services Department for a small coal mining company.

Your role is to provide survey services to current operations as well as providing survey support to all rehabilitation projects.

An area within one of the remote rehabilitation projects, which is now used for grazing, has collapsed and has smoke starting to emanate from the depression.

You have been tasked to provide a detail survey plan of the collapse and surrounding area for remediation works to begin.

You know that the area has numerous underground workings dating back to the turn of the century.

Explain the methodology you would use to undertake this detail survey, including any safety factors that need to be considered in the way you acquire this data.

Explain what you would do to research the area, including how you plan to link this data to your detail survey.

Question 4 (10 Marks)

You have recently taken over as the nominated mine surveyor at an underground coal mine. In order to confirm and verify the location of some existing underground workings you are required to locate the position (xyz) of two existing boreholes that are situated on private land using traditional traverse techniques.

In regards to the 'Surveying and Spatial Information Act 2002', as a registered surveyor what are your rights and duties to enter private land not owned by the mine and what survey duties can you perform on private land?

According to 'Survey and Drafting Directions for Mine Surveyors 2015' and 'ICSM SP1' what accuracy is required for control surveys and subsidiary surveys?

Also explain what survey methods will be used to locate the boreholes. Your answer should include the required amount of rounds measured, and the minimum requirements of the type of theodolite used.

Question 5 (10 Marks)

You are required to replace the current mine baseline for an underground metalliferous mine as one of the current marks will be disturbed by some infrastructure development.

What is the process to disturb the current baseline terminal and change the baseline?

Your answer should also include the requirements for a new letter of datum reference and what is to be shown on the Mine Survey Plan.

Question 6 (10 Marks)

- a. A series of redundant powerlines that no longer provide power to a mine site are on a mining lease.

The physical location of the poles as well as access to them, is a combination of private property and council land.

The mine wishes to rehabilitate the poles and wires, so that it can conduct a partial cancellation of the mining lease.

Briefly describe the process and considerations in order to conduct a partial cancellation of the mining lease. (7 marks)

- b. An 8-inch pipe provides water from a mine pit top to a shaft site. The pipe is in the local council road reserve but neither the mine nor council can provide evidence of the tenure of the pipe, and it is believed it may be there due to a handshake agreement. List 3 options that are available to the mine to increase the security of the tenure of the pipe. (3 marks)