

New South Wales

Board of Surveying and Spatial Information

MINING LAW ASSESSMENT

MINING SURVEYING

Surveying and Spatial Information Act 2002

(Mining Legislation)

Wednesday 26th February 2020

All questions to be answered

Duration 2 Hours

Pass Mark of 60% Required

1. As defined in AS 4368, what is the conventional colour to be used for power cables above 3,300V?
2. As defined in AS 4368, what is the line style to be used for 11kV power cables?
3. As defined in AS 4368, sketch the symbol for a surface explosives mixing station.
4. As defined in AS 4368, sketch the symbol for a gas drainage borehole.
5. As defined in AS 4368, what is the recommended maximum grid spacing on a plan regardless of scale?
6. With reference to the Archival Research Guideline available from Resources and Geoscience what areas should be covered with preliminary research?
7. With reference to the Archival Research Guideline available from Resources and Geoscience what are the requirements for a Level 3 accuracy rating for information?
8. With reference to the Archival Research Guideline available from Resources and Geoscience name 4 items to be covered in researching a metalliferous mine.
9. As described in the Work Health and Safety (Mines and Petroleum Sites) Act 2013, what is the meaning of “mining operations”?
10. As described in the Work Health and Safety (Mines and Petroleum Sites) Act 2013, what is the application of the Act in regards to places which the Act does and does not apply?
11. With reference to the Work Health and Safety (Mines and Petroleum Sites) Regulation 2014, what is the definition of highwall mining?
12. With reference to the Work Health and Safety (Mines and Petroleum Sites) Regulation 2014, what are the requirements for the location of an inrush control zone?
13. With reference to the Work Health and Safety (Mines and Petroleum Sites) Regulation 2014, what are the requirements with reference to light metal alloys and underground coal mines?
14. With reference to the Work Health and Safety (Mines and Petroleum Sites) Regulation 2014, high voltage electrical installations are required to be shown on the mine survey plan, how are these defined?
15. As described in the Surveying and Spatial Information Act 2002, what actions may be taken for professional incompetence?

16. As described in the Surveying and Spatial Information Act 2002, what is the definition of a mining survey?
17. As described in the Surveying and Spatial Information Regulation 2017, what is the application of the Regulation?
18. As described in the Surveying and Spatial Information Regulation 2017, define positional uncertainty.
19. As described in Surveyor-General's Direction No 5 Calibration of EDM Equipment, define legal traceability.
20. As described in Surveyor-General's Direction No 5 Calibration of EDM Equipment, define accuracy.
21. As described in Surveyor-General's Direction No 5 Calibration of EDM Equipment, define precision.
22. As described in Surveyor-General's Direction No 5 Calibration of EDM Equipment, define verification.
23. As described in Surveyor-General's Direction No 5 Calibration of EDM Equipment, define calibration.
24. With reference to ESG3, describe the MOP approval process.
25. With reference to ESG3, who prepares a MOP?
26. With reference to ESG3, what is the term of a MOP?
27. With reference to the Survey and Drafting Directions for Mine Surveyors 2015 (NSW Mines), define metadata.
28. With reference to the Survey and Drafting Directions for Mine Surveyors 2015 (NSW Mines), define 'endorsement'.
29. With reference to the Survey and Drafting Directions for Mine Surveyors 2015 (NSW Mines), define 'first workings'.
30. With reference to the Survey and Drafting Directions for Mine Surveyors 2015 (NSW Mines), what is the required positional accuracy for secondary surveys employed to locate mine workings at 1:1000 scale?
31. With reference to the Survey and Drafting Directions for Mine Surveyors 2015 (NSW Mines), describe the requirements where workings are to become inaccessible.
32. With reference to the Survey and Drafting Directions for Mine Surveyors 2015 (NSW Mines), name 3 purposes a borehole may be drilled for.

33. With reference to the Survey and Drafting Directions for Mine Surveyors 2015 (NSW Mines), name 4 minimum themes supplied for mine working spatial information required in 3D for an underground coal mine.
34. With reference to the Survey and Drafting Directions for Mine Surveyors 2015 (NSW Mines), what is the purpose of the shapefile format with extension ending in .shx?
35. With reference to the Surveying and Drafting Directions for Mine Surveyors 2015 (NSW Mines), when date attributes of workings are not accurately known, give an example of how it should be recorded.
36. With reference to the Surveying and Drafting Directions for Mine Surveyors 2015 (NSW Mines), to what precision should spatial themes be provided?

Question 2 (10 Marks)

The open cut mine you are employed at is looking at raising the height of the approved final land form to accommodate more spoil and incorporate micro-relief in to the final shape.

Detail the process to achieve this goal.

Question 3 (10 Marks)

Q3a (5 marks)

The Surveyor General has approved the destruction of a State Survey Mark that is proposed to be removed by open cut mining. The approval given under section 24 of the Surveying and Spatial Information Act 2002 comes with a condition that requires a replacement mark to be placed in the vicinity of the old mark, but in an area that will not be influenced by mining. The new mark is to be established to the same Class as the mark that it will replace, being Class B for both position and height. Detail with reference to ICSM SP1 version 1.7, the recommended practices to be adopted in the survey of the new mark.

Q3b (5 marks)

One of the Permanent Marks that is to be used in the survey of the new mark is located on private land owned by a party who is not supportive mining in the area. Detail what course of action is available to you as a Registered Mining Surveyor at the Mine, if the landholder will not agree to allow representatives of the Mine, to access the property.

Question 4 (10 Marks)

The open cut mine you are employed at is looking to establish an emplacement area on land currently owned by the mine adjacent to the current mining tenure.

Detail the information to be provided and who can complete the various sections to get an ancillary mining activity condition added to one of the mine's existing leases to cover the proposed emplacement.

Question 5 (10 Marks)

A young surveyor was instructed with minimal notice to install roof marks for a drive head installation underground. The entire mine site was reliant upon the completion of this task and the surveyor was under pressure to complete it as soon as possible. The only equipment available to reach the roof was a ladder. The surveyor didn't feel comfortable using a ladder due to excessive roof height but continued due to the timeframe issues and they were inexperienced and unaware of their rights for refusing to carry out a task. Whilst they were standing on the ladder they slipped and fell braking their wrist.

In regards to the Work Health and Safety Act & Regulations,

- What rights did the surveyor have?
- Due to the broken wrist, elaborate on the 'Part 3 Incident notification.'
- Detail how you would safely conduct this work.

Question 6 (10 Marks)

You are the nominated Mine Surveyor for a recently opened underground coal mine. The mine has developed approximately 700m inbye.

In relation to Work Health and Safety (Mines and Petroleum Sites) Regulation 2014, detail what must be shown on the plan, elaborate on security of data and who the plan has to be made available to.

With reference to ICSM (2007) SP1 (version 1.7) and the Survey & Drafting Directions for Mine Surveyors 2015, explain in detail how you would transfer control from the surface mine baseline underground.