

New South Wales

Board of Surveying and Spatial Information

MINING LAW ASSESSMENT

MINING SURVEYING

Surveying and Spatial Information Act 2002

(Mining Legislation)

Wednesday 26th March 2014

All questions to be answered

Duration 2 Hours

1. As stated in AS4368 what is the conventional colour to be used for ***underground barrier pillars***?
2. Sketch the following symbols as defined in AS4368 Mine Plans – Preparation and Symbols?
 - a. Survey Station - Surface
 - b. Fire Depot
 - c. Drift, Surface to Underground
 - d. Underground Magazine.
3. What is the definition of a ***Control Survey*** as described in the Survey and Drafting Directions for Mine Surveyors 2013?
4. What is the definition of a ***Nominated Mining Surveyor*** described in the Survey and Drafting Directions for Mine Surveyors 2013?
5. By signing and dating the Certification of Accuracy what 2 things is the Nominated Mining Surveyor declaring in the Survey and Drafting Directions for Mine Surveyors 2013?
6. What are the duties of the Nominated Mining Surveyor as described in the Survey and Drafting Directions for Mine Surveyors 2013?
7. What is the reporting period for the supply of *Mine Workings Plans and Mine Working Spatial information* to the Director General as stated in the Survey and Drafting Directions for Mining Surveyors 2008?
8. What is the definition of an ***Subsidiary Survey*** as described in the Survey and Drafting Directions for Mining Surveyors 2008.
9. What are the minimum themes stated in the Survey and Drafting Directions for Mining Surveyors 2008 that are required to be shown in an;
 - a. Underground Mine?
 - b. Surface Mine?
10. What 2 themes are required by the Survey and Drafting Directions for Mining Surveyors 2008 to be shown on a Void Plan for an Open Cut Mine?
11. As per the Coal Mine Health and Safety Act 2002 define colliery holder.
12. As per the Coal Mine Health and Safety Act 2002 what directions may the Minister give the operator of coal operation regarding barriers and pillars?
13. As per the Coal Mine Health and Safety Regulation 2006 what must the survey and plan arrangements cater for?

14. As per the Coal Mine Health and Safety Regulation 2006 when must the mine record tracing be sent to the director general?
15. As per the Coal Mine Health and Safety Regulation 2006 what are the duties of mining surveyors?
16. As per the Mine Health and Safety Act 2004 define an abandoned mine.
17. What obligations does the operator of a mine have concerning the mine safety management plan as described in Mine Health and Safety Act 2004?
18. Who may prepare plans for the control of risk of inrush under the Mine Health and Safety Regulation 2007?
19. What are the duties of a mining surveyor under the Mine Health and Safety Regulation 2007?
20. What are the requirements for plans of mines to be abandoned under the Mine Health and Safety Regulation 2007?
21. What is the definition of a *mining survey* under the Surveying and Spatial Information Act 2002?
22. What is the definition of a *formal mine surveying plan* under the Surveying and Spatial Information Act 2002?
23. What is the definition of a *registered surveyor* under the Surveying and Spatial Information Act 2002?
24. What action may the Board take against a registered surveyor who is guilty of professional misconduct under the Surveying and Spatial Information Act 2002?
25. What does professional misconduct, in relation to a registered surveyor mean under the Surveying and Spatial Information Act 2002?
26. Define *monument* as per the Surveying and Spatial Information Regulation 2012.
27. Define *student of surveying* as per the Surveying and Spatial Information Regulation 2012.
28. List 5 Primary Domains (Operational) for use in Mining Operations Plan under the ESG3 Guideline.
29. List 5 Secondary Domains (Post Mining Land Use) for use in Mining Operations Plan under the ESG3 Guideline.

30. Name three components which *Class* is function of in horizontal control with reference to ICSM SP1 version 1.7
31. Name the variables in the formula $r=c(d+0.2)$ used for calculating Class for GPS or trigonometric heighting in ICSM SP1 version 1.7
32. How many sets of full measurements are required for EDM observations to achieve Class D and what is the allowable range of fine readings in ICSM SP1 version 1.7?

Question 2 (10 Marks)

Part A

The mine that you work for has copies of Mine Plans and/or Record Tracings for known mines within the Mining Lease.

List the potential issues with these records that should be considered prior to using these documents for mine planning purposes.

Part B

Assuming that the documents outlined in Question 2A above are used to produce Mine Working Spatial information, outline which Mine Workings Digital Theme you would compile the data as and which attribute/s you would use to draw attention to it.

What lineage and accuracy statements would you include in the Metadata statement for this theme?

Question 3 (10 Marks)

You are the Nominated Mine Surveyor at a metalliferous open cut mine where planned expansion of the pit will destroy one of the survey pillars currently used as the mine baseline.

What steps would you need to take as described in Surveyor General Directions No 11, regarding the procedure to follow to re-establish a permanent mark destroyed by mining activity?

Also describe 5 things required to be shown in a **Locality Sketch Plan** for a permanent mark in a rural area as described in Surveyor General Directions No 2?

Question 4 (10 Marks)

You are the Nominated Mining Surveyor for an underground Coal Mine using the Longwall method of extraction and the Department has requested that surface subsidence monitoring surveys be carried out at defined intervals during the extraction process.

The area to be surveyed is remote from the mine's surface facilities, has poor and patchy communications coverage and significant subsidence and surface cracking is predicted.

Outline what issues need to be considered and detail the process you would follow to ensure that the survey party is not exposed to an unacceptable level of risk to health and safety.

Question 5 (10 Marks)

As a surveyor for an open cut mine you have been instructed to prepare applications to augment an existing emplacement area wall.

The emplacement area is within the main coal lease boundary but the new wall will extend over an area where the coal lease starts at a specific depth.

Describe the process and what should be included in these applications.

Question 6 (10 Marks)

The Mining Act 1992 grants Rights in the form of Exploration Licences, Assessment Leases, Mining Leases, Mining Purposes Leases, Consolidated Mining Leases and Opal Prospecting Licences.

Describe in detail the Rights granted the Term and Development Consent requirements for an Exploration Licence, Assessment Lease, Mining Lease, Mining Purposes Lease and Consolidated Mining Lease.