

EXAMINATION PAPER

Deputy of underground coal mines certificate of competence

Coal mining practise and legislation

Written examination 19 June 2019

Instructions to candidates

Unless otherwise stated all references to the Act and Regulations are to the:

- *Work Health and Safety Act 2011*
- Work Health and Safety Regulation 2017
- *Work Health and Safety (Mines and Petroleum Sites) Act 2013*
- Work Health and Safety (Mines and Petroleum Sites) Regulation 2014
- *Explosives Act 2003*
- Explosives Regulation 2013

Question 1

A development miner panel has just encountered a hard igneous dyke. The cutter head on the miner has sparks coming from the head region and upon inspection, there are a number of cutter picks that are blunt. There is also CH₄ and water emitting from the dyke. As a deputy at the mine:

- a) What are your actions? (5 marks)
- b) What further actions should you take before restarting production? (5 marks)

Question 2

You are a deputy in a longwall production panel. A worker reports to you that there is some guttering along the face line with some face spall occurring.

- a) What are your actions? (5 marks)
- b) What further actions should you take before restarting production? (5 marks).

Question 3

You are the deputy in charge of a longwall production crew. On your shift a licenced auditor under Order 42 is to undertake airborne dust sampling on your crew during production.

- a) What information and assistance are you required to deliver to the licenced auditor? (5 marks)
- b) What are the exposure standard limits for a time weighted average of 8 hours for airborne dust? (2 marks)
- c) A period of weeks have lapsed after the sampling and the results show one of your workers, a longwall support operator, has failed his airborne dust sample on quartz. What must happen after this result? (13 marks)

Question 4

You are the only deputy on site and responsible for the safe repowering of a small board and pillar operation. During your pre-shift activities, you are advised by your control room operator that the collar pressure of the main fan (running across the weekend) has dropped 400 pascals to 60% of its normal operating mine pressure.

- a) In your own words, describe the process you would undertake to rectify the situation. (5 marks)
- b) Please outline your investigation steps, along with the resources and notifications you may utilise. (5 marks)

Question 5

You are a deputy in charge of an operating longwall. You are currently on production when you receive a report that one of your crew members has been in the vicinity of a high-pressure fluid release in the tailgate region of the longwall.

Upon first aid treatment the skin appears red and the worker is complaining of soreness.

- a) In your own words, describe the process you would undertake to assist and rectify the situation. (5 marks)
- b) Please outline your investigation steps, along with the resources and notifications you may utilise. (5 marks)

Question 6

You have been tasked by your undermanager to assist in writing a procedure for the use of an auxiliary fan in a continuous miner development panel.

Outline in your response, the key safety and operational checks you would insist are in the procedure.

Your answer should be in dot point form addressing the matters from a deputy's point of view. (10 marks)

Question 7

The *Work Health and Safety Act 2011* outlines in Section 18; What is 'reasonably practicable' in ensuring health and safety.

Please explain your understanding of this. (5 marks)

Question 8

The *Work Health and Safety (Mines and Petroleum Sites) Act 2013* outlines in Section 14; What is a 'notifiable incident'.

In your answer, and as a deputy, explain:

- a) Your understanding of a 'notifiable incident'. (2.5 marks)
- b) The differences in urgency between the reporting of a 'notifiable incident' versus a 'high potential' incident (as defined in c128 of the *Work Health and Safety (Mines and Petroleum Sites) Regulation 2014*. (2.5 marks)

Question 9

A modern coal mine, where you are about to be employed as a deputy, operates the longwall mining process to extract coal.

Please explain the following:

- a) What is the 'one web back system'? (2 marks)
- b) What is the 'snake'? (2 marks)
- c) Why are measurements displayed along the roof of the longwall block in the tailgate and maingate drivage? (2 marks)
- d) What must be operating at all times whilst coal is produced? By what amount? (2 marks)
- e) Where is the methanometer/s on the longwall face? (2 marks)

Question 10

- a) What is fatigue management? (3 marks)
- b) How should a mining company manage this? (3 marks)
- c) As a mine supervisor, how do you manage this? (4 marks)

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