

SUBJECT 7.—Arithmetic, and a Knowledge of the Coal-mines Act, 1908, and Amendments; also First Aid to the Injured.

1. If 1 ton of coal when burnt produces on the average 69 lb. of ash, clinker, &c., what weight of ash will be produced in a year of 365 days by the coal burnt under a set of boilers requiring 700 lb. of coal per hour? Give your answer in tons.
2. Extract the square root of 718567 correct to two places of decimals.
3. If 48 trucks require 6 pints of oil per day, how much oil will be needed for 256 trucks during a month of 26 working-days? Answer to be in gallons.
4. A rectangular field is 220 yards by 176 yards. What is its area in acres? If it is underlain by a coal-seam 7 ft. thick, calculate the tonnage of coal on the assumption that 1 cubic foot of coal weighs 80 lb.

First Aid to the Injured.

1. Why is a knowledge of first aid desirable in mine officials?
2. How would you render first aid in the case of a broken lower arm?
3. Carefully describe one of the approved methods of artificial respiration.
4. What is meant by the terms (a) simple fracture, (b) compound fracture?
5. Give a brief description of the circulation of the blood, and of the organs concerned therewith.

LIST OF PERSONS WHO HAVE OBTAINED CERTIFICATES UNDER THE COAL-MINES ACTS.

FIRST-CLASS MINE-MANAGERS' CERTIFICATES.

Issued under the Coal-mines Acts, 1886 and 1891.

Aitken, T., Wendon.	Gray, J., Abbotsford.	*Redshaw, W., Whangarei.
Alexander, T., Brunnerton.	*Harrison, J., Brunnerton.	Reed, F., Westport.
Austin, J., Sheffield.	Irving, J., Kaitangata.	*Richardson, D., Abbotsford.
Binns, G. J., Dunedin.	Jemison, W., Waimangaroa.	Shore, J., Kaitangata.
Bishop, J., Brunnerton.	*Kenyon, J., Shag Point.	Shore, T., Orepuki.
*Brown, T., Westport.	Kerr, G., Kamo.	*Shore, W. M., Kaitangata.
Brown, T., Glentunnel.	*Lindsay, W., Otago.	*Smart, W., Christchurch.
Cameron, J., Denniston.	Lloyd, J., Invercargill.	Smith, A. E., Nelson.
Campbell, J. C., Fairfield.	*Louden, J., Green Island.	Smith, T. F., Nelson.
Cochrane, N. D., Dunedin.	Love, A., Whangarei.	Sneddon, J., Mosgiel.
Collins, W., Taupiri.	Mason, J., Nightcaps.	Swinbanks, J., Kawakawa.
Dando, M., Brunnerton.	May, J., Greymouth.	Taylor, E. B., Huntly.
*Elliott, R., Wallsend.	Moody, T. P., Kawakawa.	Thompson, A., White Cliffs.
*Ferguson, A., White Cliffs.	Moore, W. J., Springfield.	Walker, J., Collingwood.
*Freeman, J., Green Island.	*Nelson, J., Green Island.	Williams, W. H., Shag Point.
*Geary, J., Kamo.	Ord, J., Huntly.	

Issued under the Coal-mines Acts, 1886, 1891, 1905, and 1908, after Examination.

Armitage, F. W., Auckland.	Fletcher, James, Granity.	McCormack, W., Denniston.
Armstrong, J., Brunnerton.	Fox, R. A., Denniston.	McEwan, Robert, Coromandel.
Barclay, T., Kaitangata.	Fry, Sydney, Waimangaroa.	McGeachie, J., Mokau.
Barclay, W., Kaitangata.	Gibson, John, Westport.	Milligan, J., Denniston.
Bennie, Boyd, Waihi.	Gillanders, A., Shag Point.	Milligan, N., Westport.
Bishop, T. O., Reefton.	Gowans, W., Millerton.	Morgan, William, Waihi.
Brown, J. C., Denniston.	Green, E. R., Abbotsford.	Murray, T., Westport.
Campbell, Peter, Fairfield.	Green, J., Brunnerton.	*Newsome, F., Denniston.
Carruthers, J., Shag Point.	Hamilton, J. S., Burnett's Face.	Newton, James, Brunnerton.
Carson, W., Kaitangata.	Herd, J., Brunnerton.	Shore, Joseph, Kaitangata.
Coombe, J., Waihi.	Heycock, C. R., Nightcaps.	Smith, George, Fairfield.
Coulthard, J., Taylorville.	Hill, Robert, Abbotsford.	Sowerby, H., Denniston.
Dixon, C. W., Granity.	Hosking, G. F., Auckland.	Tattley, E. W., Huntly.
Dixon, W., jun., Kaitangata.	Hughes, D., Preservation Inlet.	Tattley, F. J., Mercer.
Duggan, George, Burnett's Face.	*Jebson, D., Canterbury.	Taylor, A. H., Waikato.
Dunn, Andrew, Denniston.	Johnson, W. P., Thames.	Thomson, Thomas, Denniston.
Dunn, W., Brunnerton.	Leitch, J., Blackball.	Turner, G. F., Shag Point.
Dunn, W. R., Thames.	Leitch, W., Blackball.	Westfield, C. H., Fairfield.
Elliott, R., jun., Denniston.	Marshall, A. G., Denniston.	Young, James H., Waimangaroa.
Fleming, J., Kaitangata.	McCaffrey, Patrick, Ferntown.	

* Deceased since issue of certificates.