

1890.
NEW ZEALAND.

EXAMINATION - PAPERS FOR MINE - MANAGERS' CERTIFICATES

(COPIES OF).

Return to an Order of the House of Representatives, No. 14, dated the 27th June, 1890.

Ordered, "That a copy of the examination-papers for mine-managers' certificates be laid before this House."—
(Mr. ALLEN.)

QUESTIONS TO BE USED IN EXAMINATION OF MINING MANAGERS FOR CERTIFICATES OF COMPETENCY UNDER "THE MINING ACT, 1886."

FIRST DAY (9 a.m. to 12 noon).

Subject 1.—The laying-out and construction of shafts, chambers, main drives or levels, uprisings, and stopes:—

(a.) Describe the method you would adopt in sinking a shaft through quicksand, and also show by sketch the appliances you would use in sinking.

(b.) Show by sketch what is meant by chambers and adit-levels, and also give the dimensions of same, and state what distance you consider adit-levels should be apart to work a lode advantageously, and give your reasons for the distance so mentioned.

(c.) State the dimensions of uprisings or passes to work a lode, and the distance that they should be apart, giving reasons for same.

(d.) Show by sketch how you would open out from a shaft to work alluvial ground, and also show how you would block out the ground from the main adit-level; and state at what level in relation to wash-drift you would construct the main adit-levels.

(e.) Show by sketch the approved method of stoping out lodes, and state your opinions as to the best method of stoping in order to get as many workmen employed advantageously as possible.

Subject 2.—The various methods adopted in timbering shafts and mines, and in filling in old workings:—

(a.) In commencing to timber a shaft, state how you proceed to place the first set of timber in, and the necessary precautions that have to be taken to keep the shaft truly vertical, and to keep it from twisting or winding. Also state the thickness of planking necessary for timbering a shaft having two partitions for winding, one for pumps, and one for ladder-shaft, giving the dimensions of winding-shafts suitable to work cages, the ladder-shaft, and also the dimensions of a shaft to place a 12in. column of pumps, having three different lifts and a tank placed at change of lifts in the shaft.

(b.) Show by sketch how you would timber a shaft with planking and also with frames, and also show how you would fix the partitions in the shaft and guides for working cages.

(c.) Show by sketch how you would chamber a shaft at the change of lifts in the event of its not being of sufficient dimensions, in order to make room for pumps being placed in position.

(d.) How do you ascertain the strength of beams and timber used in a mine? Suppose a beam of red-pine 10in. broad and 14in. deep, with 8ft. between the supports, what would be its breaking-strength assuming it to be loaded at the centre of the span, and also if it were uniformly loaded?

(e.) If a prop of round totara timber were required 6ft. long to support a load of 20 tons, what diameter would it require to be to support this weight?

(f.) If you had to construct an adit-level through soft pug, show by sketch how you would timber it.

(g.) In constructing an adit-level, if you met with quicksand what precautions would you adopt, and how would you proceed to carry the adit through the quicksand?

(h.) State how you would timber passes, and what provision you would make to allow the workmen to get up and down from the stopes.

(i.) If you were constructing adits through loose or heavy ground liable to run, what precaution would you adopt to secure the timber so that if one set broke down it would not carry other sets along with it?

(2 p.m. to 5 p.m.)

Subject 3.—The drainage of mines, and pumping-appliances:—

(a.) Show by sketch the method of fixing supports in shafts for pumps and rising mains.

(b.) Show by sketch how you would arrange the lifts in an 18in. pumping-plant consisting of five lifting sets and one forcing set, the shaft being 1,000ft. deep and the water to be pumped to the surface.

(c.) What is a balance-bob or -beam? In what position is it fitted, and for what purpose?

(d.) What is a V-bob? In what position is it fitted, and for what purpose?

(e.) What is a snifter-valve or wind-bore, where fitted, and for what purpose?