

- β. Defence of breach, object, requirements how carried out.
Countermine systems.
- b. *To the Attack.*
- α. On countermines under glacis, tactics of assailant, ordinary method of attack by galleries, attack by shaft mines.
- β. On countermines for defence of breach.
- γ. On escarp and counterscarp revetments to form breach.
- c. *To demolition of permanent works after capture or during peace.*

Plates—

- VII. Siege works.
- VIII. Countermine systems.
- IX. Attack on a system of countermines.

FAIR NOTES on lectures during the term.

EXERCISES—Examples on application of mining; Journal of attack on countermines.

SUBJECTS OF EACH EXAMINATION—

JUNE—Whole subject.

MARKS—

For work done during term.....	200
For examination, June	300
Total	500

1ST CLASS.

OBLIGATORY.

USE OF EXPLOSIVES FOR MILITARY ENGINEERING PURPOSES.

EXPLOSIVES generally employed. Consideration of these explosives from a military engineering point of view.

The nature, properties and manufacture of explosives is dealt with in the Artillery and Chemistry Courses.

Gunpowder—Size of grain most suitable for military engineering purposes.

Gun-cotton—Shapes and sizes in which the compressed gun-cotton is supplied and uses to which each shape and size is put. Advantages of the property of detonating unconfined, whether wet or dry. Primer of dry gun-cotton to detonate wet gun-cotton. Drying gun-cotton. Test for dryness of gun-cotton.

Dynamite—Cartridges in which usually supplied. Advantages of its property of detonating unconfined.

Fulminate of Mercury—Other explosives that may be used.

CONSTRUCTION OF MAGAZINES for the storage of explosives. Object. Requirements general and according as the magazine is intended for gunpowder or gun-cotton, and whether exposed to artillery fire or not. How fulfilled in each case.

METHOD OF USING EXPLOSIVES. (Land operations only.)

The *charge* proper. General remarks on making up.

The *fuze*, or the immediate cause of the explosion of the charge. Various kinds of fuzes, and how used.

Means of determining explosion of fuze—

By concussion.

Cases in which applicable and general arrangements to be adopted.

By slow or quick match.

Cases in which applicable.—Description of the various kinds of slow and quick match, and how used.

BY ELECTRICITY.

Cases in which applicable. Its general consideration. Sources of Electricity distinguishing between those required for use of low tension fuses and those required for