

## DEPARTMENTAL EXAMINATIONS, JULY 1895.

The usual Normal School entrance Junior leaving examinations, and Junior matriculation examinations, will be held in July, 1895, in accordance with the provisions of Reg. 31, 3, (1) and Reg. 45 of School Manual.

1. *Normal School Entrance.*—All candidates for admission to the Normal School in September, 1895, and all holders of second or third class licenses who propose to enter the Normal School in January, 1896, or to become eligible for examination for advance of class in June, 1896, are required to pass the preliminary examinations in July, 1895. (See School Manual, Reg. 31, 3, and Reg. 38, 6.)

2. *Junior Leaving Examinations.*—This examination will be based upon the requirements of the course of study for grammar and high schools as given in the syllabus for Grades IX and X.

The pupils of any school in the province are eligible for admission to this examination upon giving notice on or before the 24th of May, to the inspector within whose inspectorate he wishes to be examined, and enclosing an examination fee of two dollars. (See Manual, Reg. 45, 14). Diplomas are granted to successful candidates.

3. *Junior Matriculation Examination.*—This examination will be based on the requirements for matriculation in the university of New Brunswick as laid down in the university calendar (candidates will receive a calendar upon application to the chancellor of the university, or to the education office). Any high or grammar school pupil who has completed Grade XI of the high school course should be prepared for matriculation.

In cases in which the language studies of the high school course are different from the language studies as indicated in the university calendar, candidates may take either course by giving notice at the time of making application for examination. (See Manual, Reg. 45, 14).

The English literature for the closing examinations for license in June, 1895, and for the junior leaving examination, will be Shakespeare's *Merchant of Venice*, and Macaulay's *Essay on Warren Hastings*.

## COURSES OF STUDY.

The following corrections in the printed course of instruction for primary and advanced grades, should be carefully noted by teachers:

GRADE V. *Geography and History.*—Add "Outlines of British History, as in Reader IV, Part I."

GRADE VI. *History.*—Instead of last sentence, read "Outlines of British History, as in Reader IV, Parts II and III."

*Course for ungraded country schools:*

GRADE IV. *History.*—As in Grades V and VI of foregoing course.

GRADE V. *History.*—As in Grades VII and VIII of the foregoing course.

*Course for grammar and high schools:*

The following experimental course in Physics, Grade IX, should be followed as closely as the circumstances of the school may permit:

## COURSE IN PHYSICS IN GRADE IX.

1. A few experiments to illustrate ideas of matter, molecules, force, energy, conservation of mass, conservation of energy.
2. Measure the action of gravity upon several bodies, using both avoirdupois and metric weights.

3. Measure the cohesive force of two wires of different diameter, of different materials.

4. Calculate the elastic force of a steel band or spring.

5. Measure the height to which water will rise in tubes of different bore; measure the capillary action of same tubes in mercury.

6. Measure the pressure of the air in the school-room, and demonstrate its pressure in all directions. (Construction of barometer).

7. Deduce Mariotte's law from experiment.

8. Measure the effect of pressure on the surface of a confined body of water. (Hydrostatic bellows).

9. Ascertain the effect of gravity upon the pressure of water at different depths.

10. Demonstrate by experiment and measurement the "Hydrostatic paradox."

11. Measure the buoyancy of water and find the specific gravity of several bodies by its aid.

12. Deduce from measurements the law of the lever.

13. Measure the action of a pulley and a system of pulleys.

14. Measure the action of the inclined plane.

15. Deduce the general law of machines.

16. A few simple experiments illustrating the conduction of heat in solids and liquids, and convection in liquids and gases.

17. Demonstrate experimentally the expansion of solids, liquids and gases by heat, and show its effect on the expansive force of air and steam.

18. Ascertain by experiment the boiling point of water and of another liquid, and their melting (or freezing) points, and measure the effect of the changes of temperature upon their volume. (Construction of thermometer).

19. Ascertain the temperature of two freezing mixtures.

20. Demonstrate experimentally the law of the diffusion of heat.

21. Show by experiment and measurement that equal quantities of heat applied to equal weights of different substances raise their temperatures unequally.

22. Demonstrate by a few simple experiments the generation of electricity by friction and by induction.

23. Construct a Voltaic cell and measure the electro-motive force, the resistance and strength of current.

24. Decompose water and one salt by electricity.

25. Make an electro-magnet and a permanent magnet and measure their power.

26. Demonstrate experimentally the directive power of a magnet.

27. Demonstrate experimentally the cause of sound, and illustrate the difference between the loudness, pitch and quality of sounds.

28. Deduce, by the aid of a sonometer, the law of variation in the vibration-numbers of strings.

29. Simple experiments illustrating the propagation and dispersion of light and the formation of shadows. Umbra and penumbra.

30. Deduce from experiment the law of the reflection of light.

31. Demonstrate experimentally the refraction of light.

32. Deduce from experiment the law of inverse squares in the case of the intensity of light.

33. Show the effect of a convex lens as a magnifier and as a "burning glass," and measure its focal length.

34. Perform the prismatic analysis and synthesis of light. (The solar spectrum. The cause of color).