

## Everything You Need to Know About the AST Ministry Exam

The ministerial examination, commonly known as the *ministry exam*, is a compulsory written exam that students take at the end of Secondary IV. It counts for 50% of the theory component mark. The exam is divided into 3 parts, and students have 3 hours and 15 minutes to complete it.

### An Exam Divided in 3 Parts

Part	Question Type	Number of Questions	Number of Questions in Each Major Area		
			Earth and Space	Material World	Technological World
A	Multiple-choice	15	1	9	5
B	Constructed-response	4	1	2	1
C	Technological analysis	6	1	0	6

### Documents Provided

- Student Booklet (parts A, B, and C)
- Scannable answer sheet (Part A)
- Reference document
  - List of formulas and quantities
  - Diagrams of the technical object

### Authorized Materials

- Pencils
- Ruler
- Calculator



**Forbidden**

Any data or programs stored on a calculator must be deleted before the exam.



# AST Concepts Subject to Assessment

## Material World

### Chemical Changes

- ☐ Oxydation
- ☐ Combustion

### Electricity and Magnetism

- ☐ Electrical charge
- ☐ Static electricity
- ☐ Ohm's law
- ☐ Electrical circuits
- ☐ Relationship between power and electrical energy
- ☐ Forces of attraction and repulsion
- ☐ Magnetic field of a live wire
- ☐ Magnetic field of a solenoid
- ☐ Electromagnetic induction

### Energy Transformations

- ☐ Law of conservation of energy
- ☐ Energy efficiency

### Fluids

- ☐ Archimedes' principle
- ☐ Pascal's principle
- ☐ Bernoulli's principle

### Force and motion

- ☐ Force
- ☐ Types of forces
- ☐ Equilibrium of two forces
- ☐ Relationship between constant speed, distance and time
- ☐ Mass and weight

## Technological World

### Graphic Language

- ☐ Multiview orthogonal projection (general drawing)
- ☐ Functional dimensioning
- ☐ Developments (prism, cylinder, etc.)
- ☐ Diagrams and symbols

### Mechanical engineering

- ☐ Adhesion and friction of parts
- ☐ Linking
- ☐ Degree of freedom
- ☐ Guiding controls
- ☐ Motion transmission systems
- ☐ Speed Changes
- ☐ Motion transformation systems

### Manufacturing

- ☐ Drilling
- ☐ Bending
- ☐ Tapping
- ☐ Threading

### Materials

- ☐ Contraints
- ☐ Properties of materials
- ☐ Plastics
- ☐ Ceramics
- ☐ Degradation and protection

### Electrical engineering

- ☐ Power supply
- ☐ Conduction
- ☐ Protection
- ☐ Insulation
- ☐ Control
- ☐ Types of switches
- ☐ Energy transformation
- ☐ Resistors and their colour code
- ☐ Condenser
- ☐ Diode
- ☐ Relay

## Earth and Space

- ☐ Catchment areas
- ☐ Cyclones and anticyclones
- ☐ Earth-Moon system (gravitational effect)
- ☐ Energy resources

## Study tools

### Summary by Major Area



Material  
World



Earth and  
Space



Technological  
World

## Practice Tools



Part A



Part B

### Technological Analysis



Carousel



Food dispenser



Conveyor toaster