

## AUTO ELECTRICAL WORKS

### EXAMINATION SCHEME

There will be three papers, Papers 1, 2 and 3, all of which are to be taken. Papers 1 and 2 shall be a composite paper to be taken at one sitting.

**PAPER 1:** will consist of forty multiple-choice objective questions all of which are to be answered in 45 minutes for 40 marks.

**PAPER 2:** will consist of six short-structured questions. Candidates will be required to answer any four in 1 hour for 60 marks.

**PAPER 3:** will be a practical test of 2 hours duration. It will consist of three skill-based questions out of which candidates will answer two for 90 marks.

A list of materials for the test shall be made available to schools not less than two weeks before the paper is taken for materials procurement and relevant preparations.

#### Alternative to Practical Test:

The Council may consider testing candidates' ability in practical work as prescribed in the syllabus in the event that materials for the actual practical test cannot be acquired. For this alternative test, there will be two compulsory essay questions to be answered in 2 hours for 100 marks.

#### Industrial Attachment:

This should be done by the candidates during the long vacation between their SS II and SS III course. It will be supervised and assessed by their subject teachers. It will carry 10 marks.

### SAMPLE QUESTIONS

#### PAPER 1 OBJECTIVE

1. The function of a relay in the lighting system of a motor vehicle is to
  - A. relieve the switch of the main current load.
  - B. relieve the switch of the main voltage load.
  - C. act as a transformer.
  - D. act as a stabilizer.

2. When the starting motor in a vehicle does not crank the engine, the first thing to check is the
  - A. battery.
  - B. wiring and cables.
  - C. solenoid.
  - D. starting motor.
3. A device that reduces arcing of the contact breaker point is a/an
  - A. distributor.
  - B. capacitor.
  - C. inductor.
  - D. resistor.
4. The function of the brake lamp in a motor vehicle is to indicate that the vehicle is
  - A. stopping.
  - B. moving.
  - C. over speeding.
  - D. reversing.
5. The function of bushes used in a starter motor is to
  - A. enable the armature to rotate freely.
  - B. enable the stator to rotate freely.
  - C. disallow the armature from rotating freely.
  - D. disallow the stator from rotating freely.
6. The part of the ignition system that uses electrical energy produced by a battery to supply the low-tension ignition current is the
  - A. magneto.
  - B. coil.
  - C. armature.
  - D. distributor.

**PAPER 2**

**ESSAY**

1. (a) Describe the operation of a charging system.  
(b) List three necessary actions to be taken when the charging system of a motor vehicle in operation is noisy.
2. (a) State the main purpose of a charging system in a motor vehicle?  
(b) State one function each of the following components in the charging system of a motor vehicle:
  - (i) alternator;
  - (ii) voltage regulator;
  - (iii) battery.

**PAPER 3**  
**ALTERNATIVE TO PRACTICAL**

The horn of a motor vehicle is mal-functioning.

- (a) List four possible causes of the mal-function.
- (b) State four criteria to be considered when recommending a horn for a customer.
- (c) State the main function of a relay in a horn circuit.