

2394-302 Level 3 Principles, Practices and Legislation for the Initial Verification of Electrical Installations.

Chief Examiner's report – **August 2017**



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1 Introduction

The purpose of this document is to provide centres with feedback on the performance of candidates in the August 2017 examination for 2394-302 Principles, Practices and Legislation for the Initial Verification of Electrical Installations.

The Chief Examiner's Report has been reintroduced as a result of feedback from centres, to give them guidance in preparing candidates for the written examination.

2 Feedback on candidate performance

General feedback

The following comments are intended to help students prepare for the examination by having a better understanding of what is expected of them. The feedback within this report would also be valuable to tutors in understanding candidates' difficulties in answering questions and the areas where more guidance is required.

The August 2017 question paper was found to be in accordance with the scheme requirements.

The number of scripts received for this series was **approximately 80**.

Candidates appeared to have no issues with the format of the paper. They need to be aware that the space left for their answer is intended to be generous and, in almost all cases, is more than enough to record their answer.

Candidates and centres should be mindful that this qualification relates to the initial verification of electrical installations. It was evident from answers provided by some candidates that they confused this process with that required during periodic inspection and testing.

Candidates should keep their responses within the allotted area and any additional sheets should be **stapled to the back** of the answer book. The number of additional attached sheets needs to be recorded in the box on the front cover of the examination paper/candidate response book. These additional sheets should be plain lined paper and not a second answer book. The blank pages at the back of the answer book should **not** be used for candidate responses. These pages are not allocated areas for recording answers. Where it becomes necessary for centres to copy/print additional answer books these should be produced double sided to facilitate correct scanning into the marking software.

The answers produced by candidates for this examination series were of a good standard.

Not reading the whole question carefully

It is important that candidates read each question carefully before constructing their answer. Failure to do so may cost the candidate marks, and in some cases, they will score no marks at all as their answer does not relate to the question being asked.

One question asked the candidate to state in the correct sequence, the first three tests to be carried out on a new radial circuit. Some answers incorrectly included a ring final circuit continuity test. Other errors involved incorrect sequence of testing.

A small number of answers gave "safe isolation" as the first test. This is not a "test". It is a safety procedure that is carried out to ensure safety of persons while the "dead" testing is being carried out. This error was not penalised and the information offered by the candidate following this statement was appropriately assessed.

Terminology

The terms "live" and "line" are often used incorrectly. Candidates interchange the two terms when describing test procedures which often results in a loss of marks due to the testing procedure being unclear. This caused a number of candidates to lose marks when describing a safe isolation procedure and when describing how an insulation resistance was to be carried out. The terminology used in BS 7671 and Guidance Note 3 **must** be used when answering questions.

Knowledge of BS 7671 and Guidance Note 3

One question required candidates to state one method that may be used to provide Additional Protection, other than the installation of RCDs. Many answers incorrectly identified SELV, PELV and Electrical Separation. None of these measures offer Additional Protection.

Another question asked candidates to state five items of information specific to the DNO's supply and equipment that must be made available to the inspector. The answers given by candidates were generally of a good standard.

Safe Isolation

When asked to describe, in detail, the steps required to complete the safe isolation of a three-phase installation, the answers given by candidate were of a high standard. This is a considerable improvement compared to answers given by candidates on recent papers.

Inspection

Most candidates provided good answers when asked to identify five checks to be made during an inspection of a three compartment steel under floor trunking system prior to cables being drawn in. Only a small number incorrectly answers related to checking cables.

The majority of candidates did not score high marks when answering another question relating to inspection of part of an installation. The question was divided into a number of parts.

The first part asked the candidate to state what would be verified when inspecting for "basic protection" provided by "insulation of live parts". It would appear that many candidates were not familiar with the two terms. Reference to barriers and enclosures were common errors. Carrying out an insulation resistance test was another common error. The question specifically stated "during inspection".

The next part of the question related to basic protection provided by barriers **within** an enclosure. Most answers incorrectly referred to the enclosure and not the barriers.

A further part to the question concerned the inspection of a main protective bonding conductor to metal installation pipework. The most common incorrect answer referred to testing the continuity of the conductor.

Testing

An insulation resistance test on a water heater circuit was the subject of another question. The first part of the question required the candidate to provide some basic information such as the test instrument, test voltage, minimum acceptable test result, requirements of the test leads and checks on the instrument before carrying out the test. Most candidates scored full marks for this part of the question. A small number of answers incorrectly included a test voltage of 250 V.

Part b) of the question required the candidate to describe, in detail, how the test would be carried out. Some of the descriptions were very poor and contained little or no information. Very few took into consideration the relevant information given in the scenario. Typical incorrect information included switching the water heater on during the test, linking line and cpc together at one end and testing at the other end and making reference to luminaires.

Earth fault loop impedance path

The final question on the paper required the candidate to describe, with the aid of a fully labelled diagram, the earth fault loop impedance path for a radial socket-outlet circuit supplying the photocopier detailed in the scenario. Most drawings were of a good standard and included the correct path and the various parts were clearly labelled.

Other drawings did not include labelling of all the parts, and a small but significant number of drawings incorrectly indicated a path returning to the supply transformer and travelling down the transformer earth electrode. There was no complete circuit. This is of some concern as it would appear that a number of candidates do not understand the concept of a circuit. Other incorrect answers only showed the arrangement within the installation. Such answers did not gain marks.

3 National pass rate

The national pass rate for the 2394-302 August 2017 examination is as follows:

Exam series	Pass rate (%)	Fail rate (%)
August 2017	76	24

Past examination series

Exam series	Pass rate (%)	Fail rate (%)
June 2017	69	31
April 2017	65	35
February 2017	69	31

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