



**FINAL INTEGRATED  
COMPETENCE ASSESSMENT**

**FICA**

**INFORMATION FOR  
EMPLOYERS AND APPRENTICES**

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## INFORMATION FOR EMPLOYERS AND APPRENTICES

The final integrated competence assessment (FICA) must be taken by apprentices who are approaching the end of their training for the SJIB Apprentice Training scheme and the National Electrotechnical Training (NET) Modern Apprenticeship and others who wish to use the test to use the assessment to accredit practical experience.

The FICA is an integrated part of the level III SVQ and may only be undertaken by apprentices following the SJIB training scheme once they have completed all the required competencies. The FICA is effective from the 2<sup>nd</sup> March 1998 and available through the approved assessment centres.

The duration of the FICA will be two days.

*Throughout this leaflet, the term Candidate refers to an Apprentice or Adult undertaking the assessment.*

## THE ASSESSMENT

The FICA comprises of the following sections:

- A Assessment of site working practices
- B Composite installation
- C Inspection and Testing
- D Safe isolation of supplies
- E Fault diagnosis
- F Fault rectification
- G Underpinning knowledge assessment

The sections must be completed within the specified target times. The work must comply with the requirements of the current IEE Wiring Regulations (BS 7671) and Health and Safety Regulations. Candidates will be permitted to refer to the current edition of the IEE Wiring Regulations (BS 7671), IEE Guidance Note No.3 Inspection and Testing and the IEE On-Site Guide (OSG) during the tests.

Candidates will work on a standard test unit, using drawings, block and circuit diagrams and written instructions.

Candidates must present themselves at the assessment centre dressed in suitable working clothing and wear sound footwear.

The FICA can only be taken at an approved test centre, licensed annually by the National Electrotechnical Training Organisation (NET). A test place may be booked directly with an approved Assessment centre.

## EMPLOYER AND CANDIDATE CHECK LIST

Preparation on the points listed below should prove beneficial when taking the FICA assessment.

### Employer

- Provide sufficient lead time for the candidate to prepare
- Ensure candidate is prepared
- Provide refresher training as necessary
- Provide candidate briefing prior to the test
- Encourage the candidate to approach the assessment in a positive and confident manner

### Candidate

- Understand what competencies you are required to demonstrate
- Familiarise yourself with correct isolation of supply procedures
- Study and understand the power circuit requirements
- Note carefully the motor control function requirements
- Familiarise yourself on the fault diagnosis techniques
- Check the inspection and testing procedures as listed in the IEE On-Site Guide
- Be familiar with the appropriate test instruments and their correct usage

*Note on the provision of tools*

*A full set of tools required to undertake the FICA will be provided at the approved centre. Candidates should not bring their own tools.*

## A - ASSESSMENT OF SAFE WORKING PRACTICES

Target time 15 Minutes

Each candidate, prior to the commencement of the Composite Installation (Section B) will be required to demonstrate as assessment of Safe Working Practices.

## B – COMPOSITE INSTALLATION

Target time 5 hours 30 minutes

This is the wiring of an installation which includes a range of electrical circuits, each devised to assess a candidate's proficiency in particular aspects of electrical work. The electricity supply will be provided from a TN-S three phase 4 wire 400V system.

### INSTALLATION ASPECTS

### SKILL ACTIVITY

Main and Supplementary Equipotential Bonding

Measuring, clipping and dressing, terminating and fixing bonding clamps on service pipes etc.

Circuit Wiring - Lighting Circuit

Install PVC insulated cables for the two way and intermediate lighting circuit. Install key operated override 'on' switch adjacent to the intermediate switch.

Industrial Socket Outlet (400V)

Install and connect the 16A triple pole and earth socket outlet to the output terminals of the 20A TP&N switchfuse.

Three Phase Motor Circuit

Installing cables in trunking and conduit; terminating and making connections between a three phase squirrel cage motor, a motor starter, a remote start/stop/inch station warning indicator lights, with the aid of a wiring diagram. (see fig. C)

Circuit Wiring – Ring Circuit

Installing cables in metal and PVC trunking and PVC conduit; terminating and making connections from the distribution board to:

- a ring circuit of 13A switch-socket outlets.

- a one gang 13A socket outlet to supply a tubular heater via flexible cord and 13A plug.

## Composite Installation – Functional Operation

After the installation has been inspected and tested each candidate will be required to demonstrate that the following final circuits operate correctly:

- Two-way and intermediate switched lighting circuit
- Operate the Landlords Key Switch
- Operate the Emergency Luminaire Key Switch to effect simulated mains failure
- Ring circuit socket feeding heater
- Motor and control circuit

### C - INSPECTION AND TESTING

Target Time 1 Hour 30

Minutes

On completing the composite installation, each candidate will be required to carry out prescribed pre-commissioning electrical installation tests in accordance with the IEE Wiring Regulations (BS 7671).

Each candidate will be supplied with necessary instructions, a copy of the current IEE OnSite Guide, test results sheets and a range of instruments from which to select and prepare the one appropriate for each test.

### D- SAFE ISOLATION OF SUPPLIES

Target Time 30 Minutes

Candidates will be required, under observation, to demonstrate how to safely isolate circuits or items of equipment to ensure and verify it is safe to work on. This section of the assessment is carried out on the Fault Diagnosis Unit. Safe isolation procedure is shown in Figure E.

### E - FAULT DIAGNOSIS

Target Time 1 Hour 45 Minutes

Candidates will be required to diagnose and locate seven faults, introduced to the Fault Diagnosis Unit by the examiner, selected from a range of common faults. (Figure D for example) Each fault will be introduced individually to the candidates by either the examiner demonstrating the fault symptom or by the use of job cards.

## **F - FAULT RECTIFICATION (WHERE POSSIBLE)**

**Target Time 1 Hour 30 Minutes**

Candidates will be required to diagnose, locate and rectify (where possible) five faults which will be introduced to the Fault Diagnosis Unit. Each fault will be introduced individually to the candidates with the use of job cards. (Figure D for example)

## **G – UNDERPINNING KNOWLEDGE ASSESSMENT**

**Target Time 1 Hour**

Candidates will be required to undertake a 30 question multiple choice assessment paper. The questions will cover Health and Safety, Assessment of Safe Working Practices, Inspection and Testing, Safe Isolation and Installation Techniques. Each candidate will be supplied with a copy of BS7671, IEE on-site guide, memorandum on the Electricity at Work Regulations 1989 HS(R)25 and Electricity at Work – Safe Working Practices HS(G)85.

## CANDIDATE NOTES

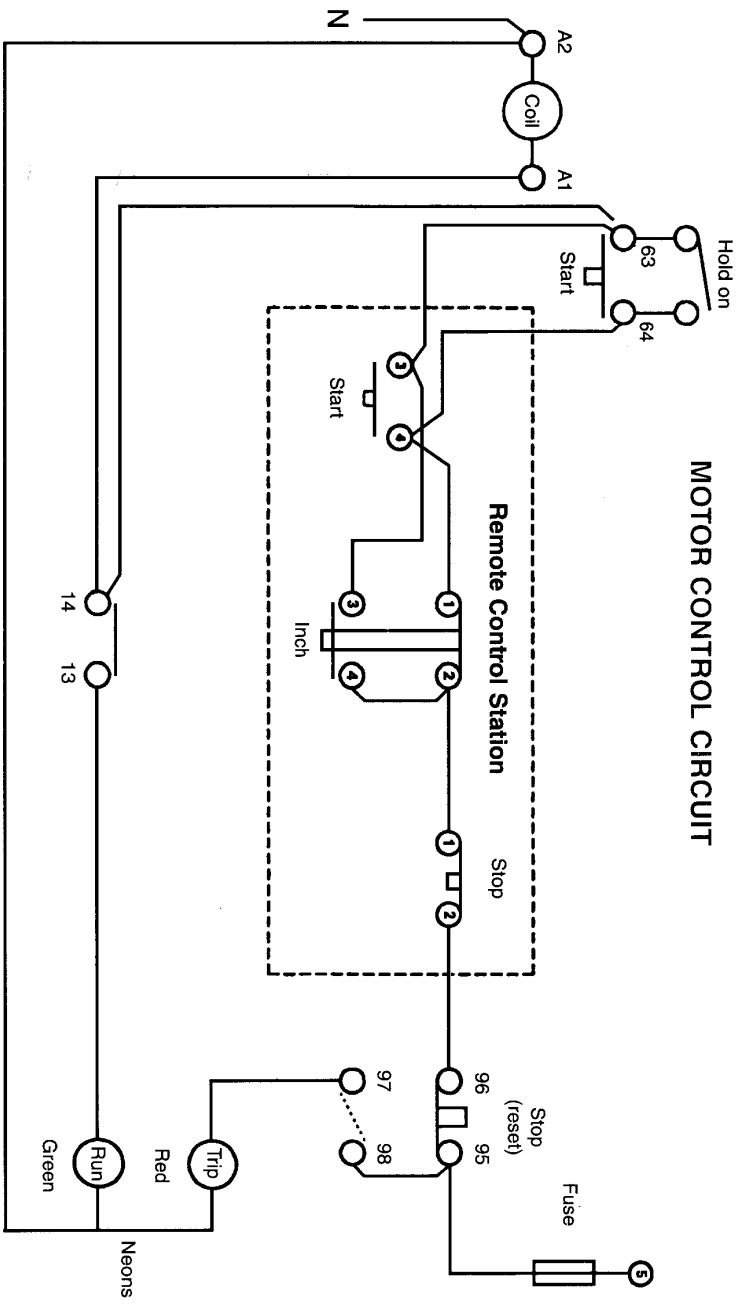


FIGURE C - MOTOR CONTROL CIRCUIT SCHEMATIC DIAGRAM

**JOB CARD**  
**Section F2 Stage 2**  
Rectification with an additional resource

**Fault F21**

**Motor circuit**

**Circuit arrangements**

Fed from way RYB3 10amp Type C MCB

**Fault Symptoms**

The motor control does not work correctly  
when operated from the remote control station

FIGURE D - Example of Job Card

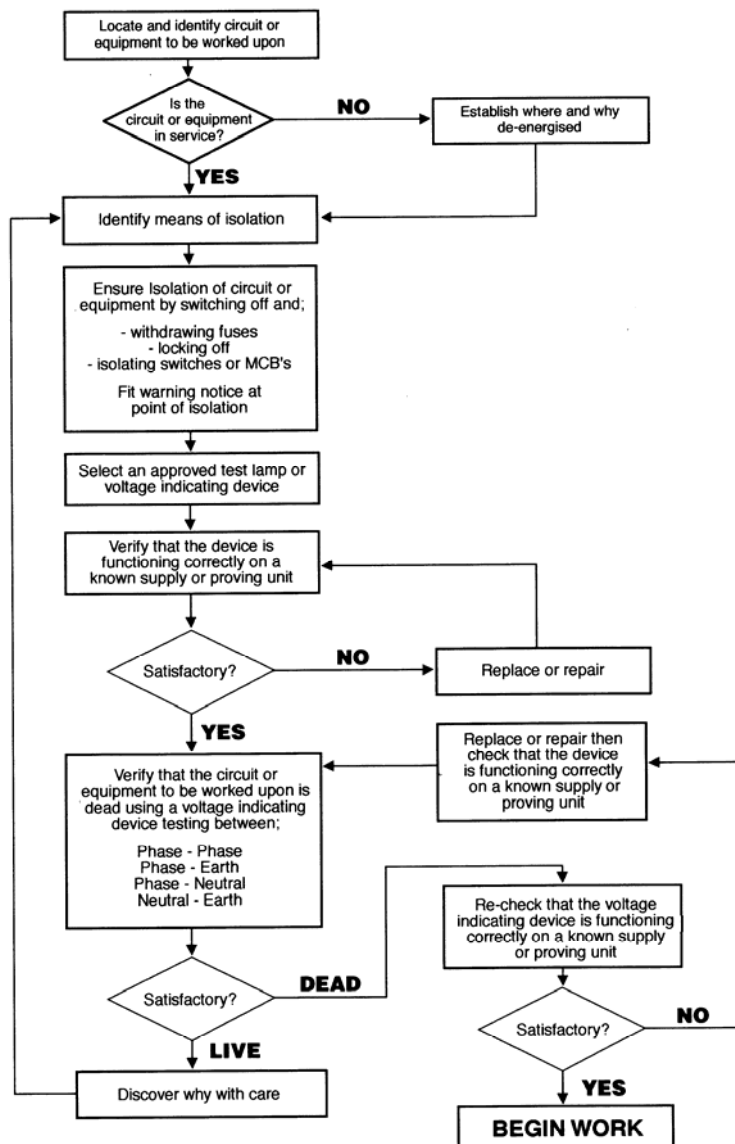
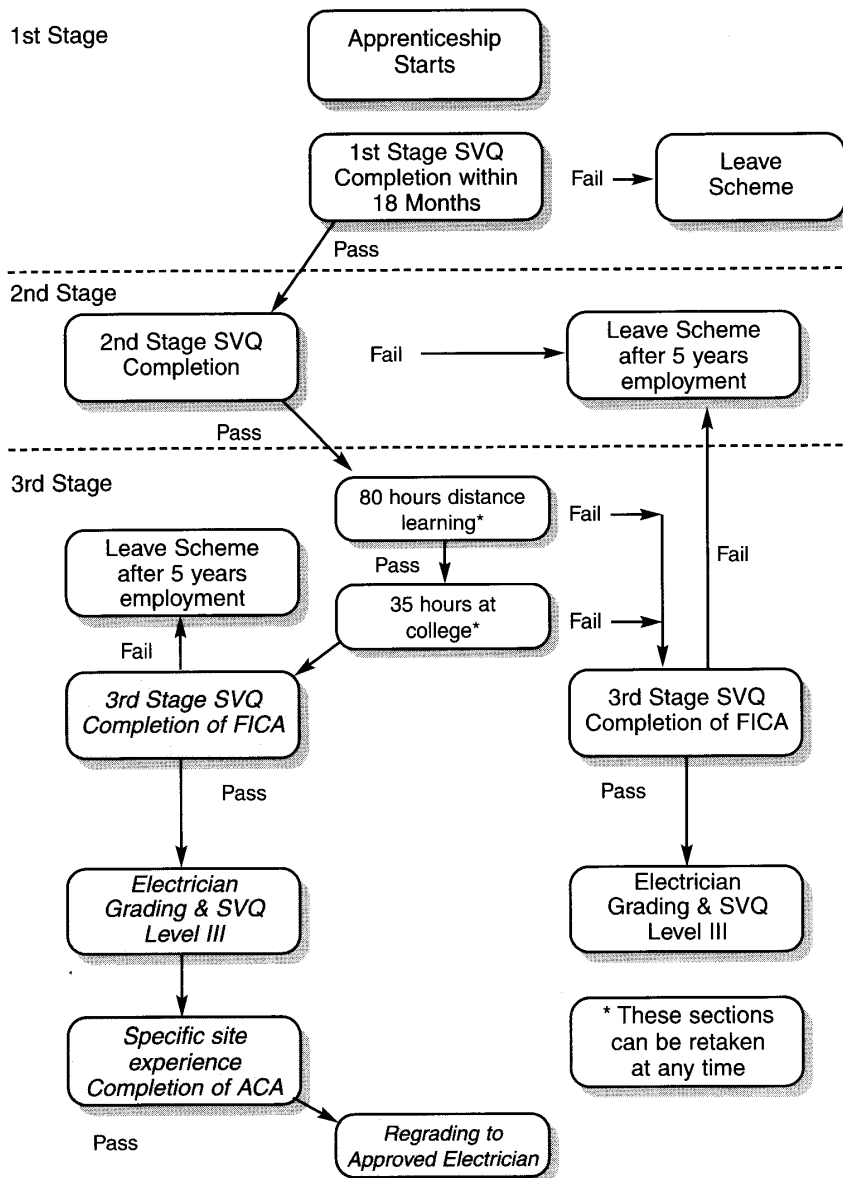


FIGURE E - SAFE ISOLATION PROCEDURE



**FIGURE F – SJIB APPRENTICE TRAINING SCHEME**