

Level 3 End-Point Assessment for Gas Network Craftsperson – Electrical and Instrumentation



EPA Specification Section 7 – Supporting Documents and Guidance

- Gateway Eligibility Report
- Gas Network Craftsperson Practical (Task(s), Briefs and Site Approval Form
- Practice Knowledge and Skills Assessment, with Answer Scheme
- Practical Tasks – Fault Diagnosis on Electrical and Instrumentation Equipment

Contacts

This specification has been designed to provide all the advice and guidance you need to prepare yourself and your apprentices for end-point assessment. However, if you have any further questions please contact the EUIAS Help Desk using one of the following:

Help Desk email: enquiries@euias.co.uk

Help Desk telephone: 0121 713 8310

EUIAS End-point Assessment for Gas Network Craftsperson- Electrical and Instrumentation Gateway Eligibility Report

(Standard Version: ST0205 version 1.2 dated 2018; Assessment Plan Version: ST0205/AP03)

Apprentice's details

Apprentice's name:	Apprentice's job title:
Name of Employer:	Name of Training provider:
Employer representatives present:	Training provider representatives present:
Apprenticeship start date:	Apprenticeship on-programme end date:
Gateway meeting date:	
Has the apprentice taken any part of the end-point assessment for this apprenticeship standard with any other End Point Assessment Organisation?	Y / N
If "Yes" please give details:	

Eligibility requirements:

The apprentice must confirm their achievement of the following:

Eligibility requirement	Achieved by the apprentice? Y/N	Evidence (scans of certificates MUST be included)
A competent logbook has been produced and meets the Specification and Assessment Plan requirements		
Achieved English Level 2		
Achieved Maths Level 2		

Gateway Eligibility Declaration

The apprentice, the employer and the training provider must sign this form to confirm that they understand and agree to the following:

1. The apprentice has completed the required on-programme elements of the apprenticeship and is ready for end-point assessment with EUIAS
2. The apprentice will only submit their own work as part of end-point assessment
3. All parties agree that end-point assessment evidence may be recorded and stored by EUIAS for quality assurance purposes
4. The apprentice has been on-programme for a minimum duration of 365 days
5. The apprentice has produced and finalised a competent Logbook that meets the Specification and Assessment Plan requirements
6. The apprentice has achieved Level 2 English and mathematic requirements as detailed in this document
7. The apprentice, if successful, gives permission for EUIAS to request the apprenticeship certificate from the ESFA who issue the certificate on behalf of the Secretary of State
8. The apprentice has been directed to the EUIAS Appeals Policy and Complaints Policy
9. The employer/training provider has given the EUIAS at least three months' notice of requesting this EPA for this apprentice
10. If the Gateway Eligibility Report is not completed in full, meeting all requirements, and submitted to EUIAS, the end-point assessment cannot take place

Signed on behalf of the employer (print name):	Signature:	Date:
Signed on behalf of the training provider (print name):	Signature:	Date:

Apprentice's name (print):	Signature:	Date:

EUIAS use only:	
EUIAS Sign off:	
Comments/actions:	

Gas Network Craftsperson – Electrical and Instrumentation

Practical Task, Brief(s) and Site Approval Form

Introduction

The purpose of the GNC Practical Task, Brief(s) and Site Approval Form is to provide support in ensuring that the practical task proposed for the apprentice is sufficiently complex to allow the apprentice to demonstrate the widest range of knowledge, skills and behaviours against the mandatory elements of the Gas Network Craftsperson (GNC) Assessment Plan.

Details of the mandatory elements are included in Section 4 of the GNC EPA Specification.

Each Apprenticeship Standard and Assessment Plan details the content, form, and nature of the components of end-point assessment (EPA). The practical task will be set by EUIAS with the employer, taking account of workplace considerations in discussions with the apprentice's employer. Practical task may have a number of elements, but all tasks must be of equal size and complexity for each option.

The employer must ensure that the practical task is conducted in either the workplace or a simulated environment appropriate to the task(s) and risk involved, with the exception of not necessarily being connected to a live gas network. The employer technical expert **must** complete and submit the 'GNC Practical Task, Brief(s) and Site Approval Form', to the EUIAS Service Delivery Team for approval 2 months before the start of the end-point assessment. The form should be accompanied by photographs and or video of the plant/machinery, including practical task and brief(s) which the apprentice will be working on.

The EUIAS approval process will be conducted by an independent assessor who will review the 'GNC Practical Task, Brief(s) and Site Approval Form', which will include information in relation to the workplace and or simulated environment appropriate to the practical task including the practical task, brief(s), plant/machinery and site to ensure the assessment is fit for purpose. The outcomes will be recorded in this form and used to communicate with the employer to advise of all approval outcomes. EUIAS will ensure this form is available for Internal Quality Assurance. The outcomes will be shared with the employer technical expert no later than 5 working days following the review. Where remedial action is required by the employer and or training provider the form will be accompanied by a notice to improve which will include those aspects that were of concern and a deadline for receipt of an appropriate remedial action plan. The employer or training provider **must not** conduct the practical task or use the brief(s), plant/machinery, site for the practical task until a final approval confirmation has been received from the EUIAS.

Please be aware:

- Practical task review does not guarantee that the apprentice will pass the practical task
- No health and safety risk assessment has been carried out by EUIAS
- EUIAS review does not remove any of the provider's obligations to ensure full coverage of the standard, and full compliance with relevant legislation
- EUIAS review is based only on information supplied and is not a guarantee that the task and plant/equipment on the day of the practical will be sufficient for an EPA practical task
- The information provided in this GNC Practical Task(s), Brief(s) and Site Approval Form must not be shared with the apprentice

[Please turn to the next page for the GNC Practical Task, Brief(s) and Site Approval Form]

GNC Practical Task, Brief(s) and Site Approval Form

Return completed form to enquiries@euias.co.uk

Employer name and site address	
Training provider (if applicable) name and site address	
Standard	
Pathway	
Level	
Practical Task Title	
Practical Task Brief(s) Titles	
Name of site to be approved	
Contact Details: Employer or training provider technical expert full name, email address and contact number overseeing the setup of the practical task (documents and site)	
Independent assessor carrying out the review full name	
Date of review	

Practical Task Assessment Criteria	Evidence Sampled
<p>Please complete one form per scenario - As several scenarios will be used to cover the depth and breadth of the criteria. Please answer all questions concisely and thoroughly, and provide accurate details to the questions listed below:</p>	
1. Description of the practical task scenario including the purpose for which this scenario task is to be used for (i.e. List the specific tasks to be undertaken in the scenario)	
2. Is the practical task to be conducted in the workplace appropriate to the task(s) and risk involved, with the exception of not necessarily being connected to a live gas network?	
3. Is the practical task to be conducted in a simulated environment that reflects the real working environment appropriate to the task(s) and risk involved, with the exception of not necessarily being connected to a live gas network?	
4. Provide a description of the proposed practical task(s).	
5. Does the practical task(s) have a number of elements, if yes how many?	
6. If answered yes to question 4. Do the practical task elements meet the requirements of the Assessment Plan page 9?	
7. Do the practical task(s) include briefs?	
8. Does the practical task(s) meet the knowledge, skills and behaviours requirements as specified in Section 2 of the Specification?	
9. If answered yes to question 6. Do the briefs meet the practical task(s) requirements?	
10. Does the practical task brief(s) meet the knowledge, skills and behaviours requirements as specified in Section 2 of the Specification?	
11. Provide details of the plant and machinery to be used	
12. Site- specific details including access and or induction arrangements	
13. Will the Employer technical expert require PPE?	

14. Will the apprentice require PPE?	
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Remember: tasks should be kept confidential from the apprentices, and you will require several tasks where you have more than one apprentice so that the apprentice cannot predict which task they will be given.

Employer Technical Expert Practical Task, Brief(s), Photographic and or Video Evidence

Practical Task Scenario

Details of the practical task scenario including the purpose for which this scenario task is to be used for or state if the task is included for submission.

Practical Task Brief(s)

Details – List the specific tasks to be undertaken in the above scenario or state if the brief(s) are included for submission.

Photographs and or Videos

Photograph and or Video 1: Insert Title –

Insert photograph

Photograph and or Video 2: Insert Title –

Insert photograph

Photograph and or Video 3: Insert Title -
Insert photograph
Photograph and or Video 4: Insert Title -
Insert photograph
Photograph and or Video 5: Insert Title -
Insert photograph
Photograph and or Video 6: Insert Title -
Insert photograph
<i>Please add more rows as required</i>

EUIAS Office use only

Notice to improve including remedial action(s)	
Practical task scenario(s) approved	
Practical brief(s) approved	
Workplace approved	
Simulated environment approved	

Summary Feedback

Number of minor infringements	0	Number of major infringements	0

Recommendations

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Review Outcome

Standards not yet achieved (include which have not been achieved KSB and number)		Standards achieved (include which KSB has been achieved and number)	
Standards achieved with recommendations			

Declaration

I confirm this report is a true and accurate reflection of the situation on site.			
Independent Assessor Full Name		Date	
Independent Assessor Signature			

End-point Assessment

Knowledge and Skills Practice

Assessment

Please write clearly in block capitals below	
Company name	
First name (s)	
Last name (s)	
Date of birth	
Apprentice number	
Apprentice signature	
Date of knowledge and skills assessment	

Level: 3
Standard: Gas Network Craftsperson
Pathway: Electrical and Instrumentation
Duration: 1 hour 15 minutes

Materials

For this paper you must have:

- Pens
- Calculators and reference documents are not required

Instructions

- Use black or blue ink or black ball-point pen
- Fill in the boxes at the top of this page
- Answer **all** questions
- There are questions, possible answers as well as a column for you to mark your answer
- Mark your answer with an against the possible answer you think is

correct- if you wish to change your answer please put a line through and re-select with another

- Only one answer per question allowed. Answers which do not follow the rules of selection will be disallowed. This may impact on the grade awarded
- Do all rough work in this answer book, spare paper is provided in this answer booklet and can be used but **MUST NOT** be removed
- Additional spare paper will not be provided
- All questions are closed book

Sample:

London is the capital of....

Example Question		
London is the capital of...		
Possible answers		Answer
a)	Wales	X
b)	Scotland	
c)	Northern Ireland	
d)	England	X

Information

- The marks for questions are 1 mark each
- There are 50 questions in total
- All questions should be attempted

Advice

- You are not permitted to leave the examination room for the duration of the assessment
- Do not spend too long on one question
- Read all questions thoroughly before starting your examination
- Mobile phones and SMART watches must not be taken into the examination room. The examination must be conducted under examination conditions i.e. you may not speak to other candidates, if you have a question raise your hand and the invigilator will attend

- Cheating: you will be asked to leave the examination room and will be classified an automatic fail and referred to your employer

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THE WRITTEN PERMISSION OF THE EUIAS

**Do not turn over the page or commence the
knowledge test until the invigilator instructs you to**

You may use this page to work out on.


This page must not be removed.


Question 1		
Which ONE of the following activities relates the Gas Safety (Management) Regulations 1996 (GSMR)?		
Possible answers		Answer
a)	The transportation of natural gas to the public	
b)	The supply of natural gas to consumers	
c)	The control of hazards associated with gas products	
d)	The setting of parameters for charging customers for the supply of gas	

Question 2		
Which Regulation states the requirements for Flow Weighted Average Calorific Value (FWACV)?		
Possible answers		Answer
a)	Pressure Systems Safety Regulations 2000 (PSSR)	
b)	Pipelines Safety Regulations 1996 (PSR)	
c)	Gas Safety (Management) Regulations 1996 (GSMR)	
d)	Provision and Use of Work Equipment Regulations 1998 (PUWER)	

Question 3		
Instrumentation cables should meet which British Standard?		
Possible answers		Answer
a)	BS 2391	
b)	BS 5308	
c)	BS 7671	
d)	BS 9322	

Question 4		
An operative is using a piece of equipment which leaks oil onto the ground.		
What are the next actions the operative should take?		
Possible answers	Answer	
a)	Contain the oil leak, clean it up and report it	
b)	Repair the oil leak and report the spill	
c)	Wash away the oil into a nearby drain	
d)	Wipe up the oil and dispose as general waste	

Question 5		
What does this symbol mean?		
Possible answers	Answer	
a)	Hearing protection is available	
b)	Hearing protection must be worn	
c)	Hearing protection is advised	
d)	Hearing protection is not required	

Question 6		
According to the Control of Substances Hazardous to Health Regulations 2002 (COSHH), what does this symbol mean?		
Possible answers	Answer	
a)	Harmful substance	
b)	Oxidising substance	
c)	Toxic substance	
d)	Flammable substance	

Question 7		
What is the first principle of safe manual handling?		
Possible answers		Answer
a)	Dismantle the load	
b)	Avoid the need for lifting if possible	
c)	Use more than one person for the lift	
d)	Use safe manual handling lifting techniques	

Question 8		
Prior to using any tool or equipment, what must the operator check and confirm?		
Possible answers		Answer
a)	It is intrinsically safe	
b)	It is suitable for the task	
c)	It has all appropriate certification labels	
d)	It is supplied by a recognised hire company	

Question 9		
According to the Control of Noise at Work Regulations 2005, ear protection must be worn when the upper exposure action value is above:		
Possible answers		Answer
a)	75 db (A)	
b)	80 db (A)	
c)	85 db (A)	
d)	90 db (A)	

Question 10		
When would the use of leaning ladders be considered a suitable option to carry out work at height?		
Possible answers		Answer
a)	Where the work area cannot be reached from a fixed scaffold	
b)	Where the work activity is low risk and short duration	
c)	Where it is the most cost-effective solution	
d)	Where work will take less than one hour to complete	

Question 11		
What does N/O and N/C mean on site equipment and or drawings?		
Possible answers		Answer
a)	Nearly Open, Nearly Closed	
b)	Not Operating, Not Compliant	
c)	Normally Open, Normally Closed	
d)	Normal Operation, Normal Compliance	

Question 12		
A three-term controller employs PID in order to apply accurate and responsive correction to a control function.		
What does PID stand for?		
Possible answers		Answer
a)	Power, immediate, direct	
b)	Pipeline, invertor, downstream	
c)	Proportional, integral, derivative	
d)	Pneumatic, intermediate, damping	

Question 13		
How is capacitance calculated?		
Possible answers		Answer
a)	Voltage plus Charge	
b)	Voltage divided by Charge	
c)	Charge multiplied by Voltage	
d)	Charge divided by Voltage	

Question 14		
Which statement describes the Joule-Thomson effect?		
Possible answers		Answer
a)	Gas cools when it expands rapidly	
b)	Gas cools when its pressure is increased	
c)	Gas freezes on the inlet to a regulator	
d)	Gas freezes when it flows into above-ground pipework	

Question 15		
When installing a replacement pressure instrument, what should be referred to for the correct installation method?		
Possible answers		Answer
a)	Site logbook	
b)	Site drawings	
c)	Gas Safe website	
d)	Manufacturer's instructions	

Question 16		
Where a pressure transmitter has a span of 16 mA and the permitted tolerance is 0.3% of the span, what does the tolerance equate to in mA?		
Possible answers		Answer
a)	0.048 mA	
b)	0.053 mA	
c)	0.48 mA	
d)	0.53 mA	

Question 17		
According to a risk assessment, what is meant by the term 'hazard'?		
Possible answers		Answer
a)	The likelihood to cause harm	
b)	The outcome and severity of an accident	
c)	Anything that could cause equipment to fail	
d)	Anything that has the potential to cause harm	

Question 18		
The purpose of a risk assessment is to:		
Possible answers		Answer
a)	ensure tasks are done in the correct order	
b)	ensure work can be carried out in reasonable safety	
c)	protect the employer and employee from prosecution	
d)	fully meet the requirements of the Construction (Design and Management) Regulations 2015	

Question 19		
What is a Permit to Work?		
Possible answers		Answer
a)	A way of recording work undertaken on site	
b)	A method to control works in potentially hazardous areas	
c)	A document to record that a job has been completed safely	
d)	Proof of the competence of individuals to undertake work on site	

Question 20		
Where work encroaches on to a road or footway, what must be installed on the site to protect both the workers and members of the public?		
Possible answers		Answer
a)	Traffic lights	
b)	Warning signs	
c)	Electrical safety measures	
d)	Signing, lighting and guarding	

Question 21		
Who is responsible for implementing Permit to Work requirements on an Above Ground Installation (AGI) site?		
Possible answers		Answer
a)	A local manager	
b)	A competent person	
c)	An authorising engineer	
d)	A manager in system control	

Question 22		
On-site, who is responsible for ensuring compliance requirements of a Permit to Work?		
Possible answers		Answer
a)	The authorising engineer who issued the permit to work	
b)	The competent person to whom the permit to work was issued	
c)	The manager responsible for the site where the permit to work was issued	
d)	The team working on the site where the permit to work was issued	

Question 23		
What is the priority action to take on site where gas is escaping?		
Possible answers		Answer
a)	Risk assessment	
b)	Secure the escape	
c)	Set up an exclusion zone	
d)	Safeguard life and property	

Question 24		
Which ONE of the following electrical protection concepts represents 'increased safety'?		
Possible answers		Answer
a)	Ex ia	
b)	Ex e	
c)	Ex d	
d)	Ex n	

Question 25		
Where the voltage of a circuit is 230 V and the current is 11.5 A, what is the resistance of the load?		
Possible answers		Answer
a)	10 Ω	
b)	15 Ω	
c)	20 Ω	
d)	23 Ω	

Question 26		
When working on an Above Ground Installation (AGI), which action must be undertaken every day?		
Possible answers		Answer
a)	Log on and off site	
b)	Request a Permit to Work	
c)	Contact the responsible manager	
d)	Contact the authorising engineer	

Question 27		
After an electrical circuit is isolated, in which sequence is the voltage indicator and proving unit used?		
Possible answers		Answer
a)	Test-Prove-Prove	
b)	Test-Prove-Test	
c)	Prove-Test-Test	
d)	Prove-Test-Prove	

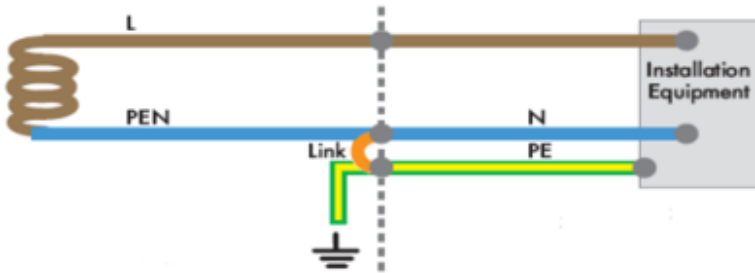
Question 28		
What is the minimum permitted distance between adjacent intrinsically safe circuits?		
Possible answers		Answer
a)	3 mm	
b)	4 mm	
c)	5 mm	
d)	6 mm	

Question 29		
What should an operative refer to in order to check that the earth loop impedance values fall within an acceptable value?		
Possible answers		Answer
a)	BS7671:2018	
b)	Work instructions	
c)	Circuit drawings	
d)	The test kit manual	

Question 30		
If power of a load is 3000 W and voltage is 230 V, what is the resistance?		
Possible answers		Answer
a)	20.33 Ω	
b)	17.63 Ω	
c)	13.04 Ω	
d)	10.05 Ω	

Question 31

Which earthing arrangement is this?





Possible answers		Answer
a)	IT	
b)	TT	
c)	TN-S	
d)	TN-C-S	

Question 32

According to the sequence of tests for initial verification of a circuit, which test must be completed first?

Possible answers		Answer
a)	Insulation resistance	
b)	Prospective fault current	
c)	Residual-current device tests	
d)	Continuity of protective conductors	

Question 33		
When testing analogue inputs on telemetry systems, input signals should be tested at which points?		
Possible answers		Answer
a)	Input signals equivalent to 0, 25, 50, 75 and 100% (Rising only)	
b)	Input signals equivalent to 0, 25, 50, 75 and 100% (Rising and falling)	
c)	Input signals equivalent to 0, 25, 50, 75 and 100% (Falling only)	
d)	Input signals equivalent to 0, 25, 50, 75 and 100% (Rising twice)	

Question 34		
A piece of equipment has the following markings on the case:		
  II 2 G Ex d IIC T4 Gb		
What does this mean?		
Possible answers		Answer
a)	It is approved under the Personal Protective Equipment 2002 Regulations	
b)	It is certified under Appareils destinés à être utilisés en ATmosphères Explosives (ATEX)	
c)	It meets the requirements of Reporting of Injuries, Diseases and Dangerous Occurrence Regulations 2013	
d)	It meets the requirements of the Provision and Use of Work Equipment Regulations 1998	

Question 35		
Safety is put at risk from fire, explosion, and corrosion of metal.		
Identify the Regulation that places a duty on employers and the self-employed to protect people from these risks?		
Possible answers		Answer
a)	Pipelines Safety Regulations 1996	
b)	Gas Safety (Management) Regulations 1996	
c)	Pressure Systems Safety Regulations 2000	
d)	Dangerous Substances and Explosive Atmospheres Regulations 2002	


Question 36		
The Regulations that are commonly referred to by the initials 'WEEE' is the:		
Possible answers		Answer
a)	Work Environmental & Ethical Enactment Regulations	
b)	Workforce Entry & Egress Equipment Regulations	
c)	Waste Ethics & Environmental Emergency Regulations	
d)	Waste Electrical & Electronic Equipment Regulations	

Question 37		
Which Regulation from the Electricity at Work Regulations 1989 outlines working on or near live conductors?		
Possible answers		Answer
a)	Regulation 1	
b)	Regulation 11	
c)	Regulation 12	
d)	Regulation 14	

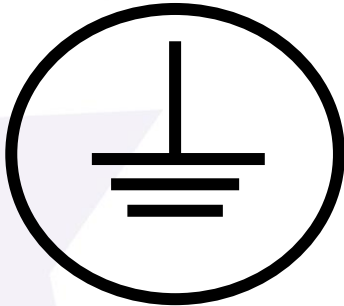
Question 38		
What are the most up to date colours used for electrical single-phase wiring?		
Possible answers		Answer
a)	Red (live), black (neutral), green & yellow (protective earth)	
b)	Brown (live), blue (neutral), green & yellow (protective earth)	
c)	Brown (live), blue (neutral), green (protective earth)	
d)	Red (live), blue (neutral), green & yellow (protective earth)	

Question 39		
What is BS7671 more widely known as?		
Possible answers		Answer
a)	15 th Edition – IET wiring regulations	
b)	16 th Edition – IET wiring regulations	
c)	17 th Edition – IET wiring regulations	
d)	18 th Edition – IET wiring regulations	

Question 40		
In which hazardous area zone could an operative install equipment that is marked with 'Ex n'?		
Possible answers		Answer
a)	Zone 0	
b)	Zone 1	
c)	Zone 2	
d)	Zone 3	

Question 41		
What does the sign below mean if displayed at the entrance to an operational site?		
Possible answers		Answer
a)	Warning - Explosive gas	
b)	Warning - Explosive atmosphere	
c)	DSEAR regulations apply	
d)	ATEX certified equipment only	
		

Question 42		
Which ONE of the following is a type of earthing?		
Possible answers		Answer
a)	Cathodic protection	
b)	Circuit Protective Conductor	
c)	Double insulation	
d)	Impressed current	

Question 43		
What type of electrical equipment would this symbol be found on?		
Possible answers		Answer
a)	Class I	
b)	Class II	
c)	Class III	
d)	Class IV	
		

Question 44		
When removing an orifice plate there is an accidental equipment failure that results in the loss of more than 500kg of natural gas through leakage to atmosphere.		
According to which Regulations must this be reported?		
Possible answers		Answer
a)	Dangerous Substances and Explosive Atmospheres Regulations 2002	
b)	Reporting of Injuries, Diseases and Dangerous Occurrence Regulations 2013	
c)	Control of Major Accident Hazards Regulations 2015	
d)	Provision and Use of Work Equipment Regulations 1998	

Question 45		
During an electrical isolation procedure, what is the correct sequence to follow when checking with a voltage indicator?		
Possible answers		Answer
a)	Earth to Neutral, Earth to Live, Neutral to Live	
b)	Live to Earth, Neutral to Earth, Live to Neutral	
c)	Live to Earth, Neutral to Earth, Neutral to Live	
d)	Earth to Earth, Neutral to Neutral, Live to Live	

Question 46		
Which type of valve should be adjusted before testing a pressure switch?		
Possible answers		Answer
a)	Equaliser valve	
b)	Isolation valve	
c)	Output valve	
d)	Stream valve	

Question 47		
A BS88 fuse can be used for which purpose?		
Possible answers		Answer
a)	Emergency switching	
b)	Functional switching	
c)	Two-way switching	
d)	Means of isolation	

Question 48		
How often should an orifice plate be removed and inspected?		
Possible answers		Answer
a)	Annually	
b)	Every two years	
c)	Every 6 months	
d)	Every month	

Question 49		
What action should be taken when coming into contact with asbestos at work?		
Possible answers		Answer
a)	Work cautiously on an identified asbestos gas main	
b)	Gently handle gaskets which may contain asbestos	
c)	Carefully drill walls with a textured coating which may contain asbestos	
d)	Take precautions when materials are found which may contain asbestos	

Question 50		
Which ONE of the following is a duty under the Gas Safety Management Regulations 1996 (GSMR)?		
Possible answers		Answer
a)	To design and safely operate pipelines	
b)	To protect people from fire and explosion	
c)	To minimise the risk of a gas supply emergency	
d)	To prevent major accidents involving dangerous substances	

End of Knowledge and Skills Practice Assessment

Answers

Question	Answer	Question	Answer
1	A	26	A
2	C	27	D
3	B	28	D
4	A	29	A
5	B	30	B
6	C	31	D
7	B	32	D
8	B	33	B
9	C	34	B
10	B	35	D
11	C	36	D
12	C	37	D
13	D	38	B
14	A	39	D
15	D	40	C
16	A	41	B
17	D	42	B
18	B	43	A
19	B	44	B
20	D	45	A
21	B	46	A
22	D	47	D
23	D	48	A
24	B	49	D
25	C	50	C

Practical Task

The practical task is designed to cover Part 1 of the technical interview which will focus on the practical task evidence in the logbook. Apprentices will complete a practical task during which they will also be asked questions by the technical expert to confirm their understanding of the rationale for actions taken and choices made during the task(s). The content of this practical task will relate to the specific role they are working towards. The duration of this activity will typically be no longer than 9 hours +/- 10%, this can be split across a maximum of three days. The actual time allowed will be based on the comparable time that an industry competent worker would take to achieve successful task(s) completion. The EUIAS will provide the performance criteria and the recording documents for the tasks. Through consultation with the employer and training provider, the EUIAS will ensure sufficient complexity to allow the apprentice to demonstrate the required knowledge, skills and behaviours (KSB) in an integrated way, which will test:

- Core skills (CS1; CS2; CS3; CS4; CS5; CS6; CS7; CS8; CS9; CS10; CS11; CS13)
- Core behaviours (CB1; CB3; CB4; CB5; CB6; CB8)
- Selected role specific skills for electrical and instrumentation craftsperson (NMCEi1; NMCEi2; NMCEi4; NMCEi5; NMCEi9; NMCEi12; NMCEi15)

See Section 4 for the references to the standard.

Note that the apprentice is only required to demonstrate the electrical and instrumentation craftsperson specific knowledge, skills and behaviours requirements, and the task must be chosen carefully to ensure that the apprentice has opportunity to cover all aspects of the knowledge, skills and behaviours in an integrated way.

The task(s) will be supervised and managed by an employer technical expert approved by EUIAS, and this technical expert **must not** be the independent assessor who conducts the technical interview.

As part of the practical task the technical expert will write a factual account of the practical task verifying whether the task was completed appropriately. The apprentice will be asked questions, with follow up questions as appropriate, to confirm their understanding of the rationale for actions taken and the choices made to complete the tasks.

This practical task provides the opportunity for the apprentice to synoptically demonstrate core and specific knowledge, skills and behaviours as detailed in Section 4, on actual plant and equipment in a workplace or a simulated environment that reflect the real working environment appropriate to the task(s) and risk involved, with the exception of not necessarily being connected to a live gas network. This provides the opportunity to apply and integrate their learning and to safely perform maintenance and operational activities.

End-Point Assessment Gas Network Craftsperson Electrical and Instrumentation

Practical Tasks

Fault Diagnosis on Electrical and Instrumentation Equipment

Level 3

Practical Task Specification

This assessment specification has been developed as part of the gas network craftsperson - electrical and instrumentation standard. The specification details the apprentice's required skills, knowledge and behaviour on all the key aspects of the gas network craftsperson - electrical and instrumentation activity.

This end-point assessment should allow the apprentice to demonstrate the competence required to follow work instructions and specifications in order to diagnose faults and test electrical and instrumentation systems.

The assessment specification is the minimum core technical standard of these requirements, but this does not preclude employers from enhancing the skills and knowledge of the learner through additional or company specific assessment.

Successful completion of this unit should provide evidence that the apprentice has the required knowledge, understanding and performance skills.

What does this specification look like?

To achieve this unit the apprentice must demonstrate their achievement of all assessment outcomes. This unit will be evidenced through practical assessment, these being delivered in the workplace under simulated conditions or alternatively in a realistic workplace environment. Evidence of the apprentice's achievement must be included in their work log or their portfolio.

What does the assessment include?

Gas network craftsperson - electrical and instrumentation apprentices will be expected to:

- Work safely at all times
- Use company and / or manufacturers' drawings and maintenance documentation
- Adhere to procedures or systems in place for risk assessment, COSHH, personal protective equipment (PPE) and other relevant safety regulations
- Where appropriate, ensure the insertion, or program override, of any relevant system trip defeats (such as fire extinguishant, emergency shutdown)
- Provide and maintain safe access and working arrangements for the fault finding and or maintenance area
- Where appropriate, use electrostatic discharge (ESD) precautions
- Carry out the fault diagnostic activities, using appropriate procedures
- Collect equipment fault diagnostic evidence from 'live' and isolated circuits
- Disconnect or isolate components to confirm the diagnosis
- Identify the fault and complete the appropriate corrective action
- Dispose of waste items in a safe and environmentally acceptable manner and leave the work area in a safe condition

Realistic Working Environments (RWE) Centre Requirements

Centres are responsible for ensuring that the RWE assessment is suitably controlled to ensure that assessment decisions are valid and reliable, and that work submitted for assessment by the apprentice is prepared and produced by them independently, without assistance from others, and free of plagiarism.

The practical tasks must be designed following the guidance and requirements given in this document. The assessor checklist must be adhered to and cannot be altered without prior written consent from EUIAS.

The combined electrical and instrumentation option requires the performance and knowledge criteria of each unit assessment to be satisfied and the respective assessor checklists must be completed.

The necessary operational procedures should be made available to the apprentice throughout the assessment process.

Practical Assessment Centre Requirements

The assessment requirements are in the following areas:

TTIEPA1	Fault diagnosis on instrumentation equipment
TTEEPA1	Fault diagnosis on electrical equipment

A technical expert assessor who is independent of the apprentice and approved by the EUIAS must assess the assessments. Please refer to Section 5.2 of this Specification for further details.

The assessment area must be designed to allow the apprentice to demonstrate the skills as prescribed in the performance criteria. Evidence for the practical aspects should be observed in the realistic working environment. The equipment used must be connected to the electrical supply and must include controls and cabling that is non-serviceable, allowing the apprentice to diagnose the faults and make repairs. A technical drawing of the proposed task must be made available to the apprentice.

The assessment area must allow or be designed to provide variability and must include a fault that can be rectified by adjustment or maintenance and another fault, which will require a component or cabling to be changed. On the technical expert checklist record, the technical expert must describe the fault set that required adjustment or maintenance and the fault set that required a component or cable to be replaced. The practical assessment rig **must** therefore be capable of accommodating a number of differing faults to be set by the technical expert. The faults set must be recorded on the assessor checklist to demonstrate variability of the task from apprentice to apprentice.

Centres may create workbooks that will allow the apprentice to demonstrate their underpinning knowledge, skills and behaviours.

The equipment used for this assessment **must** be for assessment purposes only and the apprentice must not have had prior access to this.

Apprentice Requirements

To achieve a pass in the practical tasks the apprentice **must** complete all of the following:

- Ensure all health and safety requirements are observed throughout the assessment
- Complete a site specific risk assessment
- Select method statements appropriate for the activity
- Use company specific procedures
- Complete any documentation regarding, isolation, testing, commissioning and decommissioning of the apparatus
- Remove and replace a faulty component or cabling
- Complete all testing and commissioning requirements following the repair
- Reinststate the repaired system back to operational condition

Technical Expert Requirements

Apprentices carrying out the practical tasks will be observed by an EUIAS approved technical expert.

Each practical task must consist of three assessment components for fault diagnosis on instrumentation equipment and three assessment components for fault diagnosis on electrical equipment. Each assessment component being drawn from three different equipment categories as detailed in the “scope” section of the assessment document.

Due to the diverse nature of the tasks undertaken all performance criteria may not be captured in each assessment component, however the performance criteria as stated in the assessment documentation must be satisfied across the three components of each practical task.

The technical expert may question the apprentice as they are carrying out the practical task, but the technical expert **must** remain unobstructive whilst the apprentice is carrying out tasks. Questions asked should be included in the feedback section of each assessment document and may cover the following areas:

- Practical experience and knowledge gained through work experience
- Technical questioning related to the isolation, installation, testing, commissioning and maintenance of operational equipment.

- A variety of “what if” scenarios to determine problem solving skills
- Comprehension of basic operations or electrical principles related to plant and equipment
- Ability of apprentice to elaborate in their field of expertise
- General attitude and enthusiasm of the apprentice

Apprentices should be able to demonstrate a depth of understanding of the practical principles of the systems they are working on.

Permissible allowances and reasons for immediate failure

- Apprentices do not have to carry out the task in a prescribed sequence but must cover all of the assessment criteria required, provided health and safety is not compromised
- Apprentices should ensure that the tasks are completed safely. It is permissible not to have identified all tools and safety equipment prior to the task starting but the additional requirements must be identified and acted upon appropriately as the task progresses
- Apprentices may not be able to return the equipment to service or check its operation at the end of the task due to other issues identified during the course of the work. If this occurs an assessment of the apprentice’s competence in those areas can be made via technical questioning and professional discussion
- Apprentices will fail immediately if they do not select and wear the correct PPE for the task
- Apprentices will fail immediately if they do not follow safe control measures as set out in the risk assessment
- Apprentices will fail immediately if they put themselves or anyone else at danger – i.e. by failing to safely isolate plant and equipment
- Where an apprentice fails a component of the practical task this will not necessarily invalidate any other practical task or assessment components successfully completed

Grading

This assessment is graded as Pass or Fail. The technical expert will determine successful completion of the practical tasks using the technical expert checklist. The technical expert must record a factual account as a witness testimony. This will determine Pass or Fail. Where an apprentice fails a practical task or a component thereof this must be recorded on the practical task checklist. A suitable action plan should be agreed between the apprentice and their Trainer or Line Manager or Mentor. The apprentice must retake the assessment component and practical task within the end-point assessment window. A new practical task checklist **must** be used for each subsequent attempt and a factual record of which attempt is being undertaken must be recorded on the checklist.

Apprentice Feedback

On successful completion of the practical tasks the technical expert may provide feedback to the apprentice to inform them of the assessment outcome. If an apprentice fails a practical task or a component thereof; the technical expert can only inform the apprentice of the performance criteria **not** satisfied. The technical expert **must not** provide detailed feedback, with or without corrective actions to be taken, to the apprentice. The technical expert should provide detailed feedback to the apprentice's Trainer or Line Manager or Mentor. Should a technical expert provide detailed feedback to the apprentice, this would be considered a conflict of interest and the entire practical task may have to be re-assessed by a different technical expert.

Assessment Documentation and Duration

The following are indicative durations for the completion of each assessment area:

- TTIEPA1 Fault diagnosis on instrumentation equipment 4.5 hours
- TTEEPA1 Fault diagnosis on electrical equipment 4.5 hours