EPA Specification Maintenance and Operations Engineering Technician – Electromechanical Technician

EPA Specification Section 7 – Supporting documents

- Gateway Eligibility Report
- Cohort Registration Form
- Practice Knowledge Assessment, with Answer Scheme
- MOET Portfolio Checklist and Portfolio Index
- Practical Observation Approval Form

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 745 1310 option 2

EUIAS Level 3 End-point Assessment for Maintenance Operations Engineer Technician - Electromechanical

Gateway Eligibility Report

(Standard Version: ST0154 version 1, 2016; Assessment Plan Version: ST0154/AP02)

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 for MOET

The apprentice must confirm their achievement of the following:

Eligibility requirement	Achieved by the apprentice? Y/N	Evidence (scans of certificates MUST be included)
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 achieved the mathematics and English requirements as detailed in this document
6. 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
7. The apprentice has been directed to the EUIAS Appeals Policy and Complaints Policy
8. The employer/training provider has given the EUIAS at least three months' notice of requesting this EPA for this apprentice
9. 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:	

Cohort Registration Form (v2)

Section 1 Main Details

Standard and AP number	
Number in cohort, by pathway	
Cohort start date	
Expected Gateway date	

Employer Name	
Lead Provider Name*	

* (this may be the employer).

Employer Contact Name	
Employer Contact Details (address, phone and email)	
Employer Reference Number (ERN)	
Lead Provider Contact Name	
Lead Provider Contact Details (address, phone and email)	
Lead Provider Reference Number (UKPRN)	
Date of Service Level Agreement between EUIAS and Lead Provider (EUIAS to complete)	

EUIAS Unique Cohort Identifier (UCI) Number:

Section 2 Service Details

The scope of the end-point assessment service is listed in Section 4 of the Service Level Agreement agreed with the lead provider.

EUIAS end-point assessment policies can be found at www.euias.co.uk

The agreed pricing is detailed below.

End-point Assessment Price per apprentice	Stage 1 - Registration	
	Stage 2 – Gateway / End-point	
	TOTAL	

Cancellation price for EPA element 1 (specify):	£
Cancellation price for EPA element 2 (specify):	£
Cancellation price for EPA element 3 (specify):	£

Re-sit / re-take price for EPA element 1:	£
Re-sit / re-take price for EPA element 2:	£
Re-sit / re-take price for EPA element 3:	£

Cancellation charges (these are in line with section 10.9 of the Service Level Agreement)	
Less than 48 hours	Payment in full for the specific end-point assessment activity plus any travel and subsistence costs incurred and any additional assessment(s) that cannot be rescheduled due to the assessment plan stage requirements
More than 48 hours but less than 5 days	50% payment of the full payment for the specific end-point assessment activity and any travel and subsistence costs incurred that cannot be cancelled
Greater than 6 days but less than 10 days	25% payment of the full payment for the specific end-point assessment activity and any travel and subsistence costs incurred that cannot be cancelled
More than 10 days	No additional charge for the specific end-point assessment activity
Other (if applicable)	

Additional Service Charges (insert details as applicable):

EUIAS – supplied assessors/technical experts: Assessors supplied by employer	£

Invigilation:	£ (per invigilator)

EUIAS approval of additional/alternative assessment facilities:	£ (per site)

Learner/employer workshops, technical briefings etc:	£ (per briefing, plus travel expenses)

Section 3 - Account Registration for Finance and Invoicing (if not provided in a previous Cohort Registration Form)

To be completed by the main provider (the organisation on the Register of Apprenticeship Training Providers (RoATP), that will be contracting with the EUIAS on the employer's behalf).

Use details already provided: **Yes / No**

Or complete the information below:

Lead Provider Name			
Address and Postcode			
Contact Name		Telephone No.	
Email Address		Company No	
Email Address for Statement		VAT no.	

Invoice Details – if different from above

Contact Name		Telephone No.	
Invoice Address and Postcode			

Account Payable Details – if different from above

Contact Name		Telephone No.	
Invoice Address and Postcode			

Purchase order number/details for Stage 1 payment

Section 4 - Declarations

Employer Declaration	
This is to confirm that the [employer] has selected the Energy & Utilities Independent Assessment Service (EUIAS) as their end-point assessment organisation for the stated apprenticeship standard and cohort, and that the details supplied in this form are correct.	
Employer Name	
Contact Name:	
Job Title:	
Signature:	
Date:	

Lead Provider Declaration (this may be the employer)	
This is to confirm that the [Lead Provider] is approved on the Register of Apprenticeship Training Providers and will contract with and pay Energy & Utility Skills Limited (trading as Energy & Utilities Independent Assessment Service) on behalf of the employer for the delivery of end-point assessment. This is also to confirm that the details supplied in this form are correct.	
Lead Provider Name:	
Contact Name:	
Job Title:	
Signature:	
Date:	

MOET Practice Assessment

Please write clearly in block capitals below	
Company Name	
Forename (s)	
Surname (s)	
Date of Birth	
Apprentice Number	
Apprentice signature	
Date of Knowledge Test	

Level: 3
Standard: Maintenance and Operations Engineering Technician
Pathway: Electromechanical Practice Assessment
Duration: 45 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

- There are 30 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 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 problem 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

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

ENERGY & UTILITIES INDEPENDENT ASSESSMENT SERVICE

DO NOT DETACH

Spare paper for to use for calculations or working out

(A) First principles relating to the operation and maintenance of appropriate plant and equipment (7 Questions)

Question 01			
On what type of installation would you fit this design of washer?			
Possible answers		**Answer**	
a)	High corrosion		
b)	High temperature		
c)	High vibration		
d)	High pressure		

Question 02		
The maximum and/or minimum values that are permitted for specific maintenance operations are commonly described as:		
Possible answers		**Answer**
a)	Factors of safety	
b)	Rules of thumb	
c)	Margins	
d)	Tolerances	

Question 03		
Which statement is correct? Safety critical equipment should be maintained ….		
Possible answers		**Answer**
a)	safety critical equipment does not need testing	
b)	more frequently that non safety critical equipment	
c)	less frequently that non safety critical equipment	
d)	at the same period as safety non-critical equipment	

Question 04		
Which statement best describes what is meant by the terminology “specification”?		
Possible answers		**Answer**
a)	The capacity to endure continuous force	
b)	The standard when measured against another object of similar design	
c)	Detailed description of the design and materials of an object	
d)	The specified point beyond which certification is invalid	

Question 05		
What type of maintenance is applied when something stops working?		
Possible answers		**Answer**
a)	Planned	
b)	Preventative	
c)	Corrective	
d)	Shutdown	

Question 06		
What do the initials IP followed by 2 numbers refer to when seen on a piece of equipment:		
Possible answers		**Answer**
a)	Internal pressure	
b)	Integrity protection	
c)	Ingress protection	
d)	Increased pressure	

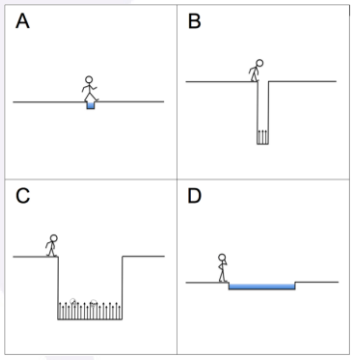
Question 07		
Which of the following is commonly classed as safety critical?		
Possible answers		**Answer**
a)	Control valve	
b)	Fuse	
c)	Steam trap	
d)	Drain valve	

Question 08		
What does the coloured tag on a piece of rigging equipment mean?		
Possible answers		**Answer**
a)	Certification period	
b)	Safe working load	
c)	Maximum working load	
d)	Safe to use	

Question 09		
When seen on site, what does a green safety sign signify?		
Possible answers		**Answer**
a)	Mandatory	
b)	Prohibited	
c)	Information	
d)	Warning	

Question 10		
What document should be fixed to a scaffold before you use it?		
Possible answers		**Answer**
a)	Risk assessment	
b)	Safety certificate	
c)	Approved Scafftag	
d)	Permit to work	

Question 11			
Looking at the image provided and taking into consideration risk, which task would you say is low probability and low in impact?			
Possible answers		**Answer**	
a)	A		
b)	B		
c)	C		
d)	D		



Question 12		
When personal protection equipment is identified on the work control document, which of the following statements is correct?		
Possible answers		**Answer**
a)	PPE is recommended	
b)	PPE is advised	
c)	PPE is good practice	
d)	PPE is mandatory	

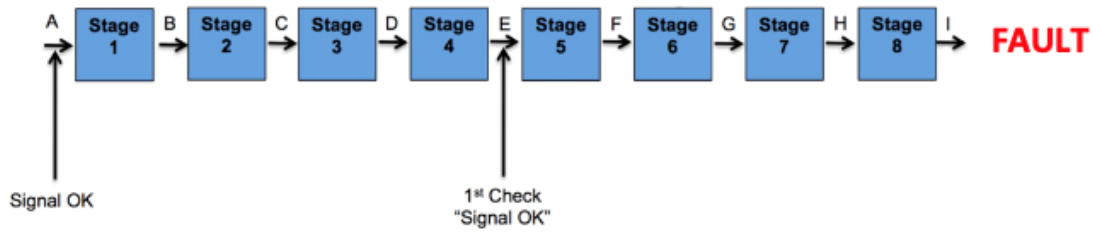
Question 13		
In accordance with HSE regulations, how would you know if a substance was regarded as hazardous?		
Possible answers		**Answer**
a)	The container will be coloured red	
b)	It will be contained in a glass receptacle	
c)	It will have a label identifying the hazard	
d)	It will give off a strong odour	

Question 14		
According to the Confined Space Regulations 1997, which of the following locations is not regarded as a confined space?		
Possible answers		**Answer**
a)	Storage tank	
b)	Termination cabinet	
c)	Floor void	
d)	Pipe trench	

Question 15		
In accordance with HSE guidelines, isolations can only be applied by ….		
Possible answers		**Answer**
a)	Lead technicians	
b)	Training and authorised people	
c)	skilled people	
d)	experienced people	

Question 16		
Which of the following manual handling statements is true?		
Possible answers		**Answer**
a)	Correct manual handling prevents all accidents	
b)	Correct manual handling prevents damage to equipment	
c)	Correct manual handling reduces the risk of human injury	
d)	Correct manual handling should only be applied in the workplace	

(C) Maintenance and operational practices, processes and procedures covering a range of plant and equipment (5 Questions)

Question 17		
Using the half split principal and referring to the information provided in the image, at which position should you logically make the next check when fault finding?		
		
Possible answers		**Answer**
a)	Point C	
b)	Point F	
c)	Point G	
d)	Point I	

Question 18		
What regulation provides guidance on the use of handheld tools?		
Possible answers		**Answer**
a)	PUWER	
b)	COMAH	
c)	LOLER	
d)	COSHH	

Question 19		
What is being measured in this image?		
		
Possible answers		**Answer**
a)	Temperature	
b)	Vibration	
c)	Pressure	
d)	Speed	

Question 20		
When seen on a British Standard convention drawing, what does this symbol represent?		
		
Possible answers		**Answer**
a)	Electrical signal	
b)	Pneumatic line	
c)	Hydraulic line	
d)	Instrument signal	

Question 21		
What type of maintenance can be applied to check the long-term performance of equipment to identify problems before they occur?		
Possible answers		**Answer**
a)	Preventative maintenance	
b)	Risk based maintenance	
c)	Condition based maintenance	
d)	Corrective maintenance	

(D) The relevant engineering theories and principles relative to their occupation (9 Questions)

Question 22		
Which of the following is a **primary** unit in the SI system?		
Possible answers		**Answer**
a)	Force	
b)	Length	
c)	Power	
d)	Conductivity	

Question 23		
Which method or methods of heat transfer can occur in a vacuum?		
Possible answers		**Answer**
a)	Radiation	
b)	Convection and radiation	
c)	Convection and conduction	
d)	Conduction	

Question 24		
How do you calculate resultant force?		
Possible answers		**Answer**
a)	By averaging the forces that act upon on average	
b)	By adding together all the forces that act upon an object	
c)	By dividing the forces that act upon an object	
d)	By multiplying all the forces that act upon an object	

Question 25		
An electric drive motor on a conveyor belt is connected to a 110 V electrical supply. The power of the motor is 2.0kW. The most suitable fuse for the drive motor circuit is:		
Possible answers		**Answer**
a)	5 A	
b)	13 A	
c)	20 A	
d)	55 A	

Question 26		
The purpose of a commutator on an electric motor is to:		
Possible answers		**Answer**
a)	Ensure easy brush replacement	
b)	Increase the resistance in the motor	
c)	Increase the current in the motor	
d)	Periodically reverse the current direction between the rotor and the external circuit	

Question 27		
The formula for calculating the kinetic energy of an object of mass **m** moving at a velocity of **v** is:		
Possible answers		**Answer**
a)	2 x m x v	
b)	$0.5 \times m \times v^2$	
c)	$2 \times m \times v^2$	
d)	$0.5 \times m^2 \times v$	

Question 28		
A vehicle is moving at a constant velocity on a horizontal road. Which of the following is true?		
Possible answers		**Answer**
a)	The friction force is almost zero	
b)	The friction force is the same size as the driving force	
c)	The friction force is exactly zero	
d)	The friction force is less than the driving force	

Question 29		
A 20 mA current is flowing through a component of resistance 100 ohms. The voltage difference across the component is:		
Possible answers		**Answer**
a)	5 V	
b)	2 kV	
c)	5 mV	
d)	2 V	

Question 30		
The unit of electromotive force (EMF) is:		
Possible answers		**Answer**
a)	Newton	
b)	Joule	
c)	Amp	

d)	Volt	

End of Practice Assessment

Answers

Question	Answer	Question	Answer
1	C	16	C
2	D	17	C
3	B	18	A
4	C	19	B
5	C	20	B
6	C	21	C
7	B	22	B
8	A	23	A
9	C	24	B
10	C	25	C
11	A	26	D
12	D	27	B
13	C	28	B
14	B	29	D
15	B	30	D

MOET Portfolio Readiness Checklist – Electromechanical technician pathway

Use this form to check your portfolio covers the required parts of the standard

Apprentice Name	Company/Location

Brief description of the work-based tasks

Core Knowledge					
CK1	First principles relating to operation and maintenance of plant and equipment	☐	CK2	Relevant industry health and safety standards, regulations and environmental and regulatory requirements	☐
CK3	Maintenance and operational practices, processes and procedures	☐	CK4	Relevant engineering theories and principles	☐
Core Skills and Behaviour					
CS5	Read, understand, interpret and work to technical information	☐	CS6	Locate and rectify faults on plant & equipment	☐
CS7	Inspect and maintain plant & equipment	☐	CS8	Communicate, handover & confirm that the appropriate engineering process has been completed	☐
B5	Critical reasoning	☐			
Specific Skills					
EM1	Position/assemble/install and dismantle plant & equipment	☐	EM2	Planned, unplanned & preventative maintenance	☐
EM3	Replace/repair and or remove components	☐	EM4	Diagnose and determine the cause of fault	☐

The apprentice's manager/mentor is required to complete the details below to confirm the authenticity of the evidence portfolio

By signing below I confirm that the evidence in the apprentice's portfolio is his/her own work.		
Witness Name	Witness Signature	Date

MOET Portfolio Index

Evidence Ref.	Short description of evidence	Standard(s) covered
E-Ref 01		
E-Ref 02		
E-Ref 03		
E-Ref 04		
E-Ref 05		
E-Ref 06		
E-Ref 07		
E-Ref 08		
E-Ref 09		
E-Ref 10		
E-Ref 11		
E-Ref 12		
E-Ref 13		
E-Ref 14		
E-Ref 15		
E-Ref 16		
E-Ref 17		
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E-Ref 23		
E-Ref 24		
E-Ref 25		
E-Ref 26		
E-Ref 27		
E-Ref 28		
E-Ref 29		
E-Ref 30		

Continue index as required

Practical Observation Approval Form Guidance

Guidance

The purpose of the Practical Observation Approval Form is to ensure that the activity, proposed for the apprentice to complete during the MOET Practical Observation Assessment, is sufficiently complex to allow the apprentices to demonstrate the widest range of knowledge, skills and behaviours against the mandatory elements of the MOET EPA Standard.

Details of the mandatory elements are in Section 4 of the Specification.

Unless the site and tasks have previously been approved by EUIAS, the Approval Form should be completed and submitted to EUIAS a minimum of 20 working days before the expected date of the first practical observation. The form should be accompanied by photographs of the plant/ machinery which the apprentice will be working on.

A “complex” activity is defined as one that is completed in a number of individual stages in order to complete the activity. As an example, these stages could be broken down into the following sequence:

- Comply with industry health, safety and environmental working practices and regulations
- Prepare work areas to undertake work related activities and reinstate those areas after the completion of the work-related activities
- Communicate with and provide information to stakeholders in line with personal role and responsibilities
- Read, understand and interpret information and work in compliance with technical specifications and supporting documentation
- Inspect and maintain appropriate plant and equipment to meet operational requirements
- Locate, and rectify faults on plant and equipment
- Assess and test the performance and condition of plant and equipment
- Communicate, handover and confirm that the appropriate engineering process has been completed to specification

The above sequence comprises of the Core Skills elements of the MOET EPA, which closely reflects the practices and processes of facilitating work activities in the industry sectors, which are identified in the MOET Assessment Plan.

In addition to the Core Skill elements detailed above, the proposed activity must also allow the apprentice to demonstrate their knowledge, skills and behaviours against **one** of the Specific Skill elements detailed in Section 4 of the Specification.

It is important to note that if, during the assessment, any aspect of the performance that needs to be assessed does not occur naturally, the independent assessor (technical expert) will ask the apprentice questions to give them the opportunity to cover the area of the standard.

The time taken to complete the proposed activity(s) should typically take no longer than one day. However, the actual time allowed should be based on the comparable time that an industry competent worker would take to achieve successful activity(s) completion.

As a rule of thumb, an activity(s) that would take only 2 hours to complete would be considered to be insufficiently complex and would likely restrict the opportunity for the apprentice to demonstrate their full range of knowledge, skills and behaviours.

MOET Practical Observation Approval Form

Return completed form to enquiries@euias.co.uk

Apprentice Name	
MOET Pathway	
Employer/provider and Site Address:	
Contact name for the Practical Observation, with contact details	
PPE Required for the Assessor	
Site-specific access/induction arrangements	
Plant/machinery photographs included?	YES / NO
Description of the proposed task(s)	