

**Level 3 Advanced Technical
Extended Diploma in Land-Based
Engineering
(0171-017)**

Synoptic Assignment 2019 – v1.0

PAST ASSIGNMENT (2019) – DO NOT USE FOR LIVE ASSESSMENT

General guidance for candidates

General guidance

This is a formal assessment that you will be marked and graded on. You will be marked on the quality and accuracy of your practical performance and any written work you produce. It is therefore important that you carry your work out to the highest standard you can. You should show how well you know and understand the subject and how you are able to use your knowledge and skills together to complete the tasks.

Plagiarism

This is an assessment of your abilities, so the work must be all your own work and carried out under the conditions stated. You will be asked to sign a declaration that you have not had any outside help with the assessment.

Your tutor is allowed to give you some help understanding the assignment instructions if necessary, but they will record any other guidance you need and this will be taken into account during marking.

Plagiarism is the failure to acknowledge sources properly and/or the submission of another person's work as if it were your own. Plagiarism is not allowed in this assignment.

Where research is allowed, your tutor must be able to identify which work you have done yourself, and what you have found from other sources. It is therefore important to make sure you acknowledge all sources and clearly reference any information taken from them.

Timings and planning

Where you have to plan your time, you should take care to make sure you have divided the time available between tasks appropriately. In some assignments, there are specified timings which cannot be changed and which need to be taken into account. You should check your plan is appropriate with your tutor.

If you have a good reason for needing more time, you will need to explain the reasons to your tutor and agree a new deadline date. Changes to dates will be at the discretion of the tutor, and they may not mark work that is handed in after the agreed deadlines.

Health and Safety

You must always work safely, in particular while you are carrying out practical tasks.

You must always follow any relevant Health and Safety regulations and codes of practice.

If your tutor sees you working in a way that is unsafe for yourself or others, they will ask you to stop immediately, and tell you why. Your tutor will not be able to reassess you until they are sure you are ready for assessment and can work safely.

Presentation of work

Presentation of work must be neat and appropriate to the task.

You should make sure that each piece of evidence including any proformas eg record/job cards are clearly labelled with your name and the assignment reference.

All electronic files must be given a clear file name that allows your tutor to identify it as your work.

Assignment Brief

A tractor with a common rail fuel injection system has been brought into the workshop, where you are a land-based service engineer.

The customer has complained of the tractor misfiring, and these symptoms are negatively effecting the overall power output of the tractor when conducting operations in the field.

The service manager has requested that you conduct a full diagnostic check of the tractor in order to determine the underlying fault, causing the tractor to misfire. Once completed, the service manager has requested that you verify the power output of the tractor. The findings will be included in a job card and verbally reported to the customer.

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Tasks

Task 1

Carry out a risk assessment and prepare the workshop tools and equipment required for the fault diagnostic task.

Conditions of assessment:

You must carry out the task on your own, under supervised conditions. You will have access to the manufacturer's instructions for the tractor.

If you are working in a way that risks the safety of yourself or others, you will be stopped and be asked to leave the assessment area.

What you must produce for marking:

- Risk assessment.

Additional evidence of your performance that must be captured for marking:

- Your tutor's notes of your working practice detailed in task 1.

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Task 2

Complete a dynamometer test of the tractor whilst monitoring engine systems, utilising the relevant diagnostic tools or equipment in accordance with manufacturer's instructions.

Following the dynamometer test you must identify possible causes of the reduced power output from the engine.

Conditions of assessment:

You must carry out the task on your own, under supervised conditions.

If you are working in a way that risks the safety of yourself or others, you will be stopped and be asked to leave the assessment area.

What you must produce for marking:

- Results of the dynamometer test
- Your notes on the possible causes of the reduced power output from the engine.

Additional evidence of your performance that must be captured for marking:

- Your tutor's notes of your working practice detailed in task 2
- Photographs/video evidence of your completed work.

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Task 3

Using an oscilloscope, monitor the voltage output from the engine control module at the injectors on the tractor.

When conducting this check you will need to capture and save the voltage trace from the oscilloscope for each injector.

On one of the traces identify:

- the length of injection
- maximum voltage during injection
- the number of injections per stroke.

Following the test, recommend possible causes of low injector voltage during injection.

Conditions of assessment:

You must carry out the task on your own, under supervised conditions.

If you are working in a way that risks the safety of yourself or others, you will be stopped and be asked to leave the assessment area.

What you must produce for marking:

- Saved copy of the voltage traces for each injector.
- A copy of the injector trace with the relevant features identified.
- Your notes on the possible causes of low injector voltage during injection.

Additional evidence of your performance that must be captured for marking:

- Your tutor's notes of your working practice detailed in task 3
- Photographs/video evidence of your completed work.

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Task 4

Conduct a compression test of the engine in accordance with manufacturer's instructions, recording your results.

Following the test, recommend possible causes of low engine compression across all cylinders.

Conditions of assessment:

You must carry out the task on your own, under supervised conditions.

If you are working in a way that risks the safety of yourself or others, you will be stopped and be asked to leave the assessment area.

What you must produce for marking:

- Your notes including results of the compression test and possible causes.

Additional evidence of your performance that must be captured for marking:

- Your tutor's notes of your working practice detailed in task 4.
- Photographs/video evidence of your completed work.

Task 5

Complete a job card to be shared with the customer on the outcomes of Tasks 2-4 carried out, including the findings from the compression test.

You must verbally explain your findings on the job card to the customer.

Conditions of assessment:

- You must carry out the task on your own, under supervised conditions. You will have access to your notes from the previous tasks.

What you must produce for marking:

- Serviceability report.

Additional evidence of your performance that must be captured for marking:

- Your tutor's notes of your explanation of the job card.

Task instructions for centres

Resources

Candidates must have access to a suitable range of resources to carry out the tasks and to have the opportunity to choose equipment, components and consumables. Please refer to the City & Guilds website for resource lists relating to this qualification.

Task specific guidance

This guidance should not be shared with learners.

*Candidates should be given the assignment brief only, one week before the first planned assessments. It is recommended that where possible all tasks within this assignment are completed **within 4 teaching weeks** of the candidate being given the brief.*

Each task should be given to the candidate at the start of the assessment and not in advance. The tasks do not need to be completed on the same day but it is best practice to leave no more than two days between tasks.

Task 1

Tutors must provide candidates with a risk assessment template. The risk assessment must cover the workshop, equipment and tasks to be carried out in tasks 2, 3 and 4. It can be centre devised or industry standard.

Task 2

Possible faults that could be introduced but are not limited to:

- disconnecting an electronic injector
- restricting air intake or fuel system
- introducing an open circuit to the injector feed from ECU.

Task 4

The engine must be fully serviceable for the compression test and have manufacturer's specification/instructions. The engine used for the compression test can be either on a running rig or an alternative tractor to the one used in Task 2.

Task 5

It is recommended that candidates are provided with access to ICT software (particularly word processing software) in order to complete their job card. Candidates are not allowed access to the Internet. The tutor must provide the candidates with a template of a job card. The tutor may act as a customer in the role play exercise, when the candidate is explaining the findings of their job card. The tutor should observe the effectiveness of the candidate's communication (e.g. addressing others face to face, body language, courtesy and helpfulness, product knowledge, use of technical terms).

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Time

The following timings are provided to support the centre planning.

Total – 10 to 12 hours.

Task 1 – 30 mins

Task 2 – 1 hour

Task 3 – 1 hour

Task 4 – 1.5 hours

Task 5 – 45 mins

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Centre guidance

Guidance provided in this document supports the administration of this assignment. The following documents, available on the City & Guilds website, provide essential generic guidance for centres delivering Technical qualifications and **must** be referred to alongside this guidance:

- *Technical qualifications – marking*
- *Technical qualifications – moderation* (updated annually)
- *Technical qualifications – teaching, learning and assessment*

This synoptic assessment is designed to require the candidate to make use of their knowledge, understanding and skills they have built up over the course of their learning to tackle problems/tasks/challenges.

This approach to assessment emphasises to candidates the importance and applicability of the full range of their learning to practice in their industry area, and supports them in learning to take responsibility for transferring their knowledge, understanding and skills to the practical situation, fostering independence, autonomy and confidence.

Candidates are provided with an assignment brief. They then have to draw on their knowledge and skills and independently select the correct processes, skills, materials, and approaches to take to provide the evidence specified by the brief.

During the learning programme, it is expected that tutors will have taken the opportunity to set shorter, formative tasks that allow candidates to be supported to independently use the learning they have so far covered, drawing this together in a similar way, so they are familiar with the format, conditions and expectations of the synoptic assessment.

Candidates should be made aware during learning what the Assessment Objectives are and how they are implemented in marking the assignment, so they will understand the level of performance that will achieve them high marks.

Candidates should not be entered for the assessment until the end of the course of learning for the qualification so they are in a position to complete the assignment successfully.

Health and safety

Candidates should not be entered for assessment without being clear of the importance of working safely and practice of doing so. The tutor must immediately stop an assessment if a candidate works unsafely. At the discretion of the tutor, depending on the severity of the incident, the candidate may be given a warning. If they continue to work unsafely however, their assessment must be ended and they must retake the assessment at a later date.

Compliance with timings

The timings provided are estimates to support centre planning. They refer to assessment time, not any additional setting up the centre needs to carry out to create the required to ensure an appropriate assessment environment.

It is the centre's responsibility to plan sufficient assessment sessions, under the appropriate conditions, within the assignment window, to allow candidates reasonable time to complete the assessment tasks.

Where candidates are required to plan their work they should have their plans confirmed for appropriateness in relation to the time allocated for each task.

Candidates should be allowed sufficient time to fully demonstrate the range of their skills, however this also needs to be reasonable and practicable. Candidates should be allowed to overrun their planned timings or professional service times (where they exist) in order for evidence of a range of their skills to be captured. If however, the time required exceeds reasonably set assessment periods, or the tolerance suggested for professional service times, the centre may stop the assessment and base the marking on the evidence up to that point, including the tutor's notes of how far over time the task has taken.

Observation evidence

Where the tutor is required to carry out observation of performance, detailed, descriptive notes must be recorded on the practical observation (PO) form provided. The centre has the flexibility to adapt the form, to suit local requirements (eg to use tablet, hand-written formats, or to ease local administration) as long as this does not change or restrict the type of evidence collected.

The number of candidates a tutor will be able to observe at one time will vary depending on:

- the complexity of evidence collection for the task
- local conditions eg layout of the assessment environment
- amount of additional support available (eg to capture image/ video evidence), staggered starts etc,
- whether there are any peak times where there is a lot of evidence to collect that will need additional support or any that are quieter.

It is advisable to trial the planned arrangements where possible during formative assessment, reviewing the quality of evidence captured and manageability. It is expected that for straight forward observations, (and unless otherwise specified) no more than eight candidates will be observed by a single tutor at one time, and the number will usually be fewer than this maximum. The key factor to consider is the logistics of collecting sufficient evidence.

As far as possible, candidates should not be distracted, or their performance affected by the process of observation and evidence collection.

Observation notes form part of the candidate's evidence and must describe **how well** the activity has been carried out, rather than stating the steps/ actions the candidate has taken. The notes must be very descriptive and focus on the **quality** of the performance in such a way that comparisons between performances can be made. They must provide sufficient, appropriate evidence that can be used by the marker (and moderator) to mark the performance using the marking grid.

Identifying what it is about the performances that is **different** between candidates can clarify the qualities that are important to record. Each candidate is likely to carry out the same steps, so a checklist of this information would not help differentiate between them. However qualitative comments on **how well** they do it, and quantitative records of accuracy and tolerances would.

The tutor should refer to the marking grid to ensure appropriate aspects of performance are recorded. These notes will be used for marking and moderation purposes and so must be **detailed, accurate and differentiating**.

Tutors should ensure that any required additional supporting evidence including eg photographs or video can be easily matched to the correct candidate, are clear, well-lit and showing the **areas of particular interest in sufficient detail and clarity** for assessment (ie

taken at appropriate points in production, showing accuracy of measurements where appropriate).

If candidates are required to work as a team, each candidate's contribution must be noted separately. The tutor may intervene if any individual candidate's contribution is unclear or to ensure fair access (see below).

The *Technical qualifications guides on marking and moderation* are essential guidance documents and are available on the City & Guilds website. These provide further information on preparing for assessment, evidence gathering, standardisation, marking and moderation, and must be referred to when planning and carrying out assessment.

Minimum evidence requirements for marking and moderation

The sections in the assignment:

- *What you must produce for marking*, and
- *Additional evidence of your performance that must be captured for marking*

list the minimum requirements of evidence to be submitted for marking and the moderation sample.

Evidence produced during assessment above and beyond this may be submitted, as long as it provides useful information for marking and moderation and has been produced under appropriate conditions.

While technological methods which support the capturing or creating of evidence can be helpful, eg pinboard style websites for creating mood boards, the final evidence must be converted to a suitable format for marking and moderation which cannot be lost/ deleted or amended after the end of the assessment period (eg screen prints, pdf files). Considerations around tracking authenticity and potential loss of material hosted on such platforms during assessment is the centre's responsibility.

Where candidates have carried out some work as a group, the contribution of each candidate must be clear. It is not appropriate to submit identical information for each candidate without some way for the marker and moderator to mark the candidates individually.

Note: Combining candidates' individual pieces of evidence into single files or zip files may make evidence management during internal marking more efficient and will greatly simplify the uploading of the moderation sample.

Where the minimum requirements have **not been submitted** for the moderation sample by the final moderation deadline, or the **quality of evidence is insufficient** to make a judgement, the moderation, and therefore any subsequent adjustment, will be based on the evidence that has been submitted. **Where this is insufficient to provide a mark on moderation**, a mark of zero may be given.

Preparation of candidates

Candidates should be aware of which aspects of their performance (across the AOs) will give them good marks in assessment. This is best carried out through routinely pointing out good or poor performance during the learning period, and through formative assessment.

During the learning programme, direct tutor instruction in how to tackle practical tasks through modelling, support, guidance and feedback are critical. However gradual removal of this support is necessary in preparation for summative assessment. This, supported approach is **not** valid for summative assessment.

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The purpose of summative assessment is to confirm the standard the candidate has reached as a result of participating in the learning process. Candidates should be encouraged to do the best they can and be made aware of the difference between these summative assessments and any formative assessments they have been subject to. Candidates may not have access to the full marking grids, as these may be misinterpreted as pass, merit distinction descriptors. Refer to the *Technical qualifications – teaching, learning and assessment* centre guidance document, available on the City & Guilds website for further information on preparing candidates for Technical qualification assessment.

Guidance on assessment conditions

The assessment conditions that are in place for this synoptic assignment are to:

- ensure the rigour of the assessment process
- provide fairness for candidates
- give confidence in the outcome.

They can be thought of as the rules that ensure that all candidates who take an assessment are being treated fairly, equally and in a manner that ensures their result reflects their true ability.

The conditions outlined below relate to this summative synoptic assignment. These do not affect any formative assessment work that takes place, although it is advised that candidates are prepared for the conditions they will need to work under during summative assessment.

The evidence for the tasks that make up this synoptic assignment must be completed under the specified conditions. This is to ensure authenticity and prevent malpractice as well as to assess and record candidate performance for assessment in the practical tasks. Any aspect that may be undertaken in unsupervised conditions is specified. It is the centre's responsibility to ensure that local administration and oversight gives the tutor sufficient confidence to be able to confirm the authenticity of the candidate's work.

Security and authentication of candidate work

Candidate evidence must be kept secure to prevent unsupervised access by the candidate or others. Where evidence is produced over a number of sessions, the tutor must ensure learners and others cannot access the evidence without supervision. This might include storing written work or artefacts in locked cupboards and collecting memory sticks of evidence produced electronically at the end of each session.

Candidates are required to sign declarations of authenticity, as is the tutor. The relevant form is included in this assignment pack and must be signed after the production of all evidence.

Where the candidate or tutor is unable to, or does not confirm authenticity through signing the declaration form, the work will not be accepted at moderation and a mark of zero will be given. If any question of authenticity arises eg at moderation, the centre may be contacted for justification of authentication.

Accessibility and fairness

Where a candidate has special requirements, tutors should refer to the *Access arrangements and reasonable adjustments* section of the City & Guilds website.

Tutors can support access where necessary by providing clarification to any candidate on the requirements or timings of any aspect of this synoptic assignment. Tutors should not

provide more guidance than the candidate needs as this may impact on the candidate's grade, see the guidance and feedback section below.

All candidates must be provided with an environment, time frame and resources that allows them reasonable access to the full range of marks available.

Where candidates have worked in groups to complete one or more tasks for this synoptic assessment, the tutor must ensure that no candidate is disadvantaged as a result of the performance of any other team member. If a team member is distracting or preventing another team member from fully demonstrating their skills or knowledge, the tutor must intervene.

Guidance and feedback

To support centre file management, tutors may specify a suitable file format and referencing format for evidence (unless otherwise specified eg if file naming is an assessment point for the assignment). Guidance must only support access to the assignment and must not provide feedback for improvement. The level and frequency of clarification & guidance must be

- recorded fully on the candidate record form (CRF),
- taken into account along with the candidate's final evidence during marking
- made available for moderation.

Tutors **must not** provide feedback on the quality of the performance or how the quality of evidence can be improved. This would be classed as malpractice.

Tutors **should** however provide general reminders to candidates throughout the assessment period to check their work thoroughly before submitting it, and to be sure that they are happy with their final evidence as it may not be worked on further after submission.

Candidates can rework any evidence that has been produced for this synoptic assignment during the time allowed. However, this must be as a result of their own review and identification of weaknesses and not as a result of tutor feedback. Once the evidence has been submitted for assessment, no further amendments to evidence can be made.

Tutors **should** check and be aware of the candidates' plans and designs to ensure management of time and resources is appropriate, and so any allowed intervention can take place at an appropriate time.

Tutors **should** ensure that candidates' plans for completion of the tasks distribute the time available appropriately and may guide candidates on where they should be up to at any point in a general way. Any excessive time taken for any task should be recorded and should be taken into account during marking if appropriate.

It is up to the marker to decide if the guidance the candidate has required suggests they are lacking in any AO, the severity of the issue, and how to award marks on the basis of this full range of evidence. The marker must record where and how guidance has had an impact on the marks given, so this is available should queries arise at moderation or appeal.

What is, and is not, an appropriate level of guidance

- A tutor **should intervene with caution** if a candidate has taken a course of action that will result in them not being able to submit the full range of evidence for assessment. However, this should **only** take place once the tutor has prompted the candidate to check that they have covered all the requirements. Where the tutor has to be explicit as to what the issue is, this is likely to demonstrate a lack of

understanding on the part of the candidate rather than a simple error, and full details should be recorded on the CRF.

- The tutor **should not** provide guidance if the candidate is thought to be able to correct the issue without it, and a prompt would suffice. In other words, only the minimum support the candidate actually needs should be given, since the more tutor guidance provided, the less of the candidate's own performance is being demonstrated and therefore the larger the impact on the marks awarded.
- A tutor **must not** provide guidance that the candidate's work is not at the required standard or how to improve their work. In this way, candidates are given the chance to identify and correct any errors on their own, providing valid evidence of knowledge and skills that will be credited during marking.
- The tutor **must not** produce any templates, pro-formas, work logs etc unless instructed to in the assignment guidance. Where instructed to do so, these materials must be produced as specified and contain no additional guidance. Templates provided as part of the assignment should be used as provided, and not adapted.

All specific prompts and details of the nature of any further guidance must be recorded on the relevant form and reviewed during marking and moderation.

Guidance on marking

Please refer to the *Technical qualifications – marking and moderation* centre guidance documents for further information on gathering evidence suitable for marking and moderation, and on using the marking grid and forms.

The candidate record form (CRF) is used to record:

- Details of any guidance or the level of prompting the candidate has received during the assessment period
- Rough notes bringing together relevant evidence from across tasks during marking.
- Summary justification when holistically coming to an overall judgement of the mark.

The practical observation form (PO) is used to record:

- Descriptive information and evidence of candidate performance during an observation. Although descriptions of the quality of performance should support decisions against the AOs, the notes should follow the flow of the observation, rather than attempting to assign evidence against the AOs at this point.

Marking grid

For any category, 0 marks may be awarded where there is no evidence of achievement

ASSESSMENT

%	Assessment Objective	Band 1 descriptor Poor to limited	Band 2 descriptor Fair to good	Band 3 descriptor Strong to excellent
15	<p>AO1 Recall of knowledge relating to the qualification LOs</p> <ul style="list-style-type: none"> Does the candidate seem to have the full breadth and depth of taught knowledge across the qualification to hand? How accurate is their knowledge? Are there any gaps or misunderstandings evident? How confident and secure does their knowledge seem? 	<p>(1-3 marks)</p> <p>Recall shows some weaknesses in breadth and/or accuracy. Hesitant, gaps, inaccuracy</p>	<p>(4-6 marks)</p> <p>Recall is generally accurate and shows reasonable breadth. Inaccuracy and misunderstandings are infrequent and usually minor. Sound, minimal gaps</p>	<p>(7-9 marks)</p> <p>Consistently strong evidence of accurate and confident recall from the breadth of knowledge. Accurate, confident, complete, fluent, slick</p>
<p><i>Examples of types of knowledge expected:</i> Legislation and regulations, risk assessment protocols, workshop processes, technical terminology, operating principles of machines and components, component identification, component functionality, tools and workshop equipment, specialist diagnostic test equipment.</p>				
		<p>The candidate gives limited examples from across the range of knowledge.</p> <p>Basic recall of facts offered with hesitancy and with gaps. Limited use of technical terminology.</p> <p>Little reference to legislation (including health and safety).</p>	<p>The candidate gives examples which are wide ranging and detailed in some areas.</p> <p>Recall of facts is broadly complete with some hesitancy and gaps.</p> <p>Technical terminology is regularly used with some gaps. Some examples of legislation referred to.</p>	<p>The candidate gives a wide range of accurate examples give from across the range of the qualification content.</p> <p>Excellent recall of relevant facts are offered confidently without hesitation.</p> <p>Extensive, accurate use of terminology used to demonstrate breadth of knowledge.</p> <p>Legislation referred to correctly and accurately throughout.</p>

%	Assessment Objective	Band 1 descriptor Poor to limited	Band 2 descriptor Fair to good	Band 3 descriptor Strong to excellent
20	<p>AO2 Understanding of concepts theories and processes relating to the LOs</p> <ul style="list-style-type: none"> • Does the candidate make connections and show causal links and explain why? • How well theories and concepts are applied to new situations/the assignment? • How well chosen are exemplars – how well do 	<p>(1-4 marks)</p> <p>Some evidence of being able to give explanations of concepts and theories. Explanations appear to be recalled, simplistic or incomplete.</p> <p>Misunderstanding, illogical connections, guessing,</p>	<p>(5-8 marks)</p> <p>Explanations are logical. Showing comprehension and generally free from misunderstanding, but may lack depth or connections are incompletely explored.</p> <p>Logical, slightly disjointed, plausible,</p>	<p>(9-12 marks)</p> <p>Consistently strong evidence of clear causal links in explanations generated by the candidate. Candidate uses concepts and theories confidently in explaining decisions taken and application to new situations.</p> <p>Logical reasoning, thoughtful decisions, causal links, justified</p>
		<p><i>Examples of understanding expected:</i> Risks assessment processes, understanding of operating principles of machines and components, servicing and maintenance procedures, diagnostic test procedures, use and interpretation of technical data and schematic diagrams, interpretation of diagnostic test results.</p>		

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	<p>they illustrate the concept?</p>	<p>Bottom of band: Very limited understanding of workplace safety, risk assessments and materials not always used, handled or disposed of in the safest manner. Very few elements of service activities and safety checks understood.</p> <p>Limited understanding of fault diagnosis, knows the basic procedures but is unable to interpret results.</p> <p>Shows little awareness of good working practices and unable to explain the points requested.</p> <p>Top of band: A basic understanding of workplace safety and risk assessments but materials not used, handled or disposed of in the safest manner.</p> <p>Shows some understanding of the elements of service activities and safety checks.</p>	<p>Bottom of band: There is a compliance with workplace safety, risk assessments and an awareness of correct handling and disposal procedures.</p> <p>Shows a basic knowledge of the requirements for servicing and safety checks. Shows a limited understanding of fault diagnosis, knows the basic procedures but is unsure about interpreting results.</p> <p>Shows an awareness of good working practices but unable to explain several of the points requested.</p> <p>Top of band: There is a broad compliance with workplace safety and risk assessments and an awareness of correct handling and disposal procedures.</p>	<p>Bottom of band: Full compliance with safety, risk assessments in the majority of situations shows a good understanding of the correct handling and disposal, but on occasion unsure. Good understanding of service activities but unsure of some of the correct procedures.</p> <p>A good understanding of fault diagnosis, knows the basic procedures but is not consistent in interpreting the results.</p> <p>Good understanding of good working practices but does not show a full understanding of every point requested.</p> <p>Top of band: Full compliance with safety and risk assessments. Materials are consistently used, handled and disposed of correctly.</p> <p>Full understanding of service activities.</p>
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%	Assessment Objective	Band 1 descriptor Poor to limited	Band 2 descriptor Fair to good	Band 3 descriptor Strong to excellent
		<p>Limited understanding of fault diagnosis, knows the basic procedures but can only interpret very basic result.</p>	<p>Shows a broad knowledge of the requirements for servicing and safety checks.</p> <p>Shows an understanding of fault diagnosis, knows the basic procedures but lacks the logic to interpret results.</p>	<p>Excellent understanding of fault diagnosis, knows the procedures and is consistent in interpreting correct the results</p> <p>Full understanding of hybrid power systems with all three of the points covered.</p>
35	<p>AO3 Application of practical/ technical skills</p> <ul style="list-style-type: none"> • How practiced/fluid does hand eye coordination and dexterity seem? • How confidently does the candidate use the breadth of practical skills open to them? • How accurately/successfully has the candidate been able to 	<p>(1-7 marks)</p> <p>Some evidence of familiarity with practical skills. Some awkwardness in implementation, may show frustration out of inability rather than lack of care.</p> <p>Unable to adapt, frustrated, flaws, out of tolerance, imperfect, clumsy.</p>	<p>(8-14 marks)</p> <p>Generally successful application of skills, although areas of complexity may present a challenge. Skills are not yet second nature.</p> <p>Somewhat successful, some inconsistencies, fairly adept/capable.</p>	<p>(15-21 marks)</p> <p>Consistently high levels of skill and/or dexterity, showing ability to successfully make adjustments to practice; able to deal successfully with complexity.</p> <p>Dextrous, fluid, comes naturally, skilled, practiced,</p>
		<p><i>Examples of skills expected:</i> Safe working practices, selection and use of tools and workshop equipment, selection and use of diagnostic equipment, servicing and maintenance procedures, diagnostic test procedures, evaluation of diagnostic test results, repair procedures, verification of integrity of repairs.</p>		

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	<p>use skills/achieve practical outcomes?</p>	<p>Bottom of band: Little compliance with risk assessment. Unsure of how to, handle and dispose of materials in the correct manner.</p> <p>Generally working in an untidy, but safe manner.</p> <p>Poor ability to use tools often uses the wrong tool for the job. Unsure of fault diagnosis and rectification procedures.</p> <p>Limited ability to carry out servicing in any logical manner.</p> <p>Unsure what documentation is required.</p> <p>Top of band: Limited compliance with risk assessments. Materials not always used, handled and disposed of in the correct manner.</p>	<p>Bottom of band: Good compliance with risk assessment. In most cases material handled and disposed of correctly.</p> <p>Mostly good use of tools and equipment hesitations in selecting correct tool and technique.</p> <p>Some elements of fault diagnosis and rectification carried out.</p> <p>Majority of the elements of the service and safety check carried out but not always in a logical sequence.</p> <p>Not all documentation completed and with some inaccuracies.</p> <p>Top of band: Broad compliance with risk assessment. Materials generally used, handled and disposed of in the correct manner.</p>	<p>Bottom of band: Good compliance with risk assessment. Materials always used, handled but not always disposed of correctly.</p> <p>Strong use of tools and equipment always selecting the correct tool but not always using the correct technique.</p> <p>Sufficient elements of fault diagnosis carried out and rectification action identified and carried out.</p> <p>All elements of the service and safety check carried out but not always in a logical sequence.</p> <p>Full documentation completed with very minor inaccuracies. All practical tasks carried out in line with industry standards.</p> <p>Top of band: Full compliance with workplace risk assessment. Materials always used, handled and disposed of correctly.</p> <p>Excellent use of tools and equipment always selecting the</p>
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%	Assessment Objective	Band 1 descriptor Poor to limited	Band 2 descriptor Fair to good	Band 3 descriptor Strong to excellent
		<p>Generally working in a tidy manner. Limited ability to use tools and equipment but techniques are correct.</p> <p>Limited elements of fault diagnosis carried out. Unable to interpret test results.</p> <p>Limited ability to carry out vehicle servicing but uses a logical sequence.</p>	<p>Good use of tools and equipment and in most cases showing the correct techniques.</p> <p>Some elements of fault diagnosis carried out and rectification action identified.</p> <p>Majority of the elements of the service and safety check carried out in a logical sequence.</p>	<p>correct tool and using the correct technique.</p> <p>All elements of fault diagnosis carried out and rectification action identified and carried out.</p> <p>All elements of the service and safety checks carried out in a logical sequence.</p> <p>All practical tasks carried out in line with industry speeds and standards.</p>
20	<p>AO4 Bringing it all together - coherence of the whole subject</p> <ul style="list-style-type: none"> Does the candidate draw from the breadth of their knowledge and skills? Does the candidate remember to reflect on theory when solving practical problems? 	<p>(1-4 marks)</p> <p>Some evidence of consideration of theory when attempting tasks. Tends to attend to single aspects at a time without considering implication of contextual information.</p> <p>Some random trial and error, new situations are challenging, expects guidance, narrow. Many need prompting.</p>	<p>(5-8 marks)</p> <p>Shows good application of theory to practice and new context, some inconsistencies.</p> <p>Remembers to apply theory, somewhat successful at achieving fitness for purpose. Some consolidation of theory and practice</p>	<p>(9-12 marks)</p> <p>Strong evidence of thorough consideration of the context and use of theory and skills to achieve fitness for purpose.</p> <p>Purposeful experimentation, plausible ideas, guided by theory and experience, fit for purpose, integrated, uses whole toolkit of theory and skills.</p>

PAST A

%	Assessment Objective	Band 1 descriptor Poor to limited	Band 2 descriptor Fair to good	Band 3 descriptor Strong to excellent
	<ul style="list-style-type: none"> How well can the candidate work out 	<i>Examples of bringing it all together.</i> Applying knowledge and understanding to a particular scenario or problem – justifying decisions and approaches taken, e.g. planning process, contingencies, completion of reports, reflection and evaluation.		

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	<p>solutions to new contexts/ problems on their own?</p>	<p>Bottom of band: There is some evidence of the candidate using their knowledge, understanding and skills to make straightforward links between limited topics across the qualification.</p> <p>Unsure of correct and safe working procedures. Shows little understanding of the need to work logically with the correct tools and equipment.</p> <p>Shows little understanding of servicing and safety checks when carrying these out in a practical manner.</p> <p>Top of band:</p>	<p>Bottom of band: The candidate consistently brings together their knowledge, understanding and skills when carrying out assessments and evaluations throughout tasks.</p> <p>Candidate makes key links between a range topics across the qualifications.</p> <p>Shows application of safe working procedures. Shows an understanding of the need to work in a logical sequence, uses correct tools and equipment, but does not always apply this knowledge.</p> <p>Shows an understanding of the requirements for carrying out servicing and safety checks.</p> <p>Shows an understanding of basic fault diagnosis procedures but unable to put them into practice.</p> <p>Top of band:</p>	<p>Bottom of band: Utilises a wide range of knowledge, understanding and skills from across the qualification to skills when carrying out assessments and evaluations throughout tasks.</p> <p>Integration of knowledge, understanding and skills to inform the fault diagnosis procedure.</p> <p>Always works in a safe manner showing a full awareness of health and safety requirements.</p> <p>Always works in a logical manner using the correct tools and equipment.</p> <p>Fully aware of the requirements for carrying out vehicle servicing and safety checking.</p> <p>Top of band: Utilises a wide range of knowledge, understanding and skills from across the</p>
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%	Assessment Objective	Band 1 descriptor Poor to limited	Band 2 descriptor Fair to good	Band 3 descriptor Strong to excellent
		<p>The candidate shows evidence of using their knowledge, understanding and skills to make key links between limited topics across the qualification.</p> <p>Unsure of correct and safe working procedures.</p> <p>Shows some understanding of the need to work logically with the correct tools and equipment.</p> <p>Shows some understanding of servicing and safety checks when carrying these out in a practical manner.</p> <p>Fails to put into practice basic fault diagnostic theory when carrying out identification of faults.</p>	<p>Utilises a range of knowledge, understanding and skills from across the qualification when carrying out assessments and evaluations throughout tasks.</p> <p>Shows good application of safe working procedures. Shows sound understanding of the need to work in a logical sequence, uses correct tools and equipment.</p> <p>Shows a good understanding of the requirements for carrying out servicing and safety checks.</p> <p>Shows an understanding of good fault diagnosis procedures but unable to put them into practice.</p>	<p>qualification when carrying out assessments and evaluations creatively and holistically.</p> <p>Always works in a safe manner showing a depth of awareness of health and safety requirements.</p> <p>Always works in a logical manner using the correct tools and equipment.</p> <p>Able to adapt to changing circumstances.</p>

F. T ASSIGNMENT



%	Assessment Objective	Band 1 descriptor Poor to limited	Band 2 descriptor Fair to good	Band 3 descriptor Strong to excellent
10	<p>AO5 Attending to detail/ perfecting</p> <ul style="list-style-type: none"> Does the candidate routinely check on quality, finish etc and attend to imperfections/ omissions How much is accuracy a result of persistent care and attention (eg measure twice cut once)? Would you describe the candidate as a perfectionist and wholly engaged in the subject? 	<p>(1-2 marks)</p> <p>Easily distracted or lack of checking. Insufficiently concerned by poor result; little attempt to improve. Gives up too early; focus may be on completion rather than quality of outcome.</p> <p>Careless, imprecise, flawed, uncaring, unfocused, unobservant, unmotivated.</p>	<p>(3-4 marks)</p> <p>Aims for satisfactory result but may not persist beyond this. Uses feedback methods but perhaps not fully or consistently.</p> <p>Variable/intermittent attention, reasonably conscientious, some imperfections, unremarkable.</p>	<p>(5-6 marks)</p> <p>Alert, focussed on task. Attentive and persistently pursuing excellence. Using feedback to identify problems for correction.</p> <p>Noticing, checking, persistent, perfecting, refining, accurate, focus on quality, precision, refinement, faultless, meticulous.</p>
		<p><i>Examples of attending to detail:</i> Compliance with protocols and procedures, verification of diagnostic test results and evaluations, verification of integrity of repair before handover to customer, verification of condition of machinery or equipment before handover to customer, verification of recorded details and final reports.</p>		

MENT

%	Assessment Objective	Band 1 descriptor Poor to limited	Band 2 descriptor Fair to good	Band 3 descriptor Strong to excellent
		<p>The candidate demonstrates no concern with aiming to meet industry standards, speeds and quality.</p> <p>Limited planning of activities demonstrated.</p> <p>Inaccuracies and gaps in results generated – showing a lack of care.</p> <p>Little commitment to completion of tasks.</p> <p>Limited reflection showing minimal depth and evaluation of own performance.</p> <p>Limited checks carried out when working.</p> <p>Not all documentation is correctly completed and with a number of inaccuracies.</p>	<p>The candidate shows some consideration with aiming to meet industry standards, speeds and quality.</p> <p>Intermittent level of commitment displayed in work ethic in completion of tasks – eg limited attention to detail and customer care when working.</p> <p>Some inaccuracies and gaps in output generated.</p> <p>Reflection shows attempt at depth and evaluation of own performance.</p> <p>Some consideration of planning of activities demonstrated.</p> <p>Most checks carried out when working.</p> <p>Most documentation completed with few inaccuracies.</p>	<p>The candidate engages fully with tasks and meets industry standards, speeds and quality.</p> <p>Demonstrates a consistent positive work ethic and commitment to completion of tasks.</p> <p>The candidate is highly focussed on task with minimal errors.</p> <p>Consistent and considered planning of activities demonstrated.</p> <p>High levels of care and meticulous levels of detail and accuracy throughout.</p> <p>Thorough reflection showing depth and evaluation of own performance.</p> <p>Comprehensive tests carried out throughout working processes. Documentation completed to a high level of accuracy.</p>

T H

F.



Declaration of authenticity

Technical qualifications

Assessment ID	Qualification number
Candidate name	Candidate number
Centre name	Centre number

Candidate:

I confirm that all work submitted is my own, and that I have acknowledged all sources I have used.

Candidate signature	Date

Tutor:

I confirm that all work was conducted under conditions designed to assure the authenticity of the candidate's work, and am satisfied that, to the best of my knowledge, the work produced is solely that of the candidate.

Tutor signature	Date

Additional Support

Has the candidate received any additional support in the production of this work?

No Yes (Please tick appropriate)

If yes, give details below (and on a separate sheet if necessary).

Note: Where the candidate and/or tutor is unable to, or does not confirm authenticity through signing this declaration form, the work will not be accepted at moderation and a mark of zero will be given. If any question of authenticity arises, the tutor may be contacted for justification of authentication.

Candidate Record Form

Technical qualifications

Level 3 Advanced Technical Extended Diploma in Land-Based Engineering (0171-38)

Level 3 Land-based Engineering - Synoptic assignment (0171-017)

Candidate name	Candidate number
Centre name	Centre number

Marker Notes – Please always refer to the relevant marking grid for guidance on allocating marks and make notes that describe the quality of the evidence and justification of marks. Expand boxes as required.

AO1 – Recall - Breadth, depth, accuracy												
15%	1	2	3	4	5	6	7	8	9			
AO1 Mark	Notes & justification											
AO2 – Understanding - Security of concepts, causal links												
20%	1	2	3	4	5	6	7	8	9	10	11	12
AO2 Mark	Notes & justification											

AO3 - Practical skill - Dexterity, fluidity, confidence, ease of application																					
35%	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
AO3 Mark	Notes & justification																				
AO4 – Bringing it together - use of knowledge to apply skills in new context																					
20%	1	2	3	4	5	6	7	8	9	10	11	12									
AO4 Mark	Notes & justification																				
AO5 - Attending to detail / perfecting - Repeated checking, perfecting, noticing, engaged																					
10%	1	2	3	4	5	6															
AO5 Mark	Notes & justification																				

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Tutor signature	Date

Total

Technical qualifications - Practical Observation Form

Assessment ID	Qualification number
Candidate name	Candidate number
Centre name	Centre number

Complete the table below referring to the relevant marking grid found in the assessment pack. Do not allocate marks at this stage.

Assessment Objective (AO)	Notes – detailed, accurate and differentiating notes that identify areas of strength and weakness are necessary to distinguish between different qualities of performance, and to facilitate accurate allocation of marks once all evidence has been submitted.
AO1 Describe how well the candidate shows recall of knowledge e.g. stating facts without explanation / simple descriptions of what they are carrying out / showing aspects of straightforward knowledge through logical sequencing and application of skill etc.	<div style="font-size: 2em; opacity: 0.3; transform: rotate(-45deg); pointer-events: none;"> PAST ASSESSMENT (2019) – DO NOT USE </div>
AO2 Describe how well the candidate shows understanding when carrying out practical tasks e.g. their explanation of why they are completing a process or how they may change their course of action / are they able to justify their actions etc.	

Assessment Objective (AO)	Notes – detailed, accurate and differentiating notes that identify areas of strength and weakness are necessary to distinguish between different qualities of performance, and to facilitate accurate allocation of marks once all evidence has been submitted.
AO3 Describe how well the candidate demonstrated their practical skills . e.g. how practiced/fluid is hand eye coordination and dexterity / how confident are they / how accurate or 'polished' is the outcome / safe working etc.	
AO4 Describe how well the candidate brings it all together – e.g. how coherent are their actions / how well do they draw from the breadth of their knowledge and skills / reflection on theory when solving practical problems / How well can they work out solutions to new contexts/ problems on their own / time management etc.	
AO5 Describe how well the candidate attended to detail e.g. professionalism / perfecting / accuracy checking / taking care / methodical working etc.	

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Tutor signature	Date