

**Level 2 Technical Certificate in
Engineering (Maintenance)
(1145-21)**

[1145-026]

[Sample]

Synoptic Assignment Pack

Introduction

General information about structure of the assignment pack

Candidate section

- Candidate guidance
- Assignment and tasks

Tutor section

- Guidance on tasks
- Guidance on assessment conditions
- Guidance on marking
- Marking criteria
- Mark sheet
- Feedback form

Synoptic Assignment Pack

Candidate section

Candidate guidance

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

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

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.

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

You should take care when planning to make sure you have divided the time available between tasks appropriately. 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 work is 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. Written work eg reports may be word processed but this is not a requirement.

All graphs should be neat and tidy to scale and annotated. Graphs can be produced by hand or using computer software.

FINAL - SUBJECT TO ACCREDITATION

Assignment

You are part of a maintenance team working for a multinational food manufacturing company. The maintenance team carry out a range of planned maintenance work on different types of equipment. The company has a lean culture and so any maintenance task requires engineers to:

- Review processes, documentation and data
- Carry out any unplanned maintenance identified through planned maintenance activities
- Keep visual records of maintenance activities

The production manager has reported a drop in production output. Data shows this is caused by issues related to a conveyor motor. The motor has been used for many years and drives the conveyor which transfers the finished product to the packaging process. Data related to the use of this motor has been produced.

You are to carry out the annual service on a three phase motor and review the data to determine when it should be replaced.

You will be provided with the appropriate maintenance information and documentation needed to carry out and record the maintenance activities.

Tasks

Task 1

You are required to carry out the planned annual service on the three phase motor.

- a) Produce a risk assessment for completing the service
- b) Complete the Isolation Procedure document in Appendix 1
- c) Carry out the planned annual service as outlined in the standard operating procedure (SOP) in Appendix 2.
- d) Produce replacement parts for any damaged components. Produce a production plan and technical sketch. You must evaluate the quality of the replaced component, completing an Inspection, Testing and Measurement Report.
- e) You must complete the Job Card in Appendix 3 whilst carrying out the maintenance.

Conditions of assessment:

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

What must be handed in for marking:

- Risk Assessment
- Isolation Procedure
- Job Card
- Replacement component production plan
- Inspection, Testing and Measurement Report.

Additional records to support your performance:

- Your tutor's notes of your working practice, the standard and accuracy of the finished work, and details of your contribution
- Photographs of your work in progress
- Video of your performance

Task 2

You are required to review the SOP for the planned maintenance of the three phase motor and create a revised SOP using the visual management technique.

Conditions of assessment:

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

What must be handed in for marking:

- Standard Operating Procedure (SOP)

Task 3

You will be provided with data related to the use of the motor. You are required to review this data to predict when the motor should be replaced. You can use either graphical or mathematical means to determine the replacement point.

You are required to produce a Technical Report to include the following as a minimum:

- Proposed course of action to replace motor

- Implications and considerations for the production department
- Implications and considerations for the engineering department

Conditions of assessment:

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

What must be handed in for marking:

- Technical Report

FINAL - SUBJECT TO ACCREDITATION

Tutor guidance

This synoptic assessment is designed to require the candidate to make use 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 a set of tasks. They then have to draw on their knowledge and skills and independently select the correct processes, skills, materials, and approaches to take.

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.

You should explain to candidates 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.

The candidate 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.

Guidance on tasks

Time

The recommended time allocated for the completion of the tasks and production of evidence for this assessment is approximately **13** hours. Candidates should be required to plan their work and their plans confirmed with them for appropriateness in relation to the time allocated for each task.

It is recommended that the centre allocate time to tasks as follows:

Task 1 – 3 hours

Task 2 – 8 hours

Task 3 – 2 hours

Resources

Candidates must have access to a suitable range of resources to carry out the tasks, including:

- A three phase motor with suitable keyway, damaged key and some form of output device e.g. coupling or pulley. The motor needs to be connected to a three phase supply, **but should not be live**
- Tools and equipment including hand tools, isolation and lock-off kit
- Testing equipment including a multimeter and insulation resistance meter
- A technical sketch template
- Access to ICT software
- An electronic copy of the SOP

Learners must not be presented with any document templates beyond those provided with this assignment.

Task 3

As centres may be using different types of three phase motors, they should produce the data that is relevant to the motor used in Task 1. Centres should provide candidates with annual data over a period of 5 years related to the resistance of each of the coils.

Learners can use digital cameras to create evidence of their performance and outputs.

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.

Observation

Where the tutor is required to carry out observation of performance, detailed notes must be taken of the quality of performance along with any other aspects of performance that will support a judgement of the marks to be awarded (eg measurements to confirm accuracy/tolerances).

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 and accurate.

Tutors should ensure that any supporting evidence including eg photographs or video can be easily matched to the correct candidate, are clear, sufficiently well-lit and showing the areas of

particular interest 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).

Preparation

Candidates should be aware of which aspects of their performance 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. 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. They may not have access to the marking grids.

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. Formative assessment will necessarily take a significant role throughout the learning programme where support, guidance and feedback (with the opportunity to show how feedback has been used to improve outcomes and learning) are critical. This approach is not, however, valid for summative assessment. The purpose of summative assessment is to confirm the standard the candidate has achieved as a result of participating in the learning process.

Authentication of candidate work

Candidates are required to sign declarations of authenticity, as is the tutor. The relevant form is included in this assignment pack.

The completion of the final evidence for the tasks that make up this synoptic assignment must be completed in 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.

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.

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.

Accessibility and fairness

Where the candidate has special requirements, tutors should refer to the separate guidance document.

Tutors can provide clarification to any candidate on the requirements 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. Guidance must only support access to the assignment and must not provide feedback for improvement. Any clarification and guidance should be recorded fully and must be taken into account along with the candidate's final evidence during marking and must be 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 that they must check their work thoroughly before submitting it to be sure that they are happy with their final evidence as it may not be worked on further after submission.

It is up to the tutor during marking to decide in what area, if any, the guidance provided suggests the candidate is lacking, the severity of the issue, and how to award marks on the basis of this full range of evidence. The tutor 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.

Example:

A tutor should intervene 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.

The tutor should do their best to refrain from providing 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 guidance provided, the larger the impact on the marks awarded.

Both prompts and details of the nature of any further guidance must be recorded and reviewed during marking and moderation.

A tutor may 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.

Tutors should ensure that candidates' plans or 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.

All candidates must be provided with an environment and resources that allows them 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 on marking

Please see the centre guidance document **Guidance for assessment of City & Guilds technical qualifications, including grading and use of marking grids** for detailed guidance on using the following marking grid.

FINAL - SUBJECT TO ACCREDITATION

Marking grid

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

%	Assessment Objective	Band 1 descriptor Poor to limited	Band 2 descriptor Fair to good	Band 3 descriptor Strong to excellent
20	AO1 Recall of knowledge relating to the qualification LOs <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? 	(1-4 marks) Recall shows some weaknesses in breadth and/or accuracy. Hesitant, gaps, inaccuracy	(5-8 marks) Recall is generally accurate and shows reasonable breadth. Inaccuracy and misunderstandings are infrequent and usually minor. Sound, minimal gaps	(9-12 marks) Consistently strong evidence of accurate and confident recall from the breadth of knowledge. Accurate, confident, complete, fluent
		Examples of knowledge expected: risk assessment contents, isolation procedure, job card, use of SOP, maintenance documents, inspection and testing reports, tools and equipment used, production plan, technical sketch, revised SOP, technical report, graphs, engineering technology.		
		Candidate has shown basic knowledge from across the qualification. Information has errors and gaps. There is a general lack of clarity. Some work may not have been completed due to lack of time or knowledge.	Candidate has shown a good range of knowledge from across the qualification. There are minor errors and few gaps in information provided. There is some detail and clarity and all tasks are completed.	Candidate shows in-depth and detailed knowledge across the qualification. Work is detailed and completed accurately with minor omissions. All tasks are completed.

10	AO2 Understanding of concepts theories and processes relating to the LOs <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 they illustrate the concept? 	(1-2 marks) Some evidence of being able to give explanations of concepts and theories. Explanations appear to be recalled, simplistic or incomplete. Misunderstanding, illogical connections, guessing,	(3-4 marks) Explanations are logical. Showing comprehension and generally free from misunderstanding, but may lack depth or connections are incompletely explored. Logical, slightly disjointed, plausible,	(5-6 marks) 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. Logical reasoning, thoughtful decisions, causal links, justified
		<i>Examples of understanding expected: risk ratings with consideration for controls, rationale for process, measurement, inspection and testing, selection of tools and equipment, planning for production, visual management and business improvement techniques, application of techniques, revised SOP, technical report, business functions, interpretation of data, justification, use of supporting evidence.</i>		
		Candidate has shown basic understanding of some concepts from across the qualification. Some points were covered in detail.	Candidate has shown understanding of a range of concepts from across the qualification, which were sound and often detailed.	Candidate has shown in-depth and detailed understanding of concepts across the whole qualification range, showing a high degree of confidence and accuracy in their understanding.
30	AO3 Application of practical/ technical skills <ul style="list-style-type: none"> How practiced/fluid does hand eye coordination and dexterity seem? How confidently does the candidate use the breadth 	(1-6 marks) Some evidence of familiarity with practical skills. Some awkwardness in implementation, may show frustration out of inability rather than lack of care. Unable to adapt, frustrated, flaws, out of tolerance, imperfect, clumsy.	(7-12 marks) Generally successful application of skills, although areas of complexity may present a challenge. Skills are not yet second nature. Somewhat successful, some inconsistencies, fairly adept/capable.	(13-18 marks) Consistently high levels of skill and/or dexterity, showing ability to successfully make adjustments to practice; able to deal successfully with complexity. Dextrous, fluid, comes naturally, skilled, practiced,

	of practical skills open to them?	Examples of skills expected: completion of all tasks, maintenance activities, following SOP, use of tools and equipment, safe working practices, manual dexterity, application of techniques, time management, sequencing, quality of end products, technical sketches, graphs.
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FINAL - SUBJECT TO ACCREDITATION

	<ul style="list-style-type: none"> How accurately/successfully has the candidate been able to use skills/achieve practical outcomes? 	<p>Bottom of band: Candidate created outputs some of which were incomplete. Work lacks structure and logic and is completed inefficiently. Quality and accuracy is inconsistent and time management issues result in some work either not being to the standard required or even completed. May not show full range of skills to complete tasks but was able to work safely at all times.</p> <p>Top of band: Candidate demonstrated basic application of technical skills. Some errors and omissions in practical work. Some structure but lacking in a logical approach resulting in an inefficient process. Quality and accuracy is inconsistent with time management issues evident in standard of work and completion of all tasks. Able to obtain some data from tests and to work safely at all times.</p>	<p>Bottom of band: Candidate demonstrated application of technical skills to create required outputs which were generally accurate and to the required standard but with some errors and omissions. Some structure but lacking in a logical approach resulting in an inefficient process. Quality is generally good, with all work being completed in time allocated, although some of it was rushed. Demonstrated manual dexterity in the use of equipment and materials. Able to obtain accurate data from tests and work safely at all times.</p> <p>Top of band: Candidate demonstrated application of technical skills when completing tasks with some inconsistency. Outputs were generally accurate. Work is well planned and completed in time. Obtained some valid, reliable and accurate data. Demonstrated manual dexterity in the use of equipment and materials and outputs were functional. Able to work safely at all times.</p>	<p>Bottom of band: Candidate demonstrated consistent application of technical skills. Outputs were accurate, functional and finished to a high standard. Work is well planned and efficiently and accurately carried out to a high standard in a timely manner. Technology was used effectively. Obtained valid, reliable and accurate data through appropriate methodologies. Showed a high degree of manual dexterity in the use of equipment and materials. Able to work safely at all times.</p> <p>Top of band: Candidate demonstrated consistent, confident application of technical skills. Outputs were accurate, functional and finished to a professional standard. Plans were followed with time managed efficiently. There was effective use of technology. Obtained valid, reliable and accurate data through appropriate methodologies. Showed a high degree of manual dexterity in the use of equipment and materials. Able to work safely at all times.</p>
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20	AO4 Bringing it all together - coherence of the whole subject <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? How well can the candidate work out solutions to new contexts/ problems on their own? 	(1-4 marks) Some evidence of consideration of theory when attempting tasks. Tends to attend to single aspects at a time without considering implication of contextual information. Some random trial and error, new situations are challenging, expects guidance, narrow. Many need prompting.	(5-8 marks) Shows good application of theory to practice and new context, some inconsistencies. Remembers to apply theory, somewhat successful at achieving fitness for purpose. Some consolidation of theory and practice	(9-12 marks) Strong evidence of thorough consideration of the context and use of theory and skills to achieve fitness for purpose. Purposeful experimentation, plausible ideas, guided by theory and experience, fit for purpose, integrated, uses whole toolkit of theory and skills.
		<i>Examples of bringing it all together: Risk assessment, planning maintenance tasks, approach used to complete maintenance tasks, approach used to review maintenance tasks, measurement and inspection activities, technical sketch, production plan, review of SOP, technical report, calculations, graphs, analysis of data.</i>		
		Candidate presented some evidence of using their knowledge, understanding and skills to make straightforward links between limited topics across the qualification.	Candidate used a range of knowledge, understanding and skills from across the qualification when developing and evaluating the design model. Integration of knowledge, understanding and skills informed development of design model to commercial manufacture.	Candidate consistently used a wide range of knowledge, understanding and skills from across the qualification to develop and evaluate the design model. Integration of knowledge, understanding and skills informed justified recommendations for development of design model to commercial manufacture.
Assessment Objective	Band 1 descriptor Poor to limited	Band 2 descriptor Fair to good	Band 3 descriptor Strong to excellent	

FINAL

10	A05 Attending to detail/ perfecting	<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? 	(1-2 marks)	(3-4 marks)	(5-6 marks)
			<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, unfocussed, unobservant, unmotivated.</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>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>Examples of attending to detail: <i>maintenance report, maintenance documentation, measurements and testing, risk assessment, technical sketch, revised SOP, technical report, calculations, graphs, practical activities, new key.</i></p>		
		<p>Candidate shows limited attention to detail. There is limited evidence of reviewing outputs or monitoring processes, leading to inaccuracies, errors and/or omissions. There is limited attempt to maintain an effective working environment.</p>	<p>Candidate shows consistent attention to detail. There has been some attempt to review outputs and monitor processes. Evidence provided is generally accurate and related to specific tasks. There is clear evidence of attempting to maintain an effective working environment.</p>	<p>Candidate is highly focused on the task showing care and attention to detail. There is evidence of the quality of outputs being checked regularly and processes monitored with revisions made where appropriate. Minimal errors are evident. The working environment is neat and tidy throughout.</p>	

FINAL - SUB

5	AO6 Identify and use knowledge from other sources – research <ul style="list-style-type: none"> Does the candidate identify and use a wide range of appropriate sources effectively? How critically is information appraised, for plausibility, suitability and relevance? How purposefully is information used? 	(1 mark) Uncritical use of a few basic sources. Referencing lacking or inappropriate. Lack of interpretation/ consideration in use, referencing minimal. Limited, uncritical, unfocussed, no clear purpose, cut and paste.	(2 marks) Use of sources is generally good, possibly inconsistent or critical appraisal is somewhat under-developed. Evidence of generally consistent referencing. Fitful, unexceptional, partially considered, reasonably reliable, sometimes straying from the aim.	(3 marks) Broad and appropriate use of sources. Clear referencing and acknowledgement where appropriate. Information gathered is appropriate and used effectively. Broad/deep, relevant, considered, well chosen, purposeful, interpreted.
		<i>Examples of research: risk assessment, planning documentation, SOP, condition monitoring data, inspection and testing, attention to detail, quality of outputs. .</i>		
		Limited use of sources of information. Some evidence of linking information provided to tasks.	Use of sources of information is generally consistent. Some evidence of effectively using information provided to help in written reports and practical activities.	Research skills clearly evident where information from tasks used thoroughly to help complete all work. Assessment evidence shows information drawn from other tasks and used to complete work to high standard.
5	AO8 Communication/ Presentation/ Documentation <ul style="list-style-type: none"> How well are formally produced pieces of work (writing, drawings, posters etc) structured, laid out, presented, communicated? Does the candidate use logical and well structured 	(1 mark) Format choices are limited to a basic ‘tool kit’ and sometimes inappropriate. Some evidence of attempts to use structure and layout to aid communication. Somewhat disorganised/ unstructured, informal, basic.	(2 marks) Some successful use of conventional formats, but some content may be lacking, eg in logical/coherent approach. Reasonably successful, conveys message quite well.	(3 marks) Appropriate choice of methods, layout, styles and conventions maximise communication. Written style and structure/composition is coherent and logical. Professional, organised, well structured, easy to follow, even complex ideas.
		<i>Examples of communication: Risk assessment, job card, isolation procedure, inspection testing and measurement report, production plan, revised SOP, technical sketch, graphs, technical report, calculations.</i>		

	<p>writing that is coherent and easy to follow?</p> <ul style="list-style-type: none"> • How appropriate and well presented are the chosen communication methods and formats? 	<p>There are inaccuracies and significant omissions in communication. Documentation, whether written or diagrammatic, does not fully represent intended message. Used a limited range of techniques to support communication. Written communication has some significant spelling and grammatical errors.</p>	<p>Communication has some omissions but limited inaccuracies in use of conventions. Used some techniques to support communication. Communication has some structure with some grammatical and/or spelling errors which do not impact significantly on the readability. All data is presented but labelling and use of appropriate measurement units is not consistent. Ideas are mostly presented in a clear manner but with some inconsistency.</p>	<p>Candidate makes accurate use of conventions in communication. A high level of detail is provided. Used effective techniques to support communication. Presentation of communication is clear and logically structured with minor grammatical and/or spelling errors. Data is presented clearly with appropriate labelling and measurement units. Communication of ideas is consistently effective.</p>
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FINAL - SUBJECT TO R

APPENDIX 1

Isolation Procedure

Isolation Procedure (ELECTRICAL)

(Complete precisely and legibly in BLOCK CAPITALS)

To be completed by the candidate and authorised by Assessor

(1) I declare it is safe to work on the equipment listed below, which has been made dead, isolated and earthed in accordance with the Electricity Safety Rules and Procedures and I have physically identified the equipment and explained the extent of the work to the prospective Person in Charge who is to be responsible for the work.

(2) I have shown the prospective Person in Charge the electrical diagram on the Safety Programme and the safety arrangements at the points of isolation and the places of work, and I have explained all the relevant safety procedures and precautions.

Equipment to be worked on

Location of equipment

Details of other safety procedures or documents that relate to the proposed work

Details of work to be done

Specific points where equipment is isolated

SAFETY CHECKLIST: (tick the applicable box)

1. Has permission for the intended work been confirmed?
2. Is the equipment isolated from all sources of supply?
3. Are Caution Signs fixed at all points of isolation
4. Are Safety Locks fixed at all points of isolation?
5. Has the equipment been proved dead?

Candidate name _____ Signature _____

Assessor name _____ Signature _____

Time and Date _____

APPENDIX 2

SOP for Motor service

- Isolate motor from supply
- Disconnect from output device (coupling or belt drive)
- Remove output coupling/pulley from motor output shaft
- Remove key
- Mark both endplates for removal
- Remove rotor from stator
- Carry out mechanical checks
- Carry out electrical checks
 - Visually inspect cabling, connections and stator coils
 - Prepare motor for testing
 - Measure coil resistance
 - Measure insulation resistance of coil to earth and coil to coil
- Produce replacement components where required
- Re-assemble motor reversing above steps

APPENDIX 3

Job Card

Equipment Location		
Equipment Description		
Health & Safety: Risk Assessment (use and review) Isolation procedure (use and review)	Comments: Comments	
Planned maintenance activity	<i>Annual Service of motor</i>	Task completed (yes/no) results obtained
Motor service		

Mechanical checks

Electrical checks

Motor reassembly		
Production Department feedback on Performance: <i>intermittent tripping causing production line to stop; some noise and vibration noticed in the area of the motor</i>	Action Required (yes/no): Comments:	
Investigation:	Actions & activities undertaken	Comments & results obtained
Recommendations:	Actions & activities proposed & undertaken	Comments & results obtained
Handover information:		Signed (engineering) Signed (production)

Declaration of Authenticity

Candidate name

Candidate number

Centre name

Centre number

Candidate:

I confirm that all work submitted for this synoptic assignment 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/assessor signature

Date

Assessment feedback form

Candidate name

Candidate number

Tutor name

Date of assessment

Task / AO	Feedback

Tutor signature and date: