

Principal Learning
Engineering

Unit **F548**: The engineered world

OCR Level 2 Principal Learning

Mark Scheme for June 2014

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This mark scheme is published as an aid to teachers and students, to indicate the requirements of the examination. It shows the basis on which marks were awarded by examiners. It does not indicate the details of the discussions which took place at an examiners' meeting before marking commenced.

All examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

Mark schemes should be read in conjunction with the published question papers and the report on the examination.

OCR will not enter into any discussion or correspondence in connection with this mark scheme.

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Question	Question/Answer	Mark	Guidance
<p>1</p> <p>(a) (b)</p>	<p>Please tell me about an engineering achievement you have researched. Explain how people’s lives have changed as a result of this engineering achievement.</p> <p>Band 1 Limited explanation – award one mark for talking about an engineering achievement and up to a further two marks for explaining how people’s lives have been changed as a result of this achievement.</p> <p>Band 2 Adequate explanation – award up to two marks for talking about an engineering achievement and up to a further four marks for including depth or breadth explaining how people’s lives have been changed as a result of this achievement.</p> <p>Band 3 Detailed explanation – award up to three marks for talking about an engineering achievement and up to a further seven marks for including depth and breadth explaining how people’s lives have been changed as a result of this achievement.</p> <p>Depth: Expansion of a single change. Breadth: Expansion involving multiple changes.</p> <p>Lower end of mark band just meets criteria. Middle of mark band adequately meets criteria. Upper end of mark band convincingly meets criteria. Part (a) and part (b) of this question can be treated independently ie. It is possible to gain three marks for part (a) and zero marks for part (b).</p> <p>.....</p>	<p>Up to [3]</p> <p>Up to [6]</p> <p>Up to [10]</p>	<p>For all questions. For answers marked by level of response: To determine the level – Start at the highest level and work down until you reach the level that matches the answer To determine the mark within this level, refer to the chart in paragraph 10.</p>
<p>2</p>	<p>Please tell me about any issues which had to be overcome during the development of the engineering achievement you have researched.</p> <p>Band 1 Limited explanation – award one mark for identifying a single issue and up to a further two marks for relevant points.</p> <p>Band 2 Adequate explanation – award up to six marks for a response that considers at least two issues in depth or breadth.</p> <p>Band 3 Detailed explanation – award up to six marks for a response that considers at</p>	<p>Up to [3]</p> <p>Up to [6]</p>	

Question	Question/Answer	Mark	Guidance
3	<p>least two issues and up to a further four marks for including logical and relevant supporting evidence that demonstrates both depth and breadth.</p> <p>Depth: Expansion of a single issue eg. properties of materials. Breadth: Expansion covering multiple issues eg. size and weight of components, material availability.</p> <p>Lower end of mark band just meets criteria. Middle of mark band adequately meets criteria. Upper end of mark band convincingly meets criteria.</p> <p>.....</p>	Up to [10]	
	<p>Please tell me about the products or services provided by any engineering sector you have studied.</p> <p>Band 1 Limited information – award up to three marks for a basic explanation, of a product or service provided by an engineering sector.</p> <p>Band 2 Adequate information – award up to six marks for an adequate explanation in breadth or depth, of a product or service provided by an engineering sector.</p> <p>Band 3 Detailed information – award up to ten marks for a detailed explanation in breadth and depth, of a product or service provided by an engineering sector.</p> <p>Depth: Expansion of a single product or service in a single sector eg. for the automotive sector (product – tyres), talking about the tread pattern, composition, sizes and reinforcement. (services – car services) oil check, brake check, filter changes. Breadth: Expansion of multiple products or services within a single sector.</p> <p>Lower end of mark band just meets criteria. Middle of mark band adequately meets criteria. Upper end of mark band convincingly meets criteria.</p>	<p>Up to [3]</p> <p>Up to [6]</p> <p>Up to [10]</p>	

Question	Question/Answer	Mark	Guidance
4	<p>Describe the job role and responsibilities of a technical person within any engineering sector you have studied.</p> <p>Band 1 Limited information – award up to three marks for a basic description of the job role and responsibilities of a technical person within an engineering sector.</p> <p>Band 2 Adequate information – award up to six marks for an adequate description in breadth or depth, of the job role and responsibilities of a technical person within an engineering sector.</p> <p>Band 3 Detailed information – award up to ten marks for a detailed description in breadth and depth, of the job role and responsibilities of a technical person within an engineering sector.</p> <p>Depth: Focussing on a single job role/responsibilities, eg. Electronics Technician.</p> <p>Breadth: Multiple jobs in a single sector or, a single job in more than one sector.</p> <p>Lower end of mark band just meets criteria. Middle of mark band adequately meets criteria. Upper end of mark band convincingly meets criteria.</p> <p>.....</p>	<p>Up to [3]</p> <p>Up to [6]</p> <p>Up to [10]</p>	
5	<p>(a) (i) Name the region with the least total incidents of pollution.</p> <p>(ii) Name the region with the most total incidents of pollution.</p> <p>(b) What causes this region to have the most incidents of pollution.</p> <p>Band 1 Limited explanation – award one mark for naming the region with the least total incidents and one mark for naming the region with the most total incidents and one mark for a relevant point about what causes this region to have the most incidents of pollution.</p>	<p>Up to [3]</p> <p>Up to [6]</p> <p>Up to [10]</p>	

Question	Question/Answer	Mark	Guidance
6	<p>Band 2 Adequate explanation – award one mark for naming the region with the least total incidents and one mark for naming the region with the most total incidents and up to a further four marks for a response which includes relevant examples about what causes this region to have the most incidents of pollution.</p> <p>Band 3 Detailed explanation – award one mark for naming the region with the least total incidents and one mark for naming the region with the most total incidents and up to a further eight marks for a response which includes logical and relevant supporting evidence about what causes this region to have the most incidents of pollution.</p> <p>Lower end of mark band just meets criteria. Middle of mark band adequately meets criteria. Upper end of mark band convincingly meets criteria.</p> <p>.....</p> <p>What can you tell Bev about the rights of an employee and the rights of his employer.</p> <p>Band 1 Limited explanation – award one mark for a basic definition of the rights of an employee, one mark for the rights of an employer, and one mark for making a relevant point about employees or employers.</p> <p>Band 2 Adequate explanation – award one mark for a basic definition of the rights of an employee, one mark for the rights of an employer, and up to a further four marks for a response about employees and employers which includes relevant examples.</p> <p>Band 3 Detailed explanation – award one mark for a basic definition of the rights of an employee, one mark for the rights of an employer, and up to a further eight marks for a response about employees and employers which includes logical and relevant examples.</p> <p>Lower end of mark band just meets criteria. Middle of mark band adequately meets criteria. Upper end of mark band convincingly meets criteria.</p>	<p>Up to [3]</p> <p>Up to [6]</p> <p>Up to [10]</p>	

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