

## 2760-201 Level 2 The engineered world

### Practice question paper mark scheme

Duration: 1 hour 30 minutes

Assessment Type: Practice question paper

Number of marks: 48

#### Section A

Learning outcome	Question number	Marking guidance	Marks	Total marks	Comments
4.1	1	a) Any valid explanation of task distribution within group.	1	2	
		b) Any valid area of research allocated to learner.	1		
4.1	2	Mark for the following : Any valid sources of research, ie, Web based, library, Data sheets from manufacturers I suppliers, etc.	1	1	
4.1	3	Mark for any two of the following: <ul style="list-style-type: none"> <li>• Clear lines of communication for support and feedback.</li> <li>• Clear plan with timelines.</li> <li>• Appointment of team leader I recorder I secretary to keep the group on task.</li> <li>• Allocation of other roles.</li> <li>• Any other valid ingredient.</li> </ul>	1 x 2	2	

Learning outcome	Question number	Marking guidance	Marks	Total marks	Comments
4.1	4	Mark for any two of the following: <ul style="list-style-type: none"> <li>• Gantt charts.</li> <li>• Monitoring of progress at specific times.</li> <li>• Scheduled team meetings.</li> <li>• Deadlines I timelines.</li> <li>• Any other valid point.</li> </ul>	1 x 2	2	
4.1	5	Mark for each of the following: <ul style="list-style-type: none"> <li>• A valid explanation of how learner supported the other team members.</li> <li>• A valid explanation of how the learner gave appropriate feedback to the rest of the group.</li> </ul>	1 x 2	2	
4.2	6	a) Mark for any two of the following: <ul style="list-style-type: none"> <li>• Conservation of natural resources (Gas, Oil, etc.).</li> <li>• Greater economy.</li> <li>• Locally sourced or manufactured fuels.</li> <li>• Freedom from political sanctions.</li> <li>• Fuels from renewable or recycled products are environmentally friendly.</li> <li>• Any similar valid reason.</li> </ul>	1 x 2	2	
		b) Mark each for any two of the following: <ul style="list-style-type: none"> <li>• More economical less demand on natural resources.</li> <li>• Safer (slightly less explosive than petrol).</li> <li>• Longer range between re-fuelling.</li> <li>• Greater energy extraction from fuel.</li> <li>• Readily available at Garages I Filling stations.</li> <li>• Any similar valid reason.</li> </ul>	1 x 2	2	

Learning outcome	Question number	Marking guidance	Marks	Total marks	Comments
4.2	7	Mark for one of the following: <ul style="list-style-type: none"> <li>• Development of the Common Rail direct fuel injection system.</li> <li>• Development of the electronic control unit as an injection system.</li> <li>• Development of a variably controlled injection system.</li> </ul>	1	4	
		Mark each for any two of the following: <ul style="list-style-type: none"> <li>• Improved performance.</li> <li>• Lower emissions.</li> <li>• Reduced noise.</li> <li>• Better atomisation.</li> <li>• Little or no heating up time.</li> </ul>	1 x 2		
		Mark for one of the following: <ul style="list-style-type: none"> <li>• Increased MPH/km/l.</li> <li>• Easily converted to use alternative fuel, Biodiesel.</li> <li>• Or similar valid point.</li> </ul>	1		
4.2	8	Mark each for any two of the following: <ul style="list-style-type: none"> <li>• Spillages are messy.</li> <li>• Higher freezing point.</li> <li>• Unpleasant odour.</li> <li>• Any other valid point.</li> </ul>	1 x 2	2	
4.2	10	Mark each for any three of the following: <ul style="list-style-type: none"> <li>• Lower costs for transport companies.</li> <li>• Lower costs to producers and / or consumers.</li> <li>• Heavy loads easily transported.</li> <li>• Greater range for servicing remote areas.</li> <li>• Other forms of transport - ships and trains.</li> <li>• Agricultural use - tractors, combine harvesters, etc.</li> </ul>	1 x 3	3	

Learning outcome	Question number	Marking guidance	Marks	Total marks	Comments
		<ul style="list-style-type: none"> <li>Or similar valid reason .</li> </ul>			

**Section B**

Learning outcome	Question number	Marking guidance	Marks	Total marks	Comments
1.1	11	Mark each for three of the following: <ul style="list-style-type: none"> <li>Energy Generation and distribution.</li> <li>Nuclear Technologies.</li> <li>Waste management and Water resources.</li> <li>Built environment engineering.</li> <li>Engineering Manufacture and Maintenance.</li> <li>Medical and Sports engineering.</li> </ul>	1 x 3	3	
1.2	12	a) Mark each for two of the following: <ul style="list-style-type: none"> <li>Motor vehicles.</li> <li>Water-borne craft, ie, Leisure craft, Barges, etc.</li> <li>Railways.</li> <li>Agricultural vehicles.</li> <li>Any other valid product.</li> </ul>	1 x 2	2	
1.2	12	b) Mark each for two of the following: <ul style="list-style-type: none"> <li>Any two valid products from the engineering sectors.</li> </ul>	1 x 2	2	

Learning outcome	Question number	Marking guidance	Marks	Total marks	Comments
		c) Mark each for two of the following: <ul style="list-style-type: none"> <li>• Road traffic management.</li> <li>• Logistics.</li> <li>• Canal and Waterways management.</li> <li>• Railtrack services.</li> <li>• Any other valid service.</li> </ul>	1 x 2	2	
		d) Mark each for two of the following: <ul style="list-style-type: none"> <li>• Any two valid services from the engineering sectors.</li> </ul>	1 x 2	2	
2.1	13	<b>Professional</b> <ul style="list-style-type: none"> <li>• Chemical Engineer.</li> <li>• Project Engineer.</li> <li>• Plant Engineer.</li> <li>• Any other valid professional job role.</li> </ul>	1	3	
		<b>Technical</b> <ul style="list-style-type: none"> <li>• Team leader.</li> <li>• Analyst.</li> <li>• Assistant Chemist.</li> <li>• Any other valid Technical job role.</li> </ul>	1		
		<b>Operative</b> <ul style="list-style-type: none"> <li>• Driller I Rigger.</li> <li>• Lab assistant.</li> <li>• Plant operator.</li> <li>• Any other valid Operative role.</li> </ul>	1		

## 2760-201 Level 2 Principal Learning in Engineering– Mark scheme

Learning outcome	Question number	Marking guidance	Marks	Total marks	Comments
2.2	14	Mark each for the following: <ul style="list-style-type: none"> <li>• Educational - Engineering Diploma Level 112.</li> <li>• Experience - Apprenticeship/traineeship in motor vehicle workshops.</li> </ul>	1 x 2	2	
2.2	15	2 marks for one of the following flow charts: <ul style="list-style-type: none"> <li>• Engineering Diploma L1 – Engineering Diploma L2 - Engineering Diploma L3 - Industrial training.</li> <li>• City &amp; Guilds Quals L1 - L2 - L3 - Industrial training.</li> <li>• IMI Quals L1-L2-L3 - Industrial training.</li> <li>• BTEC Quals L1- L2-L3 - Industrial training.</li> </ul>	2	2	
2.3	16	<b>Professional body</b> <ul style="list-style-type: none"> <li>• Institution of Chemical Engineers (I.Chem.E).</li> <li>• The Energy Institute (IE).</li> <li>• Any other valid example.</li> </ul>	1	2	
		<b>Example</b> <ul style="list-style-type: none"> <li>• Registration and monitoring of members who have appropriate qualifications and experience to practice.</li> <li>• Education, training and library of technical support.</li> <li>• Exchange of ideas and knowledge.</li> <li>• Any other valid example.</li> </ul>	1		

2760-201 Level 2 Principal Learning in Engineering– Mark scheme

Learning outcome	Question number	Marking guidance	Marks	Total marks	Comments
3.1	17	<p>Mark each for two of the following:</p> <ul style="list-style-type: none"> <li>• To protect the workforce and I or the general public from the effects of hazardous substances.</li> <li>• To set standards for employers and employees to follow to prevent illness from exposure.</li> <li>• To regulate the Handling, movement and storage of hazardous substances.</li> <li>• Any other valid reason.</li> </ul>	1 x 2	2	
3.2	18	<p>Mark each for two of the following:</p> <ul style="list-style-type: none"> <li>• Sex Discrimination Act.</li> <li>• Race Relations Act.</li> <li>• Equal Pay Act.</li> <li>• Employment Equality (Age) Regulations 2006.</li> <li>• Joining a Union.</li> <li>• Any other valid laws.</li> </ul>	1 x 2	2	