

Commentary on candidate evidence

The candidate evidence has achieved the following marks for each question of this course assessment component – question paper.

Candidate 1

Section 1

The candidate achieved **36/60 marks** for this section.

Question 1(a)(i)

The candidate was awarded **1 mark** because 'pine' is an accepted response.

Question 1(a)(ii)

The candidate was awarded **0 marks** because 'pillar drill' is not an accepted response.

Question 1(a)(iii)

The candidate was awarded **0 marks** because 'rebate plane' is not an accepted response.

Question 1(b)(i)

The candidate was awarded **4 marks** because 'use a steel rule to measure', 'use a marking gauge to mark the saw line', 'using a sash cramp to keep it in place' and 'use a hand router to clean the joint out' are accepted responses.

Question 1(b)(ii)

The candidate was awarded **0 marks** because 'lap joint' is not an accepted response.

Question 1(b)(iii)

The candidate was awarded **1 mark** because 'use a engineer square.... check if it is a 90° angle' is an accepted response.

Question 1(b)(iv)

The candidate was awarded **0 marks** because 'Glue' is not an accepted response.

Question 1(b)(v)

The candidate was awarded **2 marks** because 'sand the wood first to make it nice and smooth' and 'put white spirit on an old rag and rub it against the wood' (removing dust) are accepted responses.

Question 1(c)(i)

The candidate was awarded **1 mark** because 'Brass doesn't rust' is an accepted response. No marks were awarded for 'durable' as this does not refer to the suitability of brass for the clock face.

Question 1(c)(ii)

The candidate was awarded **1 mark** because 'use a steel rule to measure the line down and across of the star' is an accepted response. No mark was awarded for the use of the centre punch to mark the centre, as the question asks for marking of lines only.

Question 1(c)(iii)

The candidate was awarded **0 marks** because 'tenon saw' is not an accepted response.

Question 1(d)(i)

The candidate was awarded **2 marks** because 'Check if the protective visor is down' and 'Check if the material fits the lathe tigh so it doesn't fall off' are accepted responses.

Question 1(d)(ii)

The candidate was awarded **0 marks** as all responses are not accepted responses.

Question 1(d)(iii)

The candidate was awarded **2 marks** because 'the tap has grease on it' and 'turn the tap back and forward' are accepted responses.

Question 1(d)(iv)

The candidate was awarded **0 marks** because 'glue' is not an accepted response.

Question 1(e)(i)

The candidate was awarded **0 marks** because 'Make sure the drill fits in the hole' and 'Don't take off protective plastic' are not accepted responses.

Question 1(e)(ii)

The candidate was awarded **2 marks** because 'heat this line with a strip heater' and 'rap it around a former and hold it there until it cools down' are accepted responses.

Question 1(e)(iii)

The candidate was awarded **1 mark** because 'so the acrylic didn't crack' is an accepted response.

Question 2(a)

The candidate was awarded **1 mark** because 'Different option from other people', (read as opinion) is an accepted response. The second point 'get different answers for every question' is too similar to the first to gain a second mark. The third point 'doesn't take a while to do' is too vague to gain a mark.

Question 2(b)

The candidate was awarded **1 mark** because 'To check if your design can do everything that is in your specification' is an accepted response.

Question 3(a)

The candidate was awarded **0 marks** because 'Getting ideas', 'What the product will look like' and 'What will it do' are all not accepted responses.

Question 3(b)

The candidate was awarded **1 mark** because 'mood board' is an accepted response.

Question 4(a)

The candidate was awarded **2 marks** because 'get an idea of what it looks like' and 'quick to do' are accepted responses. Unqualified 'quick' responses are accepted in the context of this question.

Question 4(b)

The candidate was awarded **0 marks** because 'To see what it will look like' and 'see all the different function' are not accepted responses.

Question 4(c)

The candidate was awarded **3 marks** because 'see if it fits your hands', 'You can see how big the product is' and 'can see where different add-ons like buttons will be placed' are accepted responses.

Question 5

The candidate was awarded **3 marks** because 'handle will fit the width of a human hand', 'button is easy to access while holding this kettle' and 'Is it easy to lift or is it too heavy' are accepted responses. The last point 'enough space between the metal and the handle without burning yourself' is a safety issue, and is therefore awarded no mark.

Question 6(a)

The candidate was awarded **2 marks** because 'Does the bike have safety lights when cycling in the dark' and 'Are the brakes easy to use' are accepted responses.

Question 6(b)

The candidate was awarded **3 marks** because 'Does the bike tyres run smoothly along different surfaces', 'Are the pedals easy to reach and not too stiff' and 'Can the basket hold a monjartie of items without falling' are accepted responses.

Question 7(a)

The candidate was awarded **3 marks** because the comparison of the bright colours in Clock A and Clock C is a valid response. The candidate has identified that Clock A has a bigger face than the other two making it easier to read. They have also stated that Clock B has more simple colours and is of an old-fashioned style which may not appeal to a young target market.

Question 7(b)

The candidate was awarded **0 marks** because 'So the person/buyer knows what brand they are buying' and 'more eye-catching for the buyer' are too vague to be awarded a mark.

Section 2

The candidate received **10/20 marks** for this section.

Question 8(a)(i)

The candidate was awarded **1 mark** because 'Copper' is an accepted response.

Question 8(a)(ii)

The candidate was awarded **1 mark** because 'will not rust' is an accepted response.

Question 8(b)(i)

The candidate was awarded **0 marks** because 'Acrylic' is not an accepted response.

Question 8(b)(ii)

The candidate was awarded **0 marks** because 'reheat it and bend it' is not an accepted response. As this is a state question, only the first response can be awarded a mark.

Question 8(c)

The candidate was awarded **0 marks** because all responses are not accepted responses.

Question 8(d)

The candidate was awarded **1 mark** because 'they are all the same shape and size' is an accepted response. Unqualified quick and easy responses gain no marks.

Question 8(e)

The candidate was awarded **0 marks** because 'Mass Manufacturing' is a manufacturing system, not a process. No marks were awarded for suitability as water tanks are not all the same shape, size and colour.

Question 9(a)

The candidate was awarded **3 marks** because 'more efficient', 'no mistake of human error' and 'less people have to get paid' are accepted responses.

Question 9(b)

The candidate was awarded **0 marks** because the response is not an accepted response.

Question 10

The candidate was awarded **2 marks** because 'easier to use instead of making them from scratch' and 'the full product can be manufactured quicker' are accepted responses.

Question 11

The candidate was awarded **2 marks** because 'Use a finish on a product that will make it more long lasting' and 'Use strong materials like ones that are non-ferrous because they don't rust' are accepted responses.

Total marks awarded – 46/80

Candidate 2

Section 1

The candidate achieved **34/60 marks** for this section.

Question 1(a)(i)

The candidate was awarded **0 marks** because 'mdf' is not an accepted response.

Question (a)(ii)

The candidate was awarded **1 mark** because 'forstener drill' is an accepted response.

Question (a)(iii)

The candidate was awarded **1 mark** because 'smoothing plane' is an accepted response.

Question 1(b)(i)

The candidate was awarded **3 marks** because 'use a tenon saw to cut the line', 'use a chisel to help lift the material' and 'use a "granny's tooth"...to make the cut out a smooth surface' are accepted responses.

Question 1(b)(ii)

The candidate was awarded **0 marks** because 'through housing' is not an accepted response.

Question 1(b)(iii)

The candidate was awarded **1 mark** because 'using a set square to be sure the corners are at 90° angles' is an accepted response.

Question 1(b)(iv)

The candidate was awarded **1 mark** because 'wood glue' is an accepted response.

Question 1(b)(v)

The candidate was awarded **1 mark** because 'sand the material down' is an accepted response.

Question 1(c)(i)

The candidate was awarded **0 marks** because 'easy to clean' and 'durable' are not accepted responses in the context of this question – the clock face does not need to be easy to clean and durable.

Question 1(c)(ii)

The candidate was awarded **1 mark** because 'measure with a steel rule to find the correct length' is an accepted response.

Question 1(c)(iii)

The candidate was awarded **0 marks** because 'Tenon saw' is not an accepted response.

Question 1(d)(i)

The candidate was awarded **2 marks** because 'ensure the material is secured in place' and 'make sure the lathe guard has been placed on' are accepted responses.

Question 1(d)(ii)

The candidate was awarded **1 mark** because 'step turning' is an accepted response.

Question 1(d)(iii)

The candidate was awarded **1 mark** because 'only twist 180° at a time' is an accepted response.

Question 1(d)(iv)

The candidate was awarded **0 marks** because 'super glue' is not an accepted response, as there is too small a contact area between the curved and flat areas.

Question 1(e)(i)

The candidate was awarded **1 mark** because 'Cover the whole material in masking tape' is an accepted response.

Question 1(e)(ii)

The candidate was awarded **2 marks** because 'use a strip heater to warm the material' and 'find a 90° which could be a table and hold it there' – implying the use of a former, are accepted responses.

Question 1(e)(iii)

The candidate was awarded **1 mark** because 'the other side of the material would get in the way' is an accepted response.

Question 2(a)

The candidate was awarded **1 mark** because 'you can get other peoples opinions' is an accepted response. The remainder of the response is still referring to people's opinions.

Question 2(b)

The candidate was awarded **1 mark** because 'can be used as a checklist' is an accepted response.

Question 3(a)

The candidate was awarded **3 marks** because 'write a topic', 'skribble down every idea' and 'even if you think it's a rubbish idea' are accepted responses.

Question 3(b)

The candidate was awarded **0 marks** because 'messy sketching' is not accepted responses.

Question 4(a)

The candidate was awarded **1 mark** because 'helps you to be able to communicate and talk with people' is an accepted response.

Question 4(b)

The candidate was awarded **2 marks** because 'to know what sizes of material your going to need' and 'know what material you're going to use' are accepted responses.

Question 4(c)

The candidate was awarded **2 marks** because 'can be used to test your design...function actually works' and 'can help you communicate your design' are accepted responses.

Question 5

The candidate was awarded **3 marks** because 'a persons hand size to be able to grip and lift the handle', 'finger size to push down the button' and 'the lid...must be able to open easily' accepted responses. The third bullet point from the candidate was considered too vague and therefore awarded no mark.

Question 6(a)

The candidate was awarded **1 mark** because 'The lights on the bike should go 360° around the bike' is an accepted response.

Question 6(b)

The candidate was awarded **1 mark** because 'The seat should be adjustable' is an accepted response.

Question 7(a)

The candidate was awarded **1 mark** because the comparison of the different colours of the three clocks is a valid response.

Question 7(b)

The candidate was awarded **1 mark** because 'brands can become more popular or trendy and other people will buy it' is an accepted response (self-promoting/advertising).

Section 2

The candidate received **13/20 marks** for this section.

Question 8(a)(i)

The candidate was awarded **1 mark** because 'Copper' is an accepted response.

Question 8(a)(ii)

The candidate was awarded **1 mark** because 'strong/durable' is an accepted response.

Question 8(b)(i)

The candidate was awarded **0 marks** because 'Acrylic' is not an accepted response.

Question 8(b)(ii)

The candidate was awarded **1 mark** because 'comes in loads of different colours' is an accepted response.

Question 8(c)

The candidate was awarded **2 marks** because 'ejection marks' and 'mould split lines' are accepted responses.

Question 8(d)

The candidate was awarded **1 mark** because 'makes everything identicle' is an accepted response. An unqualified quick response is awarded no marks.

Question 8(e)

The candidate was awarded **2 marks** because 'rotational moulding' and 'the water tank is hollow' are accepted responses.

Question 9(a)

The candidate was awarded **0 marks** because the response is too vague.

Question 9(b)

The candidate was awarded **1 mark** because 'a one-off product to be limited edition' is an accepted response.

Question 10

The candidate was awarded **2 marks** because 'are easy to buy as suppliers are stocked up on things' and 'people are then able to buy in bulk' are accepted responses (easy to source and available in large quantities).

Question 11

The candidate was awarded **2 marks** because 'test the product before it gets sold' and 'use high quality materials and parts' are accepted responses.

Total marks awarded – 47/80

Candidate 3

Section 1

The candidate achieved **48/60 marks** for this section.

Question 1(a)(i)

The candidate was awarded **1 mark** because 'Red Pine' is an accepted response.

Question (a)(ii)

The candidate was awarded **1 mark** because 'fosiner bit' is an accepted response.

Question (a)(iii)

The candidate was awarded **1 mark** because 'Jack plane' is an accepted response.

Question 1(b)(i)

The candidate was awarded **4 marks** because 'set you're marking gauge to 12mm the score the top of the wood', 'set the marking gauge...and mark the woods side up to 12mm', 'use a tenor or flush cut saw to cut a line' and 'use a chisle to remove the remaining waste material' are accepted responses.

Question 1(b)(ii)

The candidate was awarded **1 mark** because 'dowel joint' is an accepted response.

Question 1(b)(iii)

The candidate was awarded **2 marks** because 'use a try-square to check' and 'use a template' are accepted responses.

Question 1(b)(iv)

The candidate was awarded **1 mark** because 'PVA' is a accepted response.

Question 1(b)(v)

The candidate was awarded **3 marks** because 'sand the wood with low and high grit', 'remove any dust' and 'wet the wood' are accepted responses.

Question 1(c)(i)

The candidate was awarded **2 marks** because 'easy to source' and 'easy to work with' are accepted responses.

Question 1(c)(ii)

The candidate was awarded **1 mark** because 'use a scribber to scribe the lines' is an accepted response. 'Use a steel rule to find the center' is too vague to be awarded a mark.

Question 1(c)(iii)

The candidate was awarded **1 mark** because 'hacksaw' is an accepted response.

Question 1(d)(i)

The candidate was awarded **2 marks** because 'make sure the tail stock is secure in place' and 'make sure the material is secure in the lathe' are accepted responses.

Question 1(d)(ii)

The candidate was awarded **1 mark** because 'Paralell turning' is an accepted response.

Question 1(d)(iii)

The candidate was awarded **1 mark** because 'make sure the tools used are sharp' is an accepted response.

Question 1(d)(iv)

The candidate was awarded **0 marks** because 'super glue' is not an accepted response, as there is too small a contact area between the curved and flat areas.

Question 1(e)(i)

The candidate was awarded **1 mark** because 'make sure the hole is drilled slowly' is an accepted response.

Question 1(e)(ii)

The candidate was awarded **2 marks** because 'use a strip heater to heat up a strip of the plastic' and 'bend the plastic and hold in vice till it sets' are accepted responses.

Question 1(e)(iii)

The candidate was awarded **1 mark** because 'less chance of the acrylic cracking' is an accepted response.

Question 2(a)

The candidate was awarded **3 marks** because 'gather information from a wide range of people', 'written to suite a target audience' and 'results are easy to present' are accepted responses.

Question 2(b)

The candidate was awarded **1 mark** because 'can be used as a check list' is an accepted response.

Question 3(a)

The candidate was awarded **3 marks** because 'group activity', 'no silly ideas' and 'ideas should bounce off eachother' are accepted responses.

Question 3(b)

The candidate was awarded **1 mark** because 'taking the pencil for a walk' is an accepted response.

Question 4(a)

The candidate was awarded **2 marks** because 'its quick' and 'give a rough idea of what the model will look like' are correct responses in the context of this question

Question 4(b)

The candidate was awarded **1 mark** because 'let the manufacturer see how the parts fit together' is an accepted response.

Question 4(c)

The candidate was awarded **2 marks** because 'gives a better understanding of the model' and 'easier to generate ideas and refine ideas' are accepted responses.

Question 5

The candidate was awarded **2 marks** because 'the size of the kettle, how heavy it is' and 'buttons aren't hard to press' are accepted responses. No marks are awarded for 'the size of the handel' as there is no reference to body part.

Question 6(a)

The candidate was awarded **2 marks** because 'braks were added' and 'brake aren't hard to press' are accepted responses. The last statement is too vague to be awarded a mark.

Question 6(b)

The candidate was awarded **2 marks** because 'a bascet was added for storage' and 'the frame is low so you can get on and of it easily' are accepted responses.

Question 7(a)

The candidate was awarded **1 mark** because 'clock a is more modern than clock B' is an accepted response.

Question 7(b)

The candidate was awarded **2 marks** because 'premium prices' and 'customer loyalty' are accepted responses.

Section 2

The candidate received **10/20 marks** for this section.

Question 8(a)(i)

The candidate was awarded **0 marks** because 'mild steel' is not an accepted response.

Question 8(a)(ii)

The candidate was awarded **0 marks** because 'it doesnt rust' is not an accepted response.

Question 8(b)(i)

The candidate was awarded **1 mark** because 'ABS' is an accepted response.

Question 8(b)(ii)

The candidate was awarded **1 mark** because 'its strong and durabil' is an accepted response.

Question 8(c)

The candidate was awarded **2 marks** because 'injection marks' and 'split lines' are accepted responses.

Question 8(d)

The candidate was awarded **1 mark** because 'accurate' is an accepted response. The first bullet point, 'it's easy when making more than one' is too vague to be awarded a mark.

Question 8(e)

The candidate was awarded **0 marks** because it is not an accepted response.

Question 9(a)

The candidate was awarded **3 marks** because 'can produce mass amounts', 'less labor intensive' and 'is accurate' are accepted responses.

Question 9(b)

The candidate was awarded **1 mark** because 'requires a skilled craftsman to make it' is an accepted response.

Question 10

The candidate was awarded **1 mark** because 'can fit a wide range of things' is an accepted response.

Question 11

The candidate was awarded **0 marks** because the response is does not answer the question and is therefore awarded no marks.

Total marks awarded – 58/80

Candidate 4

Section 1

The candidate achieved **48/60 marks** for this section.

Question 1(a)(i)

The candidate was awarded **1 mark** because 'spruce' is an accepted response.

Question (a)(ii)

The candidate was awarded **1 mark** because 'forstner bit' is an accepted response.

Question (a)(iii)

The candidate was awarded **1 mark** because 'Jack plane' is an accepted response.

Question 1(b)(i)

The candidate was awarded **4 marks** because 'use steel rule and pencil to mark dimensions', 'use marking gauge to mark half the width of the wood', 'use a try square to draw lines at 90° angles' and 'use tenon saw to cut down the lines' are accepted responses.

Question 1(b)(ii)

The candidate was awarded **1 mark** because 'finger joint' is an accepted response.

Question 1(b)(iii)

The candidate was awarded **2 marks** because 'checking each corner is at 90° with a protractor' and 'using a try square' are accepted responses.

Question 1(b)(iv)

The candidate was awarded **1 mark** because 'PVA' is an accepted response.

Question 1(b)(v)

The candidate was awarded **2 marks** because 'sand pencil marks and blemishes off the wood' and 'remove any glue runs' are accepted responses.

Question 1(c)(i)

The candidate was awarded **1 mark** because 'its corrosion resistant' is an accepted response. No marks were awarded for 'its durable' as this doesn't refer to the suitability of brass for the clock face.

Question 1(c)(ii)

The candidate was awarded **2 marks** because 'use scribe and steel rule to mark the middle' and 'use engineers square to mark lines' are accepted responses.

Question 1(c)(iii)

The candidate was awarded **1 mark** because 'hacksaw' is an accepted response.

Question 1(d)(i)

The candidate was awarded **0 marks** because both responses are not accepted responses.

Question 1(d)(ii)

The candidate was awarded **2 marks** because 'parallel turning' and 'facing off' are accepted responses.

Question 1(d)(iii)

The candidate was awarded **0 marks** because 'increasing speed of machine' and 'keeping the bar steady' are not accepted responses.

Question 1(d)(iv)

The candidate was awarded **0 marks** because 'spot welding' is not an accepted response.

Question 1(e)(i)

The candidate was awarded **1 mark** because 'using a stepped drill bit' is an accepted response.

Question 1(e)(ii)

The candidate was awarded **2 marks** because 'use strip heater to heat plastic' and 'bend to a 90° angle' are accepted responses.

Question 1(e)(iii)

The candidate was awarded **1 mark** because 'to prevent plastic cracking' is an accepted response.

Question 2(a)

The candidate was awarded **2 marks** because 'allows the public to tell designers what is needed', (gather opinions) and 'allows open ended questions to be asked' (specific questions) are accepted responses. No mark was awarded for 'allows designers to gather more information' as this is a repeat of gathering opinions.

Question 2(b)

The candidate was awarded **1 mark** because 'show a designer what a product must do' is an accepted response.

Question 3(a)

The candidate was awarded **3 marks** because 'topic is written on...piece of paper', 'ideas are shouted out' and 'written on the paper' are accepted responses.

Question 3(b)

The candidate was awarded **1 mark** because 'morphological analysis' is an accepted response.

Question 4(a)

The candidate was awarded **2 marks** because 'generates lots of ideas quickly' and 'show customers what a product could look like' are accepted responses.

Question 4(b)

The candidate was awarded **1 mark** because 'show manufacturers the dimensions of the product' is an accepted response.

Question 4(c)

The candidate was awarded **3 marks** because 'to test dimensions of a product', 'test the function of a product' and 'show what a product could look like' are accepted responses.

Question 5

The candidate was awarded **4 marks** because 'the switch clicks when...finished boiling', 'the handle is big enough to fit 95th percentile hands', 'light enough so that it can be lifted easily' and 'the switch is easy to push down' are accepted responses.

Question 6(a)

The candidate was awarded **2 marks** because 'the bike has breaks' and 'the bike has lights' are accepted responses.

Question 6(b)

The candidate was awarded **1 mark** because 'the bike has a basket to hold things' is an accepted response.

Question 7(a)

The candidate was awarded **3 marks** because 'Clock A has an organic shape whereas C has a geometric shape' (shape), 'Clock B appears more vintage whereas Clock A appears modern' (style), and 'Clock C appears to have a smooth texture whereas Clock A appears more rough' (texture) are all accepted responses.

Question 7(b)

The candidate was awarded **2 marks** because 'more likely to buy a product from a brand they recognise' (trust) and 'more likely to buy products from a brand they have bought before products from before' (customer loyalty) are accepted responses.

Section 2

The candidate received **16/20 marks** for this section.

Question 8(a)(i)

The candidate was awarded **1 mark** because 'Copper' is an accepted response.

Question 8(a)(ii)

The candidate was awarded **1 mark** because 'is corrosion resistant' is an accepted response.

Question 8(b)(i)

The candidate was awarded **1 mark** because 'ABS' is an accepted response.

Question 8(b)(ii)

The candidate was awarded **1 mark** because 'can come in a variety of colours' is an accepted response.

Question 8(c)

The candidate was awarded **2 marks** because 'injection points' and 'mould split lines' are an accepted responses.

Question 8(d)

The candidate was awarded **1 mark** because 'creates a smooth finish' is an accepted response.

Question 8(e)

The candidate was awarded **1 mark** because 'the water tank is hollow on the inside' is an accepted response. A mark can still be awarded for suitability even if the candidate has stated the incorrect process.

Question 9(a)

The candidate was awarded **3 marks** because 'reduce waste of materials', 'no need to pay wages' and 'machines can run 24/7' are accepted responses.

Question 9(b)

The candidate was awarded **1 mark** because 'products are made as one off products' is an accepted response.

Question 10

The candidate was awarded **2 marks** because 'can be mass manufactured' (available in large quantities) and 'come in set sizes' (produced in a range of standard sizes) are accepted responses. No mark was awarded for the third bullet point as the statement refers to the design of the product.

Question 11

The candidate was awarded **2 marks** because 'using durable materials' and 'making replacement parts available to customers' are accepted responses. The second bullet point 'products easy to repair' is too similar to 'replacement parts' and therefore is awarded no mark.

Total marks awarded – 64/80

Candidate 5

Section 1

The candidate achieved **50/60 marks** for this section.

Question 1(a)(i)

The candidate was awarded **1 mark** because 'Scots Pine' is an accepted response.

Question 1(a)(ii)

The candidate was awarded **1 mark** because 'Foistner Bit' is an accepted response.

Question 1(a)(iii)

The candidate was awarded **1 mark** because 'Jack Plane' is an accepted response.

Question 1(b)(i)

The candidate was awarded **4 marks** because 'measuring in the length' followed by the comment 'steel rule' next to the first illustration, the illustration of two lines and reference to 'try square', 'saw down on the inside of the A lines using a tenon saw' and 'Remove waste with chisel' are accepted responses.

Question 1(b)(ii)

The candidate was awarded **1 mark** because 'Finger Joint' is an accepted response.

Question 1(b)(iii)

The candidate was awarded **2 marks** because 'Measure corner to corner and if the lengths are the same it is square' and 'Place a try square in the corner of the joints and if there is a gap it is not square' are accepted responses.

Question 1(b)(iv)

The candidate was awarded **1 mark** because 'PVA glue' is an accepted response.

Question 1(b)(v)

The candidate was awarded **2 marks** because the descriptions of sanding the wood and removing the pencil marks are accepted responses. Effectively, the candidate has referenced sanding to smooth the wood and sanding to remove pencil marks, which is acceptable to be awarded the marks.

Question 1(c)(i)

The candidate was awarded **1 mark** because 'Easy to work with' is an accepted response. No marks were awarded for 'strength' as this does not refer to the suitability of brass for the clock face (the clock face does not require strength).

Question 1(c)(ii)

The candidate was awarded **2 marks** because 'Measure onto the middle ... with a steel rule and scribe' and 'Extend the lines down with and engineers square' are accepted responses.

Question 1(c)(iii)

The candidate was awarded **1 mark** because 'Junior Hacksaw' is an accepted response.

Question 1(d)(i)

The candidate was awarded **2 marks** because 'Ensure the piece is secure in the 3 Jaw Chuck' and 'the safety guard is down' are accepted responses.

Question 1(d)(ii)

The candidate was awarded **2 marks** because 'Facing off' and 'Parallell turning' are accepted responses.

Question 1(d)(iii)

The candidate was awarded **2 marks** because 'Apply a small amount of tapping paste' and 'Turn the die wrench half way round then quarter turn back' are accepted responses.

Question 1(d)(iv)

The candidate was awarded **0 marks** because 'Soldering' is not an accepted response.

Question 1(e)(i)

The candidate was awarded **1 mark** because 'Drill a smaller piolet hole' is an accepted response.

Question 1(e)(ii)

The candidate was awarded **2 marks** because 'Put the acrylic in the former' and 'wait for it to cool down and tak shape' are accepted responses. No marks were awarded for the first statement 'Heat up the area which is being formed' because no reference is made to a strip heater.

Question 1(e)(iii)

The candidate was awarded **1 mark** because 'The plastic may be more fragile after being formed' is an accepted response.

Question 2(a)

The candidate was awarded **2 marks** because 'know what features people are looking out for' and 'To find out the target market of the product' are accepted responses. The first and second bullet points from the candidate are very similar and therefore no further mark is awarded.

Question 2(b)

The candidate was awarded **1 mark** because 'To show the functions, materials and aesthetics of the product' is an accepted response.

Question 3(a)

The candidate was awarded **1 mark** because 'in a group' is an accepted response.

Question 3(b)

The candidate was awarded **1 mark** because 'Morphological analysis' is an accepted response.

Question 4(a)

The candidate was awarded **2 marks** because 'what the model can look like' and 'easy to adapt' are accepted responses.

Question 4(b)

The candidate was awarded **1 mark** because 'dimentions ... refer to them' is an accepted response.

Question 4(c)

The candidate was awarded **2 marks** because 'understand how the product should look' and 'see where mistakes are and how to improve on them' are accepted responses.

Question 5

The candidate was awarded **4 marks** because 'handle needs to be a shape which fits most users hands', 'button to open the top needs to be easy to access', 'kettle needs to be a comfortable weight' and 'handle needs to have grip' are accepted responses.

Question 6(a)

The candidate was awarded **3 marks** because 'brakes must be easy to reach incase of an emergency stops', 'Mud guard must not be touching the wheel to prevent it from getting caught' and 'Reflectors and lights so the bike is visible in the dark' are accepted responses.

Question 6(b)

The candidate was awarded **3 marks** because 'The basket on the front to allow for storage', 'Railings on the back to allow for extra storage' and 'pedals must work to allow the bike move' are accepted responses.

Question 7(a)

The candidate was awarded **1 mark** because the comparison of the 'Turquoise colour' in clock A and 'bright Pink' in clock C is an accepted response.

Question 7(b)

The candidate was awarded **2 marks** because 'makes the product more desirable' and 'people will continue to buy from it' are accepted responses.

Section 2

The candidate received **12/20 marks** for this section.

Question 8(a)(i)

The candidate was awarded **0 marks** because 'Mild steel' is not an accepted response.

Question 8(a)(ii)

The candidate was awarded **0 marks** because 'will not rust if it is outside' is not an accepted response.

Question 8(b)(i)

The candidate was awarded **0 marks** because 'urea formaldehyde' is not an accepted response.

Question 8(b)(ii)

The candidate was awarded **0 marks** because 'can be injected moulded into the shape' is not an accepted response.

Question 8(c)

The candidate was awarded **2 marks** because 'Split lines' and 'Ejection points' are accepted responses.

Question 8(d)

The candidate was awarded **2 marks** because 'moulds can be re-used over and over' and 'gives a similar product each time instead of different quality' are accepted responses.

Question 8(e)

The candidate was awarded **0 marks** because 'Injection moulding' and 'can be mass manufactured easily' are not accepted responses.

Question 9(a)

The candidate was awarded **3 marks** because 'can run 24/7', 'without very much human assistance' (less labour intensive) and 'No human error' (accuracy of parts) are accepted responses.

Question 9(b)

The candidate was awarded **0 marks** because the response is not an accepted response.

Question 10

The candidate was awarded **2 marks** because 'Cheap to buy in large numbers' (qualified cheap) and 'comes in a range of different sizes' are accepted responses.

Question 11

The candidate was awarded **3 marks** because 'Make the products out of more durable materials', 'Easy to repair' and 'Use finishes which protect them' are accepted responses.

Total marks awarded – 62/80

Candidate 6

Section 1

The candidate achieved **41/60 marks** for this section.

Question 1(a)(i)

The candidate was awarded **1 mark** because 'Cedar' is an accepted response.

Question a(ii)

The candidate was awarded **1 mark** because 'Forstner bit' is an accepted response.

Question a(iii)

The candidate was awarded **0 marks** because 'Coping Saw' is not an accepted response.

Question 1(b)(i)

The candidate was awarded **4 marks** because 'steel rule to measure the correct size', 'Try square to help draw a 90 degree angle', tenon saw to cut down to the line' and 'chisel to remove the material' are accepted responses.

Question 1(b)(ii)

The candidate was awarded **1 mark** because 'Finger joint' is an accepted response.

Question 1(b)(iii)

The candidate was awarded **0 marks** because the response is not an accepted response.

Question 1(b)(iv)

The candidate was awarded **1 mark** because 'PVA glue' is an accepted response.

Question 1(b)(v)

The candidate was awarded **1 mark** because 'Make sure the wood is sanded down' is an accepted response.

Question 1(c)(i)

The candidate was awarded **0 marks** because 'very strong' and 'durable' are not accepted responses in the context of this question – the clock face does not need to be strong and durable. As this is a 'state' question, the first two responses are marked so it is not possible to consider 'easy to work with'.

Question 1(c)(ii)

The candidate was awarded **0 marks** because the response is not an accepted response.

Question 1(c)(iii)

The candidate was awarded **0 marks** because the response is not an accepted response.

Question 1(d)(i)

The candidate was awarded **2 marks** because 'Make sure that the guard is down' and 'Make sure that the chuck key has been removed' are accepted responses.

Question 1(d)(ii)

The candidate was awarded **1 mark** because 'parallel turning' is an accepted response.

Question 1(d)(iii)

The candidate was awarded **0 marks** because the response is not an accepted response.

Question 1(d)(iv)

The candidate was awarded **1 mark** because 'Epoxy Resin' is an accepted response. As this is a 'name' question only the first response is marked.

Question 1(e)(i)

The candidate was awarded **1 mark** because 'Drill slowly to stop the plastic from cracking because of the pressure' is an accepted response.

Question 1(e)(ii)

The candidate was awarded **1 mark** because 'Use a former to help make it correct angle' is an accepted response.

Question 1(e)(iii)

The candidate was awarded **1 mark** because 'easier to drill a hole into a flat piece of plastic rather than one bent at a right angle' is an accepted response.

Question 2(a)

The candidate was awarded **3 marks** because 'reach a large audience ... you'll get more responses', 'can give questionnaires to a specific target market' and 'easy to give them out' are accepted responses.

Question 2(b)

The candidate was awarded **0 marks** because the response is not an accepted response.

Question 3(a)

The candidate was awarded **3 marks** because 'group of people', 'Someone keeps a record' and 'No idea is silly or bad' are accepted responses.

Question 3(b)

The candidate was awarded **1 mark** because 'Morphological analysis' is an accepted response.

Question 4(a)

The candidate was awarded **2 marks** because 'easily fix mistakes' and 'Easy to make a rough, quick sketch' are accepted responses.

Question 4(b)

The candidate was awarded **1 mark** because 'you can see the sizes' is an accepted response.

Question 4(c)

The candidate was awarded **3 marks** because 'see how it will look', 'see if there is any changes that need to be made' and 'make them to scale ... adjust the sizes on it' are accepted responses.

Question 5

The candidate was awarded **3 marks** because 'handle is big enough to fit any size of hand', 'button on the handle is close by meaning that you can press it while holding it' and 'button is not too hard to press down on' are accepted responses. The second and third bullet points were considered too vague and therefore no further marks were awarded.

Question 6(a)

The candidate was awarded **1 mark** because 'breaks on handles which will stop you from bumping into things' is an accepted response.

Question 6(b)

The candidate was awarded **3 marks** because 'The basket on the front allows you to take things with you', 'pedals on the bike is what helps the bike move at whatever speed you want' and 'wheels are round which helps the bike move without getting stuck on things' are accepted responses.

Question 7(a)

The candidate was awarded **3 marks** because 'Clock A and C both have numbers on the clock whereas Clock B has roman numerals' (style), 'Clock B is a very old looking whereas the other ones are more modern (fashion) and 'Clock C is square whereas Clock A is round' (shape) are accepted responses.

Question 7(b)

The candidate was awarded **2 marks** because 'people are more likely to buy' and 'place the price higher' are accepted responses.

Section 2

The candidate received **10/20 marks** for this section.

Question 8(a)(i)

The candidate was awarded **0 marks** because 'Mild steel' is not an accepted response.

Question 8(a)(ii)

The candidate was awarded **1 mark** because 'strong' is an accepted response.

Question 8(b)(i)

The candidate was awarded **0 marks** because 'Urea formaldehyde' is not an accepted response.

Question 8(b)(ii)

The candidate was awarded **0 marks** because it is not an accepted response in the context of this question (even a hot water tap would not cause thermoplastics to soften).

Question 8(c)

The candidate was awarded **0 marks** because it is not an accepted response.

Question 8(d)

The candidate was awarded **2 marks** because 'has a good finish' and 'very accurate' are accepted responses. As this is an 'outline' question it is possible to read past the first two bullet points from the candidate and award marks only to bullet points three and four.

Question 8(e)

The candidate was awarded **0 marks** because it is not an accepted response.

Question 9(a)

The candidate was awarded **3 marks** because 'highly accurate', 'Less room for human error' and 'products will turn out exactly the same' are not accepted responses.

Question 9(b)

The candidate was awarded **1 mark** because 'Some products do not need to be made many times ... only need a few' is an accepted response.

Question 10

The candidate was awarded **2 marks** because 'You can use them on different products' and 'skip a stage in the production process' are accepted responses.

Question 11

The candidate was awarded **1 mark** because 'Try to fix products once they are broken' is an accepted response.

Total marks awarded – 51/80

Candidate 7

Section 1

The candidate achieved **24/60 marks** for this section.

Question 1(a)(i)

The candidate was awarded **1 mark** because 'White Pine' is an accepted response.

Question 1 (a)(ii)

The candidate was awarded **0 marks** because the response is not accepted.

Question 1 (a)(iii)

The candidate was awarded **0 marks** because the response is not accepted.

Question 1(b)(i)

The candidate was awarded **2 marks** because 'tenon saw to cut down' and 'excess wood should then be chizled' are accepted responses.

Question 1(b)(ii)

The candidate was awarded **1 mark** because 'Finger Joints' is an accepted response.

Question 1(b)(iii)

The candidate was awarded **2 marks** because 'using a try square' and 'lining the corner up with the side of a flat desk' are accepted responses.

Question 1(b)(iv)

The candidate was awarded **1 mark** because 'PVA Glue' is an accepted response.

Question 1(b)(v)

The candidate was awarded **1 mark** because 'Making sure any chips in the wood were removed' is an accepted response. 'Making sure the wood ... does not have bumps' and 'Make sure all gaps are filled' do not gain any further marks as they fall within the same bullet point in the marking instructions (remove imperfections, for example, bumps/chips/gaps) as the candidate's first sentence.

Question 1(c)(i)

The candidate was awarded **0 marks** because the response is not an accepted response.

Question 1(c)(ii)

The candidate was awarded **0 marks** because the response not an accepted response.

Question 1(c)(iii)

The candidate was awarded **1 mark** because 'Hack Saw' is an accepted response.

Question 1(d)(i)

The candidate was awarded **0 marks** because the response not an accepted response.

Question 1(d)(ii)

The candidate was awarded **0 marks** because the response is not an accepted response.

Question 1(d)(iii)

The candidate was awarded **0 marks** because the response is not an accepted response.

Question 1(d)(iv)

The candidate was awarded **0 marks** because the response is not an accepted response.

Question 1(e)(i)

The candidate was awarded **1 mark** because 'have it sat on a flat stable surface' is an accepted response.

Question 1(e)(ii)

The candidate was awarded **1 mark** because 'bend the plastic over something that has a right angled edge' is an accepted response.

Question 1(e)(iii)

The candidate was awarded **1 mark** because 'could lead to the plastic cracking' is an accepted response.

Question 2(a)

The candidate was awarded **1 mark** because 'gather information of clients to allow the product to be improved' is an accepted response. The rest of the candidate's explanation was considered too vague to gain any further marks.

Question 2(b)

The candidate was awarded **1 mark** because 'key things the product has to do' is an accepted response.

Question 3(a)

The candidate was awarded **2 marks** because 'in a group' and 'all ideas are considered' are accepted responses.

Question 3(b)

The candidate was awarded **1 mark** because 'Lateral thinking' is an accepted response.

Question 4(a)

The candidate was awarded **1 mark** because 'what the product will look like' is an accepted response.

Question 4(b)

The candidate was awarded **0 marks** the response is not an accepted response.

Question 4(c)

The candidate was awarded **2 marks** because 'see what the final manufactured model/product will look like' and 'how the product will work' are accepted responses. The last sentence from the candidate referring to 'comparison' did not gain a mark as no reference to what could be compared was made.

Question 5

The candidate was awarded **1 mark** because 'handle will provide an easy way for the kettle to be moved' is an accepted response.

Question 6(a)

The candidate was awarded **1 mark** because 'breaks would NEED to be working at all times to allow the customer to slow down' is an accepted response.

Question 6(b)

The candidate was awarded **0 marks** because the response is not an accepted response. 'That the wheels are able to work with the use of the chain' was considered too vague.

Question 7(a)

The candidate was awarded **0 marks** because they have not compared the aesthetic aspects of the clocks.

Question 7(b)

The candidate was awarded **2 marks** because 'provide the product a better chance of getting bought' and 'persuade customers to buy the product again' are accepted responses.

Section 2

The candidate received **5/20 marks** for this section.

Question 8(a)(i)

The candidate was awarded **0 marks** because the response is not an accepted response.

Question 8(a)(ii)

The candidate was awarded **0 marks** because the response is not an accepted response.

Question 8(b)(i)

The candidate was awarded **0 marks** because the response is not an accepted response.

Question 8(b)(ii)

The candidate was awarded **1 mark** because 'Provides a stronger foundation' is an accepted response.

Question 8(c)

The candidate was awarded **0 marks** because the response is not an accepted response.

Question 8(d)

The candidate was awarded **0 marks** because the response is not an accepted response.

Question 8(e)

The candidate was awarded **0 marks** because the response is not an accepted response.

Question 9(a)

The candidate was awarded **2 marks** because 'take less time to manufacture than it would be hand made' and 'provides a way the manufacturer is using less material which allows them to save more money' (reduces waste) are accepted responses.

Question 9(b)

The candidate was awarded **0 marks** because the response is not an accepted response.

Question 10

The candidate was awarded **0 marks** because the response is not an accepted response. The candidate is too vague and references unqualified cheap and easy.

Question 11

The candidate was awarded **2 marks** because 'make the quality of the material a lot better' and 'could also put a warranty on all products bought, which would allow the manufacturer to fix the product' are accepted responses.

Total marks awarded – 29/80

Candidate 8

Section 1

The candidate achieved **53/60 marks** for this section.

Question 1(a)(i)

The candidate was awarded **1 mark** because 'Red Pine' is an accepted response.

Question 1(a)(ii)

The candidate was awarded **1 mark** because 'forstner bit' is an accepted response.

Question 1(a)(iii)

The candidate was awarded **1 mark** because 'wooden plane' is an accepted response.

Question 1(b)(i)

The candidate was awarded **4 marks** for the graphic demonstrating the use of the try square, and because 'use a marking guage and set it to half the depth', 'use a tenon saw and saw down to the middle of the wood' and 'chisel the joint out' are accepted responses.

Question 1(b)(ii)

The candidate was awarded **1 mark** because 'finger joint' is an accepted response.

Question 1(b)(iii)

The candidate was awarded **1 mark** because 'use a tri-square to check if all corners are at 90° angles' is an accepted response.

Question 1(b)(iv)

The candidate was awarded **1 mark** because 'wood glue' is an accepted response.

Question 1(b)(v)

The candidate was awarded **3 marks** because 'sand down surfaces to get rid of any pen/pencil marks', 'wipe down surfaces to remove dust' and 'raise the grain' are accepted responses.

Question 1(c)(i)

The candidate was awarded **2 marks** because 'comes in large sheets' and 'contrasts the wood' are accepted responses.

Question 1(c)(ii)

The candidate was awarded **1 mark** because 'use an engineers square to draw on the lines and ensure they are straight' is an accepted response. No mark was awarded here for use of 'rule' as it is not used to 'mark'.

Question 1(c)(iii)

The candidate was awarded **1 mark** because 'coping saw' is an accepted response.

Question 1(d)(i)

The candidate was awarded **1 mark** because 'the metal is in securely' is an accepted response.

Question 1(d)(ii)

The candidate was awarded **2 marks** because 'parallel turning' and 'facing off' are accepted responses.

Question 1(d)(iii)

The candidate was awarded **2 marks** because 'make sure the die is secure in the die stock' and 'die has sharp edges to cut' are accepted responses.

Question 1(d)(iv)

The candidate was awarded **1 mark** because 'epoxy resin' is an accepted response.

Question 1(e)(i)

The candidate was awarded **1 mark** because 'clamp the plastic down before drilling' is an accepted response.

Question 1(e)(ii)

The candidate was awarded **2 marks** because 'use a strip heater to heat up area' and 'put the plastic around a former' are accepted responses.

Question 1(e)(iii)

The candidate was awarded **1 mark** because 'easier to clamp down to the drill' is an accepted response.

Question 2(a)

The candidate was awarded **3 marks** because 'can ask specific questions', 'results are easily gathered' and 'put into charts' are accepted responses.

Question 2(b)

The candidate was awarded **1 mark** because 'it can be used as an ongoing evaluation tool' is an accepted response.

Question 3(a)

The candidate was awarded **3 marks** because 'group of people', 'any idea that comes into their head' and 'you can narrow down your choices' are accepted responses.

Question 3(b)

The candidate was awarded **1 mark** because 'SCAMPER' is an accepted response.

Question 4(a)

The candidate was awarded **2 marks** because 'rough idea of the design they were envisioning' and 'a quick process to do' (in the context of this question an unqualified 'quick' is accepted) are accepted responses.

Question 4(b)

The candidate was awarded **2 marks** because 'the drawings can show how the parts are going to join up' and 'drawings show the sizes' are accepted responses.

Question 4(c)

The candidate was awarded **3 marks** because 'see what your model looks like dismantled', 'compare sizes and check proportions' and 'look at your design from different angles and in 3D' are accepted responses.

Question 5

The candidate was awarded **4 marks** because 'red button is easy to push down', 'handle length is suited to fit the average adult's hand', 'kettle is lightweight so it can be easily lifted by an adult' and 'button to open the kettle can be easily pressed' are accepted responses.

Question 6(a)

The candidate was awarded **2 marks** because 'chain is guarded so you don't hit it while pedalling' and 'reflective lights on it so you can ride safely in the dark' are accepted responses.

Question 6(b)

The candidate was awarded **3 marks** because 'the pedals are easy to reach from where you're sitting', 'you don't need a lot of strength to start pedalling' and 'handle bars are within arm's reach' are accepted responses.

Question 7(a)

The candidate was awarded **0 marks** because the response does not compare three different aesthetic aspects – the response is too vague.

Question 7(b)

The candidate was awarded **2 marks** because 'loyal customers' and 'good reputation' are accepted responses.

Section 2

The candidate received **15/20 marks** for this section.

Question 8(a)(i)

The candidate was awarded **1 mark** because 'copper' is an accepted response.

Question 8(a)(ii)

The candidate was awarded **1 mark** because 'corrosion resistant' is an accepted response.

Question 8(b)(i)

The candidate was awarded **0 marks** because 'Urea formaldehyde' is not an accepted response.

Question 8(b)(ii)

The candidate was awarded **0 marks** because 'no temperature/heat will affect it's performance' is not an accepted response in the context of this question.

Question 8(c)

The candidate was awarded **2 marks** because 'split lines' and 'injection marks' are accepted responses.

Question 8(d)

The candidate was awarded **2 marks** because 'all products would be identical' and 'machines can work 24/7' are accepted responses.

Question 8(e)

The candidate was awarded **2 marks** because 'rotational moulding' and 'creates a hollow product' are accepted responses.

Question 9(a)

The candidate was awarded **2 marks** because 'machine can work 24/7' and 'all products will be the same' are accepted responses.

Question 9(b)

The candidate was awarded **1 mark** because 'some sets are personalised and are one-offs' is an accepted response.

Question 10

The candidate was awarded **3 marks** because 'can buy them in bulk', 'all of them are the same' and 'saves time rather than making them all' are accepted responses.

Question 11

The candidate was awarded **1 mark** because 'make products designed to dismantle so that one part can be changed' is an accepted response.

Total marks awarded – 68/80