Examination Report
Design and Technology
537

JC

2025

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Paper 537/01

General Comments

In 2025 there were one thousand five hundred and fifty-five (1555) candidates who sat for the Design and Technology Paper 1, this indicates a slight increase from the number of candidates who sat for this paper in 2024. The level of performance was slightly lower compared to 2024. Candidates were required to answer all questions in Section B. It was observed even this year that candidates were able to finish the paper on time. In general candidates performed much better in Section A than in Section B, and as it has always been the case in the previous years' most candidates performed better in B3 than in B1 and B2.

Section A

This section consisted of sixteen questions (16) worth 40 marks. These were questions that required short answers. The questions were from the different components of the syllabus: Resistant Materials (RM), Graphics (GP) and Systems and Control (SC). This section was assessing the following objectives; knowledge and understanding, problem solving, communication and realization.

Comments on Specific Questions

Question 1

For this question candidates were given a holding device used in the school workshop. Candidates were required to name the holding device.

The expected response was **bench hook.** Only a fair number of candidates were able to give the expected response; others were giving different responses such as working bench, clamp, bench grip, bench vice, unfortunately this could not be awarded with a mark.

Question 2

Candidates were given two drawings of an adjustable pulpit design.

Candidates were asked to name the drawing for B when A is an assemble drawing.

The expected response was **exploded**. A few number of candidatures were able to give the expected response to the question. A significant number of the candidature were giving responses such as isometric, orthographic, disassemble and these were not accepted by the examiners.

Question 3

For this question candidates were given an image of a plastic T- square.

(a) They were to name the one type of plastic that is suitable for making the T- square.

The expected response was **acrylic plastic.** A fair number of candidates was able to give the expected response. There were some candidates who gave responses such as ABS, thermoplastic, polyester resin, PVC and these responses could not be awarded the mark.

(b) Candidates were to state one adhesive that could be used to join the two parts.

The expected response was **tensol cement.** It was a small fraction of the candidature that was able to come up with the correct response. Others were giving responses such as PVC glue, screws, and glue gun, bolt and nut etc. Regrettably these responses were not awarded with a mark.

Question 4

Candidates were asked to give a member of a structure that resist bending.

The expected response was **beam**. A majority of candidates were able to give the correct response. Other candidates came up with responses such as strut, tie, and frame structure. However, these responses were not accepted.

Question 5

Candidates were asked to state two safety precautions that would be followed when painting in the workshop.

The expected responses were to **wear a dust mask or face mask and work in a well-ventilated areas.** This question proved to be a challenge to most of the candidates. Very few were able to attain full marks. Most candidates that attempted this question were giving different responses such as wear safety clothing, wash brushes, wear goggles etc.

Question 6

Candidates were to fill the table by naming the two boring tools and state their uses.

The responses were **countersunk bit** used for **drilling holes for countersink screws** and **flat bit** for **boring holes on wood and plastic**. This question was poorly done; a majority of the candidates were not able to give expected response. Many candidates were giving deviating answers for bit one (1), drill bit for drilling holes and bit two (2) center bit or auger bit for boring metals, marking holes and many more that were not awarded the allocated four (4) marks.

Question 7

Candidates were to complete the 3rd angle orthographic projection symbol shown.

The expected response was to **draw center lines, draw projection lines from the given symbol and two concentric circles.** Very few candidates were able to give the expected response. A lot of candidates were drawing one circle, no projection lines or center lines unfortunately such responses could not attain the full marks allocated to this question.

Question 8

For this question candidates were given an image of a water tap made of brass.

Candidates were required to give one advantage of brass which makes it more suitable for the tap than mild steel.

The expected responses were **corrosion resistant and can be cast**. The question was well done as a majority of candidates were able to give the expected response and earning the allocated one (1) mark. Very few were giving deviating responses such as ferrous metal, durable and strong, and these were not accepted.

Question 9

Candidates were given an image of a piece of wood being prepared for use.

(a) Candidate were asked to name the plane used for preparing wood.

The expected response was **smoothing plane.** A fair number of candidates were able to give the correct response. There were those however, that gave responses such as jack plane, wood plane, hand plane and flat plane, unfortunately these could not attain the mark set aside for this question.

(b) Candidate were expected to give one specific use of the plane.

The expected response was **removing dirt and pencil marks from the work piece before assemble.** It was a small fraction of the candidature that was able to come up with the correct response. Others were giving responses such as to make wood level, removing waste, shaping the wood surface, etc. Regrettably these responses were not awarded with a mark.

Question 10

Candidates were given an image of a sectional view of two blocks of wood that will be joined by a screw.

(a) Candidates were expected to name the type of screw used to join wooden block.

The expected response was **countersunk head screw.** This question was well done; a majority of candidates were able to give the correct and expected response. There were very few that gave dissenting responses such as flat screw, round head screw, and these were not accepted.

(b) Candidates were expected to give one advantage of using screw over nails in joining wood.

The expected response was **stronger grip.** This question proved to be a challenged, as many candidates could not manage to come up with the expected response and this resulted in the loss of the one mark. Common errors were screws have threads, it cannot be pulled out, does not damage the wood, etc.

(c) Candidate were expected to add hatching to the blocks to show that they are sectioned.

The expected responses were **to draw hatching lines at 45 degrees, at different direction on joined pieces, not hatching the holes, and equidistant between hatching lines**. There were few numbers of candidates who were able to give the expected response. A majority of candidates gave responses such as hatching everything, hatching lines not drawn at 45^0. However, these responses were not accepted.

Question 11

For this question candidates were given two pieces of wood that will be joined together using dowel joint.

Candidates were to show one dowel on piece A and one on piece B.

The expected responses were to **draw a dowel on piece A and a hole similar diameter with the dowel on piece B and properly aligned.** Only a small number of candidates were able to give the correct response. A majority of other candidates drew the dowel on piece B and hole on piece A, and others simple left the question without an attempt.

Question 12

Candidates were given a sketch of vacuum former ready for use.

(a) They were required to give advantage of using vacuum forming over press forming.

The expected responses were **quicker, greater level of details and texture, accurate and precise.** This question proved to be a challenge to many candidates as they failed to give the expected response. Some candidate gave responses such as close the former, light in weight, it is easy to operate, and unfortunately such responses could not attain the one (1) allocated to this question.

(b) Candidates were to state two stages in the process of vacuum forming after placing the mould and placing the mould and clamping the thermoplastic in the toggle clamp.

The expected response were **heat the plastic using the vacuum former heater, check if it is soft and raise the pattern and vacuum form, remove the molded plastic and trim the waste.** A very small fraction of the candidates was able to come up with the expected response. So many of the candidates gave stray answers such as close the vacuum former, press the handle and wait, increase the heat and cool the plastic, and these were not rewarded with the allocated two(2) marks.

Question 13

(a) For this question candidates were required to complete the table by naming the metal and classification that matches it.

The expected response was copper **non- ferrous metal and mild steel** a ferrous metal**.** The performance by candidates in this question was excellent a majority of candidates were able to give the expected response. Very few gave different responses from what was expected, responses such as ferrous metal for copper and steel or iron for ferrous metal etc. These were not awarded marks.

Question 14

Candidates were given an image of a belt and pulley mechanism.

(a) Candidates were asked to give one disadvantages of belt and pulley over gears.

The expected responses were **easily slip out, wear out easily**. The question was well done as a majority of candidates were able to give the expected response and earning the allocated one (1) mark. Very few were giving deviating responses such as it breaks, difficult to stop, cannot adjust the belt etc., and these were not accepted.

(b) Candidates were required to draw using free- hand add the belt to the diagram to make the pulley move opposite direction to the other.

The expected responses were **belt crossing or twisted belt**. Many candidates were able to give the expected response. A few number of candidates gave responses such as the same belt given on the image and these were not awarded full marks.

Question 15

Candidates were required to give two advantages of using seasoned timber over green timber.

The expected responses were **stronger, lighter, eliminates wood not prevent changes in the dimensions of the article made of timber**. This question was fairly done, almost half of the candidates were able to come up with expected responses. There were those however, who came

up with responses such as it dry quickly, does not cup or bend, it look beautiful. These responses were not accepted and this resulted in the loss of the two (2) mark allocated to this question.

Question 16

For this question candidates were required to give three steps of cutting out a through housing joint after marking it.

The expected responses were **secure work, cut out using tenon/ dovetail saw down to the finish line and remove the waste using firmer chisel and mallet then clean the bottom by paring to the finish line**. Only a minority of the total candidate were able to give the expected response. Other candidates gave dissenting responses such as drill holes, use a jig saw to cut the joint, use a file to clear the joint, and these responses were not awarded with any marks.

Section B

This section comprised of three (3) structured questions (B1, B2 and B3) based on Graphic Products, Resistant Materials and Systems and Control. Candidates had to answer all questions. Each question was worth twenty marks (20) making the total of this section to be sixty (60) marks.

B1 – Graphic Products

Question 1

Candidates were given a solid geometrical object.

(a) Candidates were required to state the correct name of projection used to draw the object.

The expected response was **oblique**. This question was well done; a very large number of candidates were able to come up with expected response. There were very few who deviated from the expected response. The common errors were isometric, perspective, and this was not awarded with the allocated one (1) mark.

(b) Candidates were to name the solid object.

The expected response was a **cube.** This question was fairly done, as reasonable number of candidates were able to give the expected response. Some candidates were giving responses such as box, square, unfortunately this response could not be rewarded.

Question 2

Candidates were given a triangle ABC.

(a) Candidates were required to use geometrical construction to complete the triangle given line A as a starting point.

The expected response was to **draw line AB 90mm long, construct angle 30^0 at A, construct a semi-circle, complete the triangle or construct angle 60^0 at B.** This question was fairly done as almost half of the candidates were able to come up the expected response. The other half gave dissenting responses such as oscillation motion, linear motion, and they were not accepted.

(b) Candidates were required to state the correct name of the triangle drawn in (a)

The expected response was **scalene or right angle triangle**. A majority of candidates were able to give the expected response, many were giving varying responses such as isosceles triangle, equilateral triangle, and these could not be awarded with the one (1) mark set aside for this question.

Question 3

For this question candidates were given an image of a chain and sprocket.

Candidates were to use geometrical construction to draw the bottom part of the chain only.

The expectation was that they would **bisect the distance between centers, draw a semi-circle, subtract radius of the small circle from the larger circle and then draw a circle inside the larger circle to cut the semi- circle, draw two normal, draw tangent**. This question was poorly done. Very few candidates were able to amass the maximum four (4) marks. Most of the candidates could only attain 1 mark. Common errors committed by candidates were; bisecting the line, secondly, most candidates could not and draw an arc to cut semi- circle and draw parallel lines.

Question 4

For this question candidates were given an image of pictorial hexagonal box made from light weight material.

The expectation was that candidates would draw the hexagonal plan given side 40mm correctly and project line to the front height 30mm. A majority of candidates seemed to encounter challenges when attempting this question as many managed to attain 1 mark from the evident of the front elevation.

Question 5

Candidates were given an image of a crack mechanism and a line diagram of the mechanism.

Candidates were required to plot the locus of point 'P' as the crank OA complete one revolution as point B slides on the horizontal centre line.

Candidates were expected to **divide circle into twelve equal parts plot the movement of the linkage as the crank rotates, accurately draw locus of point P**. This question seemed to be a great challenge to a lot of candidates following that very few candidates were able to plot the locus. There were many far-off responses, responses such as drawing locus without plotting the points, and was not awarded the full marks.

B2 – Resistant Materials

Question 1

(a) For this question candidates were given a commonly used tool.
Candidates were required to label part A of the tool.

The expected response was **blade.** This question was well done; a very large number of candidates were able to come up with expected response. There were very few who deviated from the expected response. The common error was steel ruler, and this was not awarded with the allocated one (1) mark.

(b) Candidates were required to name the tool.

The expected response was **engineer's try square**. This question proved to be a challenge to most candidates, this follows that there were very few candidates who came up with the

expected response. Others came up with responses such as try square, set square, and were not accepted as a true response to the question.

Question 2

For this question candidates were given an image showing a student using a machine in a school workshop.

Candidates were asked to name the machine.

The expected response was **pillar drill**. This question was well done; a majority of the candidates were able to give correct response. There were those few who gave deviating responses such as drill, electric drill, and these could not attain the mark.

Question 3

Candidates were given an image of a cutting tool.

Candidates were to state the function of the cutting tool.

The expectation was that the tool is used for **cutting external threads**. A fair number of candidates were able to give the expected response. There were some candidates who gave differing responses such as making internal threads, drilling holes for screws and these were not awarded with marks.

Question 4

For this question candidates were given an image of a tool used to mark the centre of a hole on a 3mm thick mild steel.

Candidates were required to name the tool.

The expected response was **centre punch**. The general performance of candidates was fair on this particular question. Some candidates though came up with deviating responses such as sash cramps, G cramps which were not accepted

Question 5

For this question candidates were given a sketch of a marking gauge.

(a) Candidates were required to add a steel on the marking gauge to show how the gauge would set to the required distance.

The expected answer was to **sketch a steel rule touching the stock and sharp point of the spur**. This question was fairly done, as reasonable amount of candidates were able to give the expected response. There few candidates who sketch a steel above the marking gauge not touching the stock, and unfortunately these responses could not be rewarded the full marks.

(b) Candidates were to give one practical example where the gauge could be used.

The expectation was that candidates would demonstrate the working knowledge of **marking the depth of a housing joint**. A majority of candidates were not able give an example where a marking gauge could be used. The deviating responses were marking out wood, marking parallel lines, etc, which were unfortunately not accepted.

Question 6

For this question candidates were given an image of a work piece held on a workbench when cutting a lap joint.

Candidates were required to give two reasons of using the scrap piece of wood.

The expected response **to protect the work piece from G- cramp marks and to guide the saw for straight cut**. This question was fairly done, almost half of the candidates were able to come up with expected response. There were those however, who came up with responses such as make it easy to hold work, support G- cramp, to be stable and these could not attain the mark,

Question 7

Candidates were asked to describe how mild steel is annealed.

The expectation was that candidates would demonstrate the working knowledge of annealing mild steel, **heat metal to red heat and soak it shortly the cool slowly**. A majority of candidates were not able explain the annealing. The deviating responses were heat the metal until it melt reformed, heat it and hammer, heat ad quench in cold water or oil, etc. which were unfortunately not accepted.

Question 8

For this question candidates were given an image of a spice rack made from acrylic.

(a) Candidate were asked to give one reason why acrylic sheet is covered with plastic when purchased.

The expected response was **protect from scratches**. A good number of candidates were able to give this response. Other candidates were giving many different responses which were not required for this question, responses such as it makes it beautiful, to be transparent so that it can be seen, it is safe, and these could not be awarded with 1 marks allocated for this question.

(b) Candidates were required to explain why a scriber is not recommended to mark the two bends on the rack.

The expected response was **scriber makes permanent marks/ scriber**. A larger fraction of the total candidature was able to give the expected response to this question. Only a few number of candidates gave dissenting responses such as used for cutting, mark clear lines etc., and these were not awarded with the mark designated for this question.

(c) Candidates were required give one reason why the acrylic is softened before bending to shape.

The expected response was **easy bending/ to avoid breaking the plastic**.
A majority of candidates were able to give the expected the response and were awarded the mandatory 1 mark. There were some that gave responses such as reform the shape, etc., however, these responses were not awarded any mark.

(d) For this question candidates were asked to explain how cracking can be prevented when drilling one hole of the spice rack.

The expected response was **cover with masking tape/ gently feed/ use gradual sizes of bits- small to required size.** It was a small fraction of the candidature that was able to come up with the correct response. Others were giving responses such as holding the work, etc. Regrettably these responses were not awarded with a mark.

(e) Candidates were required to describe process of finishing a rough sawn acrylic spice rack edges.

The expected response was **file the work, apply abrasive paper and then buffing/ polish**. This question proved to be a challenge following that very few candidates were able to produce the expected responses. Many candidates were giving other responses such as removing the cover, heat it, apply varnish, painting, lamination, etc., which were not accepted leading to loss of marks.

B3 – Systems and Control

Question 1

(a) Candidates were to define a structure.

The expected response was **a device that changes input motion to a desired output motion.** A slightly less than half of the total candidature was able to come up with the correct response. There were some, however, who gave deviating responses such as something natural or man-made, anything that hold its shape, and unfortunately these responses were not accepted resulting in the loss of the one (1) mark allocated to the question.

(b) Candidates were asked to describe a strut.

The expected response was **member of a structure that resist compression.** This question was fairly done, as reasonable amount of candidates were able to give the expected response. Some candidates were citing that it support and reduce tension, structure that hold the mechanism, a member that prevent bending, etc., and unfortunately these responses could not be rewarded

Question 2

Candidates were asked to list one gear that convert rotary motion into a linear motion.

The expected response was **rack and pinion.** There were fewer candidates who were able to give the expected response, other candidates gave deviating responses such as linear motion, bevel gear, spur gear, and were not awarded with the mark.

Candidates were asked to list one gear that is conically shaped.

The expected response was **rack and pinion.** Very few candidates were able to give the expected response. A lot of candidates were giving different responses such as worm gear, rack and pinion, idler gear, spur gear, unfortunately such responses could not attain the one (1) allocated to this question

Question 3

Candidates were given a visual showing an incomplete model of an engine crank system.

(a) Candidates were asked to state the type of movement made by the valves in the model.

The expected response was **reciprocating.** This question was well answered as a majority of the candidates were able to give a positive response. There were fewer candidates who gave dissenting responses such as oscillation, rotary motion, and this response could not be rewarded.

(b) Candidates were asked to name the type of mechanism which moves the valve.

The expected response was **cams.** This question was fairly done as almost half of the candidates were able to come up the expected response. The other half of the total candidature gave dissenting responses such as belt and pulley, engine, gears and they were not accepted.

(c) For this question candidates were required to explain why the belt used in the mechanism is toothed.

The expected response were **to give a better grip.** There were few numbers of candidates who were able to give the expected response. A majority of candidates gave responses such as it is fast, can drive a machine and unfortunately this could not be awarded with the mark**.**

Question 4

For this question candidates were given visual of a hand vice which used a lever mechanism to perform its function.

(a) This question required candidates to label the effort, fulcrum, and load.

The expected response was to correctly label the vice **opening a load, middle an effort spring a fulcrum.** Quite a majority of the candidature was able to come up with expected responses, in essence this question was well done. There were some, however, who wrongly label the vice, and unfortunately these responses were not accepted resulting in the loss of the marks allocated to the question.

(b) Candidates were asked to explain what will happen if the spring is removed from the device.

The expected response was **jaws cannot automatically open when the screw is released.** This question was poorly done as it was only a minority that was able to give the expected response. The majority of the candidates gave dissenting responses such as no work done, will not function, etc., others simply left the question unanswered resulting in losing the one mark set apart for this question.

(c) Candidates were required to state the class of levers for the hand vice.

The expected response was **third class.** This question was well done, it was an overwhelming majority that was able to give the expected response. There were very few candidates that deviated from expected response and those were giving responses such as car first class, second class, and obviously lost the mark.

Question 5

Candidates were given visual of a mechanism used in some systems.

(a) Candidates were required to show the direction of the output if the input in the direction of arrow A and point B is the pivot.

The expected response was **opposite to the input force**. This question was fairly done, as reasonable number of candidates were able to give the expected response. Some

candidates were showing the same direction, unfortunately this response could not be rewarded.

(b) Candidates were required to name the mechanism.

The expected response was **linkage**. A significant number of candidates were able to give the expected response. Other candidates gave responses such as cams and followers, reciprocating mechanism, and was not awarded a mark.

(c) Candidates were asked to give two reasons why this type of mechanism is important in system.

The expected response was **to connect different levers in mechanisms, transform input force and movement into a desired output force and movement.** The performance of candidates in this question was very poor, very few candidates were able to give two reasons why this type mechanism is important. Other responses that were given by the candidates were produce opposite motion, it makes a back and forward movement, it moves in the same direction, etc., unfortunately these could not be awarded with the two (2) marks reserved for this question.

Question 6

For this question candidates were given a visual of a gate fixed to a wall.

(a) Candidates required to identify and state the problem on this gate.

The expected response was **it has collapsed/ structure is not rigid**. There were fewer candidates that were able to give the expected. The majority of candidates were giving many different responses such as weak joint, not supported, no mechanism gate is losing shape because it is heavy, etc., and these were not accepted by the examiners.

(b) Candidates were asked to add sketches and notes to show how the problem identified could be prevented.

The expected response was **to add a member to strengthen the structure (triangulation technique) and notes**. A significant number of candidates were able to give the expected response. There were candidate who gave differing responses such as wheels and hinges, locking device was added, and any others which were however not awarded with the two (2) marks allocated to this question.

Paper 537/02

COURSEWORK

Eighty-four (84) centres registered candidates for the coursework. Of the centres, one thousand five hundred and eighty (1580) candidates were registered but one thousand five hundred and thirty-nine (1539) submitted work for this year's examination. Forty-one (41) candidates did not submit their coursework. The number of candidates who submitted their work indicates an increase when compared to the year 2024 where one thousand three hundred and fifty-four (1354) submitted their work.

The coursework for the Junior Certificate is a school-based component of the syllabus that is compulsory to all candidates registered for Design and Technology. Each candidate undertook a personally identified project centred on the chosen prescribed theme **(CLEANING)**. The coursework was expected to be worked over the final two terms of the year. Candidates' folders were then presented for marking.

GENERAL COMMENT ON OVERALL PERFORMANCE

This year, the Junior Secondary Design and Technology project has seen a slight shift in approach, with a few candidates opting to produce graphics products. Hopefully this marks a departure from the traditional focus on resistant materials products. It is hoped that there will be a growing interest in the graphics products in the near future.

COMMENTS ON INDIVIDUAL ASSESSMENT OBJECTIVES

Theme analysis: The theme for this year was 'CLEANING'

- Definition – this part of objective was well done by most candidates. Most candidates defined the theme by providing more than one definition which is highly commendable.
- Bubble chat – in this part of the objective candidates were expected to place the theme in the centre and link it to the general areas around. The general areas were to be linked to specific areas. Most candidates did well in this part. A few experienced challenges, particularly in identifying specific areas of interest as a result lost some marks.
- Area of interest – most candidates indicated the area of interest. A few candidates struggled to specify the area of interest, which resulted in loss of marks.

Identification of the need

- Situation – most candidates performed well in this part of the objective. However, some deviated from the given theme, resulting in a loss of marks.
- Problem – most candidates performed well in this part of the objective. However, candidates that did not outline a clear problem lost marks in this part.
- Design Brief – most candidates produced a clear statement of intent which is highly commendable. A number of candidates also lost marks in the design brief, as they merely stated what was to be made rather than presenting a proper situation.

Research into design brief resulting in specifications

- Existing ideas - The majority of candidates carried out research effectively. Candidates should note that research should cover a wide range of existing ideas; ideas must not be of single concept and also include relevant identified and collected data. However, it is no use pasting in pictures without making meaningful evaluation of the existing ideas (stating two advantages and two disadvantages).
- Conclusion - Most candidates' conclusion on existing ideas lacked meaning. They did not draw their conclusion in relation to the design brief. Some were choosing best ideas instead of concluding on the existing ideas.
- Design Specifications - It was good to note that most candidates included the design specifications in their research, some specifications lacked clarity and precision. Design specifications has many sub-topics; however, function is the most important. It is highly recommended that the function should not be left out when providing specifications.

Generation of ideas

- Ideation - Several centres presented excellent sketches, showing a wide range of ideas with clear annotations. Some candidates displayed good graphic skill. In contrast, some candidates produced poor-quality sketches, and a few relied heavily on existing ideas rather than generating original concepts. Candidates should be discouraged from focusing on a single concept and producing ideas similar to the existing products. Candidates are advised to indicate their chosen idea and justify their choice. Candidates used common methods of drawing techniques, including two-dimensional and pictorials, effectively. Colouring and shading help improve the quality of presentation. Candidates who did not annotate and show constructional details in this part lost marks.

- Selection matrix - Marks were also lost in the evaluation stage, as many candidates did not evaluate each idea in the table provided. In this space, most candidates repeated the specifications instead of commenting on how each idea performs against each specification. Candidates are also advised to produce a key for the evaluation matrix.
- Chosen idea – most candidates were able to state the chosen idea which was good. However, most candidates were not able to justify using the specifications, as a result lost some marks.

Development of proposed solution

This objective continued to present a challenge for the majority of candidates. Many candidates produced exploded views and constructional details rather than drawings that clearly illustrated suggested modifications to improve the chosen idea and provided justification for those changes. The production of mock-ups was widely attempted and is highly commendable. Candidates were expected to present a fully rendered drawing of the final idea, incorporating all justified changes. However, this requirement was frequently omitted, resulting in the loss of marks. Only a small number of candidates demonstrated reasoned decision-making in relation to form, choice of materials, and construction methods

Planning for production

Few candidates carried forward the development changes into their working drawings. Several working drawings lacked clarity: scales were not indicated, and dimensions were inconsistent or did not correlate. The second part of this section was generally well attempted. Candidates demonstrated awareness of manufacturing processes, identified tools to be used, and provided estimated times for production.

Product realisation

The level of performance in general was quite good for this objective which is highly commendable. Candidates should be encouraged to produce artefacts of good standard and quality.

Testing and evaluation

- Evaluation of completed products was generally carried out satisfactorily across most centres. However, the quality of reporting was weak. Candidates were expected to evaluate their products against the specifications. A considerable number lost marks because they simply restated their design specifications rather than critically assessing performance.
- The objective relating to product testing was not well addressed. In many cases, testing was superficial and did not take into account the intended environment of use.
- Centres are encouraged to promote the use of annotated photographs as evidence of testing, as this provides clarity and supports candidates' evaluations.
- In addition, candidates were required to suggest future modifications and provide justification. This aspect was generally well executed, and the thoughtful responses in this area are highly commendable.





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