



National  
Qualifications  
2026

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# **2026 Graphic Communication**

## **Advanced Higher**

### **Question Paper Finalised Marking Instructions**

These marking instructions have been prepared by examination teams for use by Qualifications Scotland appointed markers when marking external course assessments.

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## General marking principles for Advanced Higher Graphic Communication

*Always apply these general principles. Use them in conjunction with the specific marking instructions, which identify the key features required in candidates' responses.*

- (a) Always use positive marking. This means candidates accumulate marks for the demonstration of relevant skills, knowledge and understanding; marks are not deducted for errors or omissions.
- (b) If a candidate response does not seem to be covered by either the principles or detailed marking instructions, and you are uncertain how to assess it, you must seek guidance from your team leader.
- (c) For 'Describe' questions  
Candidates must provide a statement or structure of characteristics and/or features, not just an outline or a list. For example they can refer to a concept, experiment, situation or facts in the context of and appropriate to the question. The number of marks available for a question indicates the number of factual/appropriate points required.
- (d) For 'Explain' questions  
Candidates must relate cause and effect and/or define relationships. This must be in the context of the question, or a specific area within the question.
- (e) For 'Compare' questions  
Candidates must demonstrate knowledge and understanding of the similarities and/or differences between things, methods, or choices. This must be in the context of the question, or a specific area within the question.
- (f) Candidates can respond to any question using text, sketching, annotations or combinations of these. Award marks for the information conveyed. Do not award marks for the quality of sketching.

## Marking Instructions for each question

| Question |     |      | Expected response                                                                                                                                                                                                                                                                                                                                            | Max mark | Additional guidance                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|----------|-----|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.       | (a) |      | <ul style="list-style-type: none"> <li>allows a range of ideas to be created</li> <li>allows better discussion with the client to ensure the design meets their needs/specifications</li> <li>digital format/software makes editing easier</li> <li>allows for testing a range of colours/styles/fonts etc. to ensure the best design is achieved</li> </ul> | 2        | <p><b>Do Not Accept:</b><br/>Two responses for editing: eg, editing of colour, editing of layout would gain <b>1 mark</b>.</p> <p><b>Accept:</b><br/>Allows for comparison of initial ideas.</p> <p><b>Digital thumbnails</b></p> <ul style="list-style-type: none"> <li>can be more easily scaled/edited/changed into final version</li> <li>can be sent electronically to clients or design teams immediately for discussion and feedback</li> </ul> |
|          | (b) |      | <ul style="list-style-type: none"> <li>use an auto trace (or similar*) feature within the software to change the photograph to a line drawing</li> <li>use line/curve/spline/pen/shape tools to draw on top of the photograph to create the vector</li> <li>manually trace and then scan the line drawing/sketch as a vector for editing</li> </ul>          | 2        | * eg, power trace/image trace                                                                                                                                                                                                                                                                                                                                                                                                                          |
|          | (c) | (i)  | <p><b>Colour space</b></p> <ul style="list-style-type: none"> <li>explanation of CMYK for physical use (<b>1 mark</b>)</li> <li>explanation of RGB for electronic use (<b>1 mark</b>)</li> <li>explanation of Pantone colour matching to ensure consistency across both (<b>1 mark</b>)</li> </ul>                                                           | 2        |                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|          |     | (ii) | <p><b>Text to vector</b></p> <ul style="list-style-type: none"> <li>explanation of scale text to avoid distortion (<b>1 mark</b>)</li> <li>explanation of text transferability across different software (<b>1 mark</b>)</li> <li>minimal or no typeface/font specification required as text is now an image format (<b>1 mark</b>)</li> </ul>               | 2        | <p><b>Accept:</b><br/>Text can be scaled to different sizes, maintaining resolution. (<b>1 mark</b>)</p>                                                                                                                                                                                                                                                                                                                                               |

| Question |     |       | Expected response                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Max mark | Additional guidance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
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| 1.       | (c) | (iii) | <b>Resolution</b> <ul style="list-style-type: none"> <li>• explanation of DPI 300 or higher for physical use (1 mark)</li> <li>• explanation of PPI 72 or higher for electronic use (1 mark)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 2        | <b>Note:</b> must be an explanation/show cause and effect. <ul style="list-style-type: none"> <li>• (cause) having too low a resolution will (effect) affect image quality (1 mark)</li> <li>• having too high a resolution will slow down transfer/loading speeds (1 mark)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                       |
|          | (d) |       | <ul style="list-style-type: none"> <li>• ensures other companies cannot use the bonnie paws company name</li> <li>• protects the logo/design elements from being used by other companies for their own brands, such as colour schemes, image of the dog, etc</li> <li>• to ensure the company's brand reputation/image is protected</li> <li>• to avoid inferior products being produced using the company's branding</li> <li>• to ensure a permission/payment system is in place if another company wishes to use their images</li> </ul>                                                                                                                                                                                                                                                                                                                                     | 2        | <b>Accept:</b><br>To ensure the company is compensated if a logo is used (publicity or payment).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|          | (e) |       | <b>STAGE 1:</b> <ul style="list-style-type: none"> <li>• preparation of <b>CMYK printing plates</b> (rollers) with the image to be printed, in relief (the image stands out slightly from the printing plate (roller) on the surface (1 mark)</li> </ul> <b>STAGE 2:</b> <ul style="list-style-type: none"> <li>• <b>registration marks</b> used on the flyer to ensure the alignment of the page runs through the four different colour plates correctly (1 mark)</li> </ul> <b>STAGE 3:</b> <ul style="list-style-type: none"> <li>• the printing <b>plate is kept dampened</b>. Ink is applied to the plate but it is repelled from the dampened surfaces which are the non-image areas (1 mark)</li> </ul> <b>STAGE 4:</b> <ul style="list-style-type: none"> <li>• <b>crop marks</b> are applied to ensure the flyer is trimmed to size after printing (1 mark)</li> </ul> | 4        | <b>Note:</b> answers must relate to the four stages listed.<br><br><b>Note:</b> accept where stages are not in the correct order.<br><br><b>STAGE 2:</b> must develop the idea of aligning eg, print heads, different colour plates being aligned. Cannot just say, alignment.<br><br><b>STAGE 3:</b> accept the plate is kept wet or moist.<br><br><b>Note:</b> accept incorrect terminology with a correct description, ie,<br><br><b>STAGE 4:</b> <b>trim marks</b> are applied to ensure the flyer is trimmed to size after the printing.<br>Accept as an alternative to <b>any stage</b> - checking a test print for correct registration, colour calibration or densitometer readings. |

| Question |     |      | Expected response                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Max mark | Additional guidance                                                                                                                                                                                                                                                                                 |
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| 1.       | (f) | (i)  | <b>File Type: DXF</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 1        | 1 mark for DXF.<br><br><b>Accept:</b><br>SVG, EPS and AI.                                                                                                                                                                                                                                           |
|          |     | (ii) | <ul style="list-style-type: none"> <li>• DXF is a vector file format meaning the vinyl cutter can identify a suitable path for cutting</li> <li>• DXF contains CAD data that will be transferrable to CAM systems</li> <li>• DXF is a vector format that ensures the logo can be scaled and cut at any size</li> <li>• DXF allows for layers to be applied meaning different features can be cut for physical layering to create the design</li> </ul>                                                                                                                                                                                                                                            | 2        | 1 mark for each correct explanation.<br><br>SVG in addition to DXF advantages <ul style="list-style-type: none"> <li>• compatible with a wide range of design software.</li> </ul> <b>Accept:</b><br>SVG, EPS & AI with suitable explanation. <b>Note:</b> these files types do not support layers. |
|          | (g) |      | <ul style="list-style-type: none"> <li>• use substrates that are biodegradable as leaflets are likely to be disposed of quickly</li> <li>• ensure efficient printing systems are used to reduce energy use</li> <li>• only printing exact amounts to go for distribution to avoid waste if changes are required to the design at a later stage/event</li> <li>• ensure the bottle spray comes with minimal packaging</li> <li>• ensure the bottle comes with packaging that is biodegradable/ can be recycled</li> <li>• provide a refill service to avoid the item being put to waste</li> <li>• choose inks that are water or plant based/not oil based or contain harmful chemicals</li> </ul> | 2        | 1 mark for any suitable response related to the leaflet.<br><br>1 mark for any suitable response related to the spray.<br><br><b>Accept:</b><br>The layout of the prepress maximises the number of leaflets/spray vinyl's on a standard sheet.                                                      |

| Question |     |  | Expected response                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Max mark | Additional guidance                                                                                                                                                                                                                                                                               |
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| 2.       | (a) |  | <ul style="list-style-type: none"> <li>• can be used to determine the effective direction of airflow in the car</li> <li>• can ensure heaters/aircon heat/cool the car efficiently and provide hot/cool air for driver/passengers</li> <li>• can be used to test the range of motion for airflow to ensure all areas are reached</li> <li>• can be used to determine whether or not the fan is powerful enough to reach the back of the car</li> <li>• can be used to determine if additional fans need to be added to the rear of the car</li> <li>• can be used for safety to reduce condensation in the car which could block the driver's view</li> <li>• can be used to determine the position/number and shape of the air vents and flaps</li> </ul> | 3        | <p><b>Accept external airflow answers where candidate have referenced:</b></p> <ul style="list-style-type: none"> <li>• aerodynamics for speed</li> <li>• reducing drag for efficiency/movement.</li> </ul> <p><b>Accept:</b><br/>Size, position, and shape of vents could be <b>altered</b>.</p> |
|          | (b) |  | <ul style="list-style-type: none"> <li>• promotes non-destructive testing, reducing waste</li> <li>• using digital workspaces reduces the need for physical sites that can impact the environment</li> <li>• multiple tests can be carried out using a range of materials, reducing waste</li> <li>• modifications can be made to the design without the need for physical models</li> </ul>                                                                                                                                                                                                                                                                                                                                                               | 2        | <p><b>Accept:</b><br/>Reduces shipping/transportation of components for testing.</p>                                                                                                                                                                                                              |
|          | (c) |  | <ul style="list-style-type: none"> <li>• multiple polygons give greater control over the car's form</li> <li>• nodes/edges/features/faces allow for accurate editing of the form</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 2        | 1 mark for each correct response.                                                                                                                                                                                                                                                                 |

| Question |     |      | Expected response                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Max mark | Additional guidance                                                                                                                                                                                                                   |
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| 2.       | (d) | (i)  | <ul style="list-style-type: none"> <li>• IBL has been used to reflect the environment on the metallic materials of the car</li> <li>• IBL has been used to recreate outdoor lighting in relation to the rendered environment</li> <li>• specularity has been created with reflective highlights on the wheel arches, edges of alloys, rear of bumpers at license plate anywhere the light catches the metallic/reflective features of the car</li> <li>• evidence of ambient lighting (global illumination), directional lighting (the shadow under the car indicating the direction of the sun's rays), point lighting, (individual LEDs in the car lights) area lighting (the whole cover for the rear lights has a gradient area light)</li> </ul> | 3        | <p>1 mark for each technique.</p> <p>Specularity must make specific reference to a feature on the car.</p> <p>Lighting requires a specific lighting style to be included in the response (ie, ambient, point, area, directional).</p> |
|          |     | (ii) | <ul style="list-style-type: none"> <li>• movement of the wheels created by the diffused/blurred alloy</li> <li>• movement along the road created by the blurred dynamic tarmac makes it look like the car is moving</li> <li>• movement created by the blurred of diffused barrier, tracks edges, background</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                               | 2        |                                                                                                                                                                                                                                       |

| Question |     |  | Expected response                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Max mark | Additional guidance                                                                                                                                                                                                                                                                                                                                                                                                                                   |
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| 3.       | (a) |  | <p><b>STAGE 1:</b></p> <ul style="list-style-type: none"> <li>• apply a freeform mesh/freeform grid/division to the handle 18x4 (1 mark)</li> </ul> <p><b>STAGE 2:</b></p> <ul style="list-style-type: none"> <li>• apply a line (axis) of symmetry (1 mark)</li> </ul> <p><b>STAGE 3:</b></p> <ul style="list-style-type: none"> <li>• edit the nodes (points), edges (lines) and/or faces to create the desired form (1 mark)</li> </ul> <p><b>STAGE 4:</b></p> <ul style="list-style-type: none"> <li>• convert the free form back to a solid (1 mark)</li> </ul>                                                                                                                                                                                                                                                                                           | 4        | <p>Correct mesh size does not need to be given to gain a mark for stage 1.</p> <p><b>Do not accept:</b><br/>Centre line at stage 2.</p> <p><b>STAGE 3:</b> candidates must mention either nodes, lines or faces.</p>                                                                                                                                                                                                                                  |
|          | (b) |  | <p><b>STAGE 1:</b></p> <ul style="list-style-type: none"> <li>• circle Dia. 76 and offset plane 150 angled to 20 degrees (1 mark)</li> </ul> <p><b>STAGE 2:</b></p> <ul style="list-style-type: none"> <li>• rectangular profile shape with all dimensions and rail/curve/arc R250 (1 mark)</li> </ul> <p><b>STAGE 3:</b></p> <ul style="list-style-type: none"> <li>• use of surface loft with rail (1 mark)</li> </ul> <p><b>STAGE 4:</b></p> <ul style="list-style-type: none"> <li>• thicken/offset to 3.5mm (1 mark)</li> </ul> <p><b>STAGE 5:</b></p> <ul style="list-style-type: none"> <li>• profile with all dimensions drawn middle or side and subtracted all the way through (1 mark)</li> </ul> <p><b>STAGE 6:</b></p> <ul style="list-style-type: none"> <li>• radial/circular array subtract feature from previous stage x2 (1 mark)</li> </ul> | 6        | <p><b>STAGE 3:</b><br/><b>Accept:</b><br/>'Loft with rail' without surface.</p> <p><b>STAGE 5:</b><br/><b>Accept:</b><br/>If the candidate has drawn the profile twice and subtracted twice.</p> <p><b>STAGE 6:</b><br/><b>Accept:</b><br/>If the candidate has drawn and subtracted once and then mirrored the subtracted feature and repeated this.</p> <p><b>Note:</b> position of axis for mirror plane or radial array axis is not required.</p> |

| Question |     |  | Expected response                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Max mark | Additional guidance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
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| 3.       | (c) |  | <p><b>STAGE 1:</b></p> <ul style="list-style-type: none"> <li>circle dia. 65, extruded 20 (1 mark)</li> <li>irregular chamfer 10 × 20 Deg and shell 10 (1 mark)</li> </ul> <p><b>STAGE 2:</b></p> <ul style="list-style-type: none"> <li>initial profile and path with all dimensions (1 mark)</li> <li>extrude along a path (1 mark)</li> </ul> <p><b>STAGE 3:</b></p> <ul style="list-style-type: none"> <li>apply irregular fillet running from A 0.5 to B 1.5 on both sides (1 mark)</li> </ul> <p><b>STAGE 4:</b></p> <ul style="list-style-type: none"> <li>radial array extrude along a path and irregular fillet 8 times (1 mark)</li> </ul> | 6        | <p><b>STAGE 1:</b><br/><b>Accept:</b><br/>Revolve where candidate has drawn this profile with all dimensions (1 mark) and revolved (360 deg this can be marked visually). (1 mark)</p> <p><b>STAGE 2:</b><br/><b>Accept:</b></p> <ul style="list-style-type: none"> <li>if path is drawn full way from one side to the other side (complete arch) with all dimensions included (1 mark)</li> <li>If path is mirrored before extrude along a path used</li> </ul> <p><b>STAGE 4:</b><br/><b>Accept:</b><br/>Radial array the feature/part 8 times.</p> <p><b>Note:</b> for stage 4 position of axis not required.</p> |
|          | (d) |  | <p><b>SYMBOL A:</b><br/>surface finish symbol tells no material is to be removed on any surface.</p> <p><b>SYMBOL B:</b><br/>is the symbol for centre of mass telling us the balance point for the item during manufacture.</p> <p><b>SYMBOL C:</b><br/>is a functional tolerance which will ensure the component fits the other component and is interchangeable.</p> <p><b>SYMBOL D:</b><br/>is a datum feature telling the manufacturer where all measurements should be taken/inspected from.</p>                                                                                                                                                | 4        | <p><b>1 mark</b> for a correct explanation of each symbol.</p> <p><b>Note:</b> candidates must explain the function of the symbol, so identification itself is not sufficient.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                   |

| Question |     |  | Expected response                                                                                                                                                                                                                                                                                                                                                                                            | Max mark | Additional guidance                                                                                                                                   |
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| 3.       | (e) |  | <ul style="list-style-type: none"> <li>• select material</li> <li>• apply constraints or fixing points</li> <li>• apply load(s)/forces in the correct position and/or direction and/or magnitude</li> <li>• specify environmental conditions (eg, temperature)</li> <li>• select static or dynamic load or force variance over time</li> <li>• set scale of units to achieve clear visual results</li> </ul> | 4        | <p><b>1 mark</b> for each bullet point from those listed.</p> <p><b>Accept:</b><br/>define results analysis parameters instead of scale of units.</p> |

| Question |     |      | Expected response                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Max mark | Additional guidance                                                                                                                                                                                                                                                                                                                                                                                             |
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| 4.       | (a) | (i)  | <ul style="list-style-type: none"> <li>town planners will consider how the restoration will affect the town, i.e. traffic, disruption to living/access to buildings etc and plan to manage this</li> <li>town planners will ensure the restoration conforms with local authority building standards</li> <li>making sure people have access to homes, jobs and facilities such as schools, hospitals and open spaces</li> <li>balancing the needs of communities, businesses and the environment</li> <li>setting out and using development rules and guidelines across the country</li> <li>protecting buildings and areas that are of environmental, historical or architectural importance</li> <li>meeting architects and local people, explaining your ideas and proposals, and listening to other people's views.</li> <li>presenting to committees and meetings on planning proposals</li> </ul> | 2        | <p><b>Accept:</b></p> <ul style="list-style-type: none"> <li>candidates must mention a specific impact on the life of the town</li> <li>any suitable explanation for management of town amenities and conformation with building standards/listed building consent/planning permission</li> </ul> <p><b>Accept:</b><br/>Town planners can assist with sourcing funding eg, heritage grants, tax incentives.</p> |
|          |     | (ii) | <ul style="list-style-type: none"> <li>conservation bodies will ensure the materials being used are sustainable and don't impact the local environment, ie, flora/fauna/wildlife</li> <li>conservation bodies will consider the disposal of materials to ensure they do not impact the environment</li> <li>conservation body will ensure the building fits other historical buildings/styling with the town</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 2        | <p><b>Accept:</b><br/>conservation bodies can:</p> <ul style="list-style-type: none"> <li>source specialist craftsmen</li> <li>provide advice on retrofitting eg, secondary glazing</li> <li>assist with heritage funding</li> </ul> <p><b>Accept:</b><br/>Ensure building materials will not damage the existing building.</p>                                                                                 |

| Question |     |       | Expected response                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Max mark | Additional guidance                                                                                                                                                                                                                                                                                                                                            |
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| 4.       | (a) | (iii) | <ul style="list-style-type: none"> <li>• determine the number of items/ quantities of items required for the build eg, windows, cabling, pipes, brickwork etc</li> <li>• once quantities are known ie, number of windows, quantity surveyor can then work out costs of this</li> <li>• consult with clients to understand their requirements</li> <li>• conduct feasibility studies to vet proposed projects</li> <li>• calculate quantities and costs for labour, equipment and contingency</li> <li>• prepare tender packages and contracts, including bills of quantities</li> <li>• manage risk, value engineering and cost control measures</li> <li>• analyse repair/maintenance costs</li> <li>• negotiate contracts and schedules</li> <li>• oversee and value subcontractors' work for payments</li> <li>• ensure compliance with regulations and quality standards</li> </ul> | 2        | <p><b>1 mark</b> related to the <b>quantities</b> required for any item.</p> <p><b>1 mark</b> for being able to work out <b>costs</b> based on the quantities of items required.</p> <p><b>Accept:</b></p> <ul style="list-style-type: none"> <li>• assist with building upkeep and maintenance costing</li> <li>• assist with contingency planning</li> </ul> |
|          | (b) | (i)   | <ul style="list-style-type: none"> <li>• underground survey can be used to determine if the original foundations require reinforcement with new building work</li> <li>• underground survey can help to determine the soil composition and what additional foundations may be required for any extension/additional building work</li> <li>• underground survey can determine what is already under the ground and help to plan around any items that need removed/to be worked around</li> <li>• underground utility surveys are needed to pinpoint the exact location of utilities so that contractors can plan accordingly eg, piping required to join existing sewage system</li> </ul>                                                                                                                                                                                             | 2        | <p><b>Accept:</b></p> <p>Determine the risk of subsidence, soil wash out, sink holes.</p>                                                                                                                                                                                                                                                                      |

| Question |     |       | Expected response                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Max mark | Additional guidance                                                                                                                                                                                                                                                                                                               |
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| 4.       | (b) | (ii)  | <ul style="list-style-type: none"> <li>• drainage survey will help determine if the original plumbing/drainage is suitable for the restoration</li> <li>• drainage survey will help to determine if plumbing/drainage needs to be rerouted</li> <li>• drainage survey will help to determine where foul and storm water will need be located around the building</li> <li>• drainage survey will help to determine where mains water and drains need to be connected to existing water supply/drainage</li> </ul> | 2        | <p>Answers do not have to mention a specific user.</p> <p><b>Accept:</b><br/>The survey will help to plan a new system that meets current building standards.</p>                                                                                                                                                                 |
|          |     | (iii) | <ul style="list-style-type: none"> <li>• feature survey will help determine the hard landscaping around the restoration ie, pathways, aggregates, slabbing, driveways, decking etc</li> <li>• feature survey is used to plan the landscape around the building to ensure suitable garden/outdoor space/patios/sitting areas for users</li> <li>• feature survey used to determine best placement/use of soft landscaping ie, shrubbery, trees, grass, artificial grass etc</li> </ul>                             | 2        | <p><b>Accept:</b></p> <ul style="list-style-type: none"> <li>• survey would <b>assess existing hard landscaping</b> for compatibility with new materials</li> <li>• survey would <b>assess proposed modification to existing features</b> such as seating, lighting, trees eg, seating to be moved/dismantled/modified</li> </ul> |
|          | (c) |       | <ul style="list-style-type: none"> <li>• determining what furnishings, fixtures and fittings would be most suitable for the specification of the apartments/building</li> <li>• determining colour schemes/finishing/fabrics required for the apartments/building</li> <li>• plan the space to maximise the function and movement within it</li> <li>• produce plans and drawings to demonstrate layouts (spatial planning) along with a proposed design scheme</li> </ul>                                        | 2        | <p><b>Accept:</b></p> <ul style="list-style-type: none"> <li>• determines the best materials for interior eg, partitions, shelving etc</li> <li>• determines the nature and position of lighting</li> </ul>                                                                                                                       |

| Question |     |  | Expected response                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Max mark | Additional guidance                                                                                                                                                                                                                                                                                                                            |
|----------|-----|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4.       | (d) |  | <ul style="list-style-type: none"> <li>• introduction of computer-based systems will provide opportunities for jobs, i.e. video editing etc</li> <li>• using computer-based systems in this provides easier access for a wide range of people</li> <li>• accessible from any location (No need for travel to the apartment)</li> <li>• additional features can be added to support understanding ie, interactive links that provide more detailed information about the restoration/building/rooms/furnishings/landscape/local area</li> <li>• VRML provide the opportunity for the user to interact with the interior changing colour schemes, appearances, types of furnishing etc to see if the building will work for them</li> <li>• creates an opportunity to improve accessibility, ie, language selectors, audio guides, visual cues, etc</li> </ul> | 3        | <b>Accept:</b> <ul style="list-style-type: none"> <li>• being able to adjust lighting levels, zoom etc. functions personalise the viewing experience</li> <li>• makes viewing properties more accessible for those with mobility issues</li> <li>• reduces impact on the environment: reduced transportation, lighting, heating etc</li> </ul> |

| Question |     |  | Expected response                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Max mark | Additional guidance                                                                                                                                |
|----------|-----|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| 5.       | (a) |  | <p><b>Motion Tweening:</b></p> <ul style="list-style-type: none"> <li>• only requires a start and end point to be added and the computer will determine intermediate frames</li> <li>• graphics can be placed on a path making it easier to determine the range of movement</li> <li>• motion tweens are more efficient than frame-by-frame animation</li> <li>• motion tweens can create a wide range of movements suitable for characters exercising</li> <li>• motion tweens can animate complex shapes that would be difficult to animate frame-by-frame</li> <li>• motion tweens can create smooth transitions between different scenes or states</li> <li>• motion tweens could show clearly/emphasise the key points in the movement to assist understanding</li> <li>• motion tweens could simplify the movement to aid understanding</li> </ul> <p><b>Post Editing Techniques:</b></p> <ul style="list-style-type: none"> <li>• transitions such as fade/blend could be used to make scenes run smoothly together</li> <li>• transitions such as fade/blend could be used to make it clear that a new exercise/skill is beginning</li> <li>• transitions such as fade/blend could be used to add interest to the change between scenes</li> <li>• fade to black could be used to show the animation has been ended</li> <li>• text overlays could be used to include subtitles</li> <li>• text overlays could be used to include captions that help improve understanding</li> <li>• zoom could be used to zoom in to exercises/skills to make clearer</li> <li>• picture overlays could be used to show stills of exercises/skills to support understanding</li> </ul> | 8        | <p>1 mark for each relevant description.</p> <p>A maximum of 6 marks can be awarded for motion tweening advantages or post editing techniques.</p> |

| Question |     |  | Expected response                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Max mark | Additional guidance                                                                                                                  |
|----------|-----|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|--------------------------------------------------------------------------------------------------------------------------------------|
| 5.       | (b) |  | <p><b>Silhouettes:</b></p> <ul style="list-style-type: none"> <li>• makes it easier for children to understand buttons through the use of simple icons</li> <li>• silhouettes make the different sports clear even within the small space available</li> <li>• creates contrast, making buttons stand out to children</li> <li>• anonymises gender/ethnicity making the graphic appealing to everyone</li> <li>• the familiar icons and the 'your profile' silhouette' makes these functions clear</li> <li>• silhouettes makes info clear without use of language</li> </ul> <p><b>Pace:</b></p> <ul style="list-style-type: none"> <li>• the use of the structure/ layout/size makes navigation of the key items quick and easy to follow, which will make it easier for children to use</li> <li>• minimal words/short titles increase the pace and speed up interpretation</li> <li>• clear icons increase the pace to speed up interpretation</li> <li>• the navigation wheel will allow for quick operation of the sport video selector and making it easy to select your chosen sport quickly</li> </ul> | 4        | Answers must relate to how each element/principle makes it easier to navigate or improve the user interface for the target audience. |

| Question |     |  | Expected response                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Max mark | Additional guidance                                                                                 |
|----------|-----|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-----------------------------------------------------------------------------------------------------|
| 5.       | (c) |  | <ul style="list-style-type: none"> <li>the boxes/squares/rectangles on the app have been sized/positioned/proportioned to reflect the golden ratio (to ensure a well-balanced graphic item is produced)</li> <li>the images on the app are scaled according to the golden ratio to fit the space they are used in</li> <li>the scroll wheel is the main feature within the app and has been made dominant using the golden ratio (creating a focal point to draw you to this)</li> <li>the logo has been scaled/positioned according to the golden ratio, focusing attention on this, and emphasizing the company brand</li> </ul> | 2        | <b>Note:</b> responses should relate to proportions and or hierarchy created with the golden ratio. |
|          | (d) |  | <ul style="list-style-type: none"> <li>avi is universal meaning it will be easy to operate the graphic/videos etc on a range of electronic devices such as tablets/computers</li> <li>3gp will ensure the animations will operate correctly on mobile devices</li> </ul>                                                                                                                                                                                                                                                                                                                                                           | 2        |                                                                                                     |

[END OF MARKING INSTRUCTIONS]