DTBase©

Design & Technology
AQA A-Level

Design communication

Materials required for questions

- Pencil
- Rubber
- Calculator

Instructions

- Use black ink or ball-point pen
- Try answer all questions
- Use the space provided to answer questions
- Calculators can be used if necessary
- For the multiple choice questions, circle your answer

Advice

- Marks for each question are in brackets
- Read each question fully
- Try to answer every question
- Don’t spend too much time on one question

Good luck!

Q1. Which technique is most effective for presenting statistical data trends to clients?

A 3D sketching

B Graphs

C Report writing

Q2. What is the primary purpose of rendering in a design drawing?

A To add precise dimensions

B To enhance visual realism using colour/texture

C To create technical tables

Q3. Which method ensures components are manufactured to exact specifications?

A Mixed media collage

B 2D abstract sketching

C Dimensioning with tolerances

Q4. A designer uses isometric and orthographic views in a presentation. This demonstrates:

A Use of 2D/3D sketching

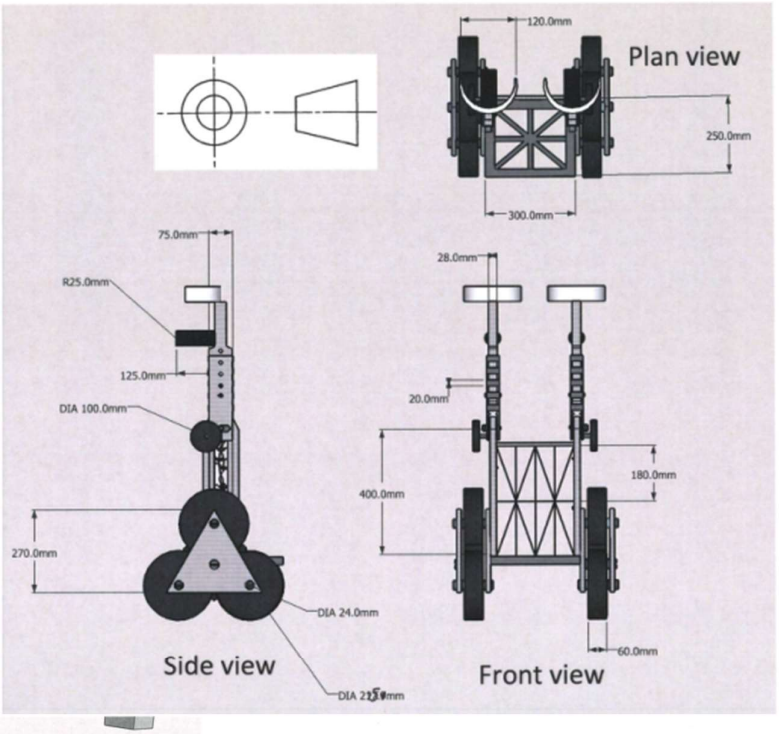
B Report writing standards

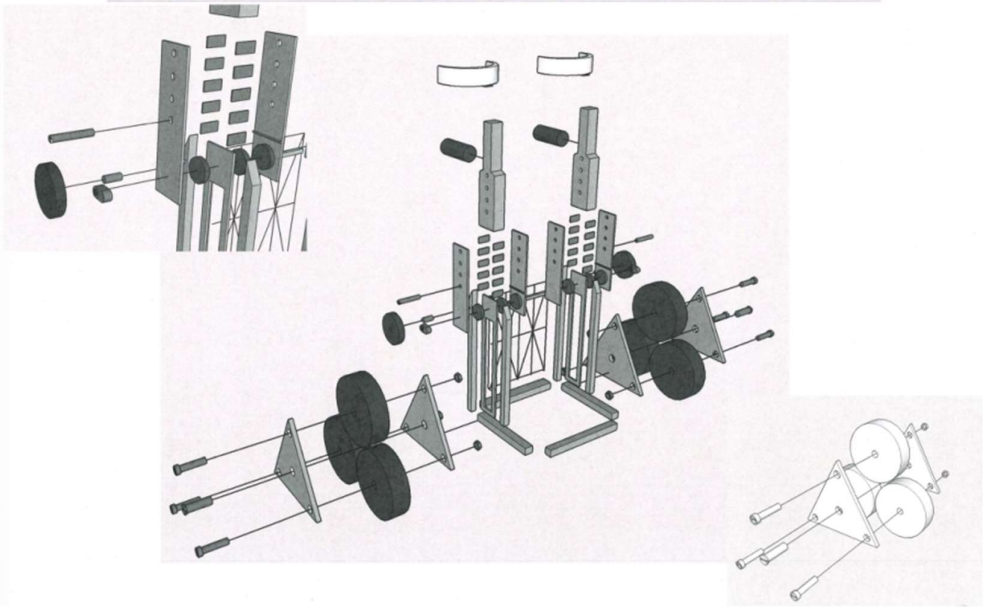
C Table formatting

Q5. Evaluate the following techniques for rendering a design:

- using computer aided design (CAD)
- hand generated **(6 marks)**

Q6. The images below show two different design communication techniques. Discuss why a designer may use each technique to communicate information **(6 marks)**





Answers

Q1. B
Q2. B
Q3. C
Q4. A

Q5.
CAD Rendering

- Costly software and powerful computer processors are needed which can make it prohibitive.
- A high degree of competency in the use of the CAD software is needed to fully exploit all functions which may require lengthy training.
- Software may require purchased credits to perform high quality renders adding to the cost of the technique.
- Photo realistic renders are feasible.
- A huge range of material textures are available.
- Light sources and shadow can be represented.
- Rendered images can be placed into scenarios.
- CAD can be emailed/shared for instant feedback from clients/focus groups.
- CAD renders can be easily edited.

Hand rendering

- A great deal of skill is needed to proficiently achieve a high quality render using markers, coloured pencils or inks etc.
- Specialist paper is needed to avoid the colours running.
- A hand rendered drawing can be time consuming to complete and takes longer than CAD.
- Tone and shadow can be achieved through a wide range of available colours.
- Flat smooth colours can be achieved with the use of a blender.
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- Minimal specialist equipment is needed making the process more affordable than CAD.
- Hard to edit the render and usually would require restarting

Q6.

Exploded view:

- Designers may use exploded views to produce assembly instruction booklets for flat pack furniture to assist the consumer.
- Exploded views allow the viewer to see all components within a product clearly.
- Exploded views can be used on assembly lines to assist during production.
- Exploded views may be used to communication information on internal assemblies to a client during a design meeting.
- Using CAD software allows a designer to create an exploded view on screen and re-assemble a product virtually when working with a client so all components can be seen.
- Exploded views allow consumers to identify and order replacement parts.

Sectional view (Orthographic):

- Sectional views allow the viewer to see internal and hidden details within an assembly.
- Using 2D sectional views allows dimensions of hidden components to be added onto engineering drawings.
- Sectional views allow designers to visualise the interaction between separate hidden components.