



ATAR course examination, 2024

Question/Answer booklet

DESIGN

Please place your student identification label in this box

WA student number: In figures

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In words

Time allowed for this paper

Reading time before commencing work: ten minutes

Working time: two and a half hours

Materials required/recommended for this paper

To be provided by the supervisor

This Question/Answer booklet

Number of additional
answer booklets used
(if applicable):

To be provided by the candidate

Standard items: pens (blue/black preferred), pencils (including coloured), sharpener,
correction fluid/tape, eraser, ruler, highlighters

Special items: nil

Important note to candidates

No other items may be taken into the examination room. It is **your** responsibility to ensure that you do not have any unauthorised material. If you have any unauthorised material with you, hand it to the supervisor **before** reading any further.

Structure of the examination

The Design ATAR course examination consists of a written component and a practical (portfolio) component.

Structure of this paper

Section	Number of questions available	Number of questions to be answered	Suggested working time (minutes)	Marks available	Percentage of written examination
Section One Short answer	4	4	45	32	30
Section Two Extended answer	3	3	105	64	70
Total					100

Instructions to candidates

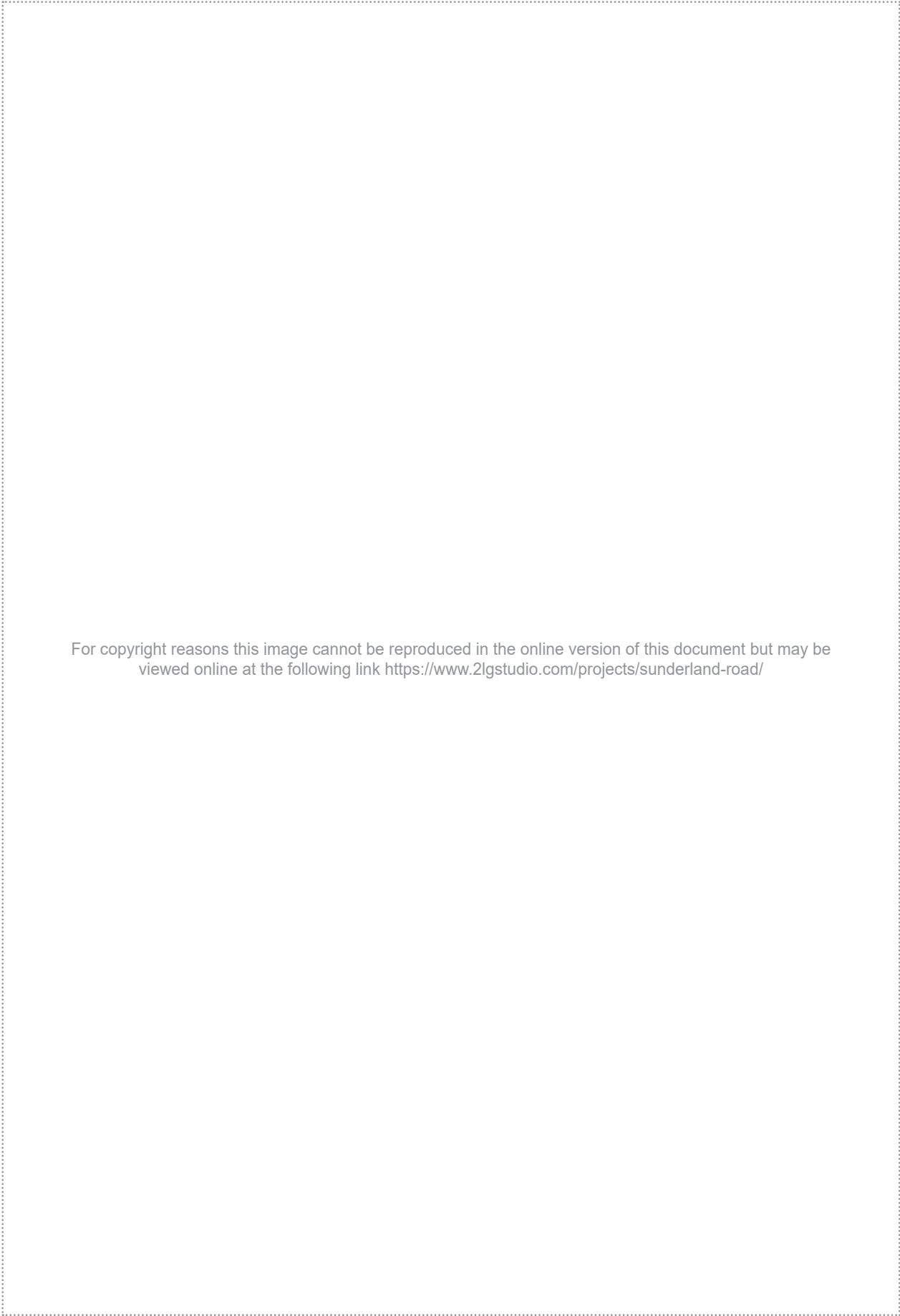
1. The rules for the conduct of the Western Australian external examinations are detailed in the *Year 12 Information Handbook 2024: Part II Examinations*. Sitting this examination implies that you agree to abide by these rules.
2. Write your answers in this Question/Answer booklet preferably using a blue/black pen. Do not use erasable or gel pens.
3. You must be careful to confine your answers to the specific questions asked and to follow any instructions that are specific to a particular question.
4. Supplementary pages for planning/continuing your answers to questions are provided at the end of this Question/Answer booklet. If you use these pages to continue an answer, indicate at the original answer where the answer is continued, i.e. give the page number.

Section One: Short answer**30% (32 Marks)**

This section has **four** questions. Answer **all** questions. Write your answers in the spaces provided.

Supplementary pages for planning/continuing your answers to questions are provided at the end of this Question/Answer booklet. If you use these pages to continue an answer, indicate at the original answer where the answer is continued, i.e. give the page number.

Suggested working time: 45 minutes.



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Figure 1: *Sunderland House*, by 2LG Studio

See next page

Question 1

(4 marks)

Interpret at least **two** psychological effects of colour in Figure 1.

Question 2

(8 marks)

A client has asked you to design a new chewing gum similar to the product in Figure 2. This could include the design of the gum, packaging or advertising.

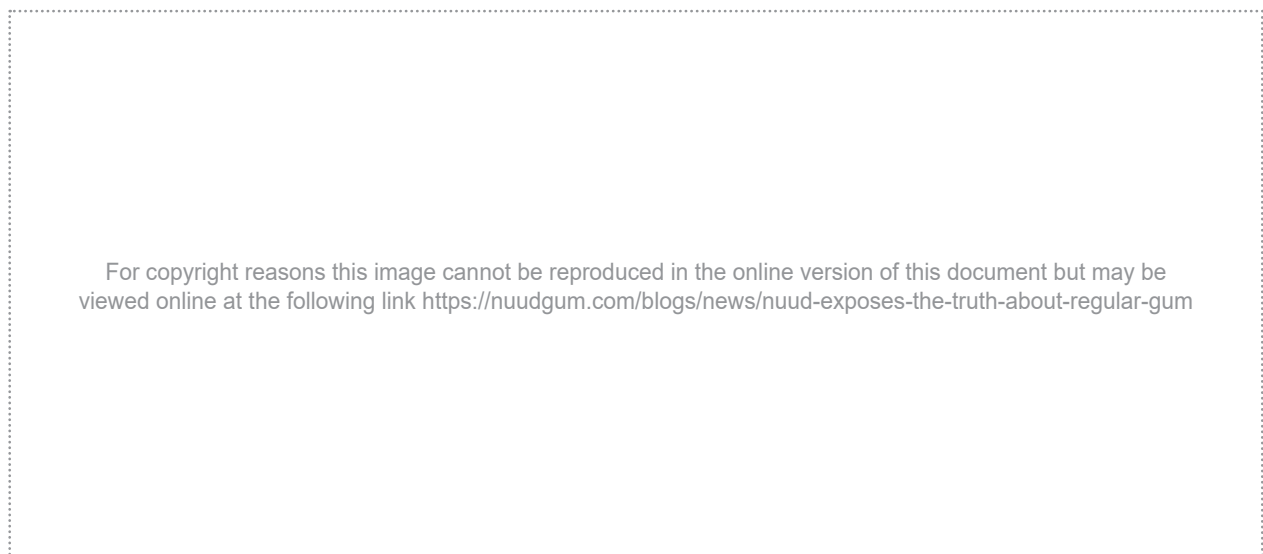
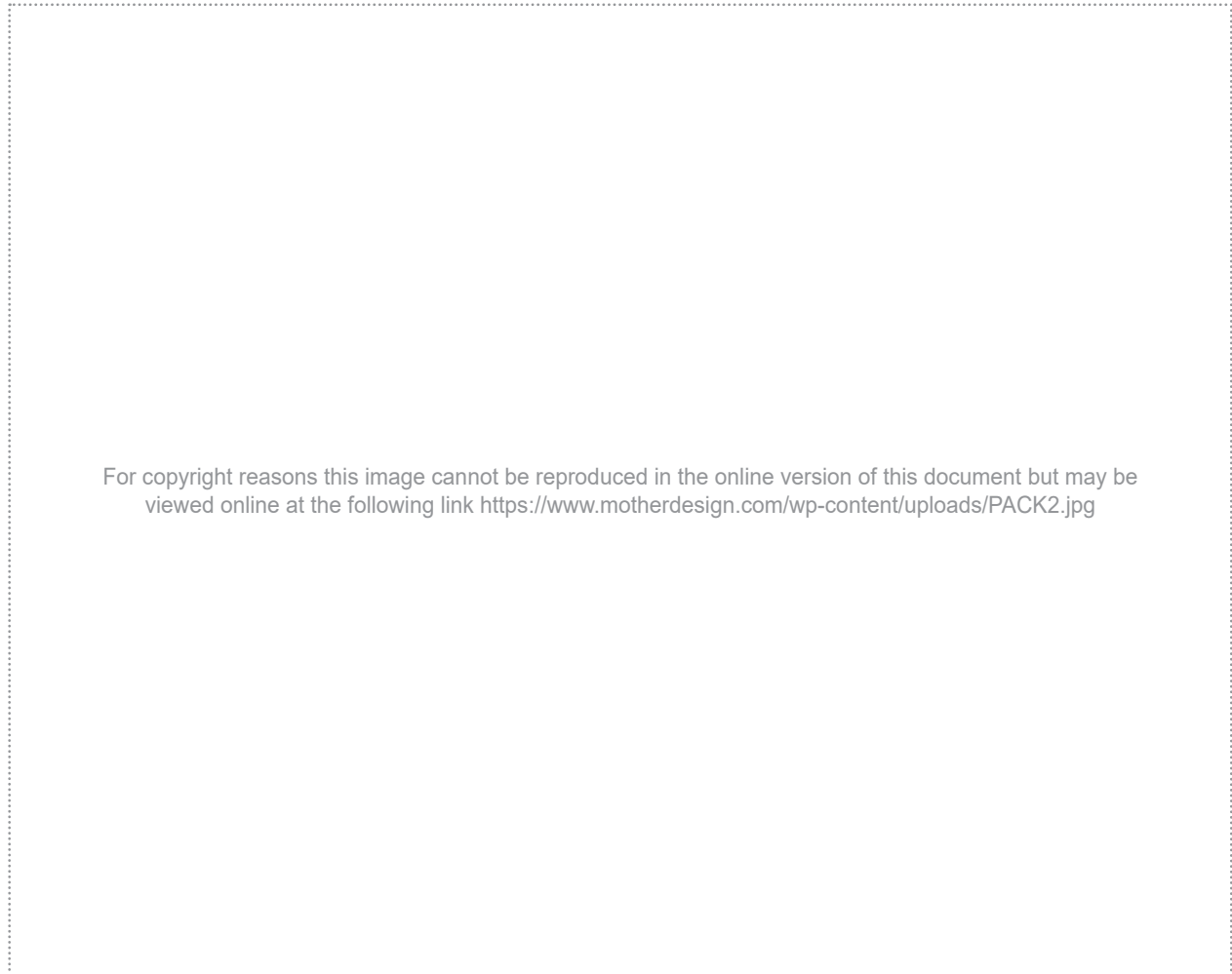


Figure 2: Nuud Gum
(Plastic-free, plant-based and biodegradable chewing gum.
Made from sustainably-harvested tree sap)

See next page

- (a) Explain **one** registered design, patent or trademarking law that may need to be considered. (4 marks)

- (b) Recommend **two** ergonomic considerations to make your design compatible with consumer needs. (4 marks)

One: _____

Two: _____

Question 3

(6 marks)

Photographer Andrew Rovenko drew inspiration from his daughter's imagination. Mia Rovenko, a four-year-old girl, envisions herself as an astronaut from Earth. She has a fascination with the night sky, the universe and exploring her place in it. The empty landscapes and deserted spaces of a city are transformed into other worlds in Mia's universe.

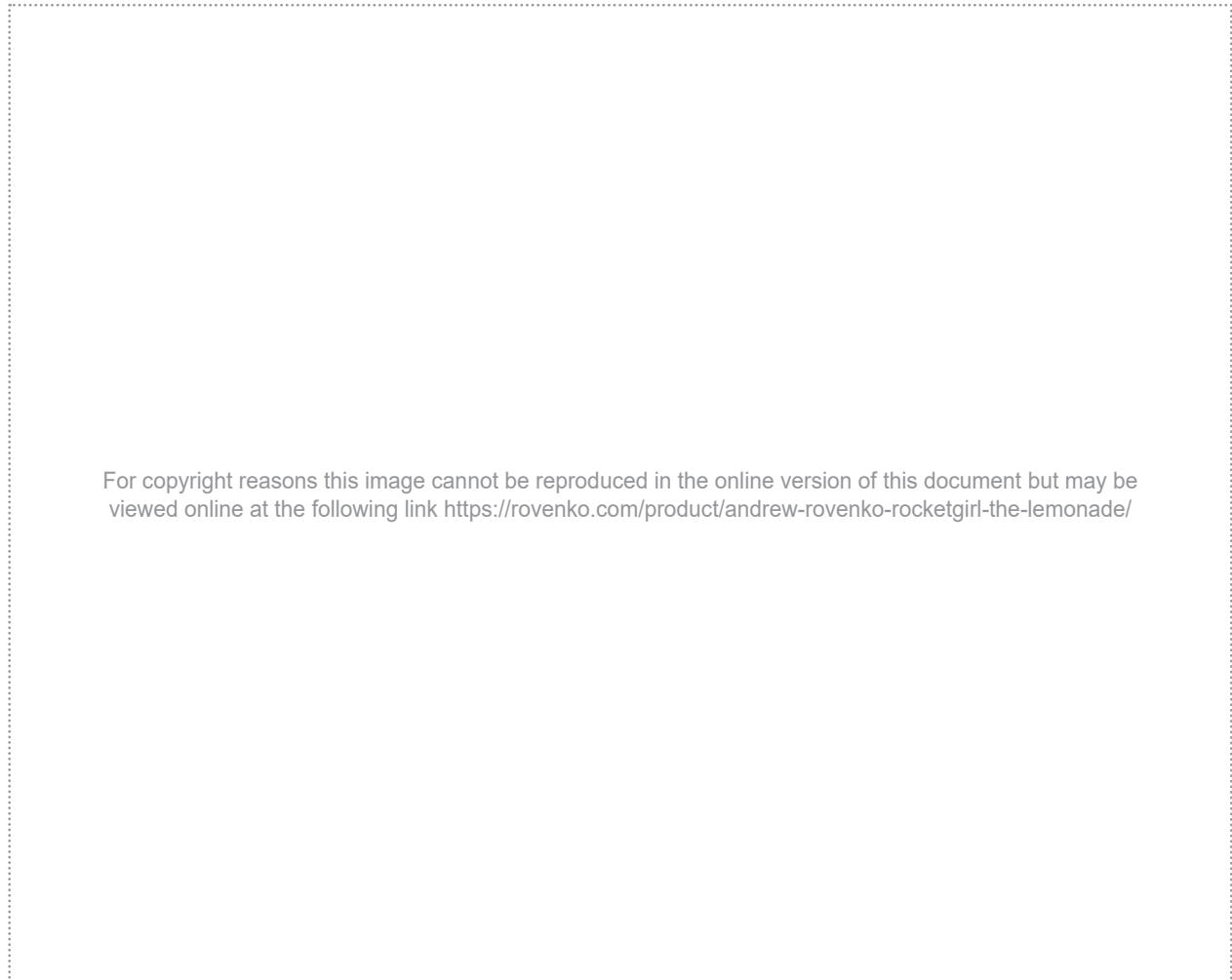


Figure 3: A, Rovenko. *The Rocketgirl Chronicles – The Lemonade*, Photographic Print

Explain how **two** gestalt principles have been used to create meaning in Figure 3.

One: _____

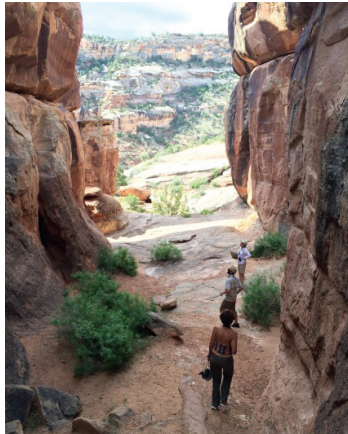
Two: _____

Question 4

(14 marks)

Refer to the description and Figure 4 to answer all parts of this question.

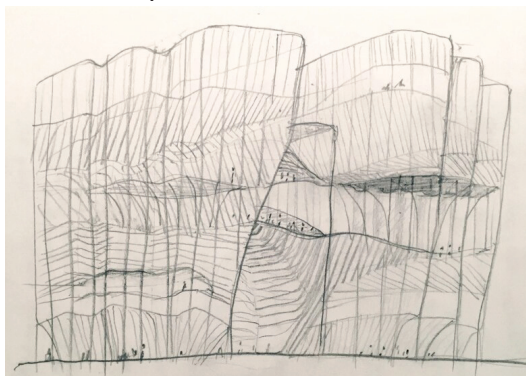
As part of its design process, American architectural firm Studio Gang created a set of renderings for its designs of the architectural addition to the Natural History Museum. Located in Manhattan, this addition will connect ten buildings across the sprawling site while replacing three existing ones.



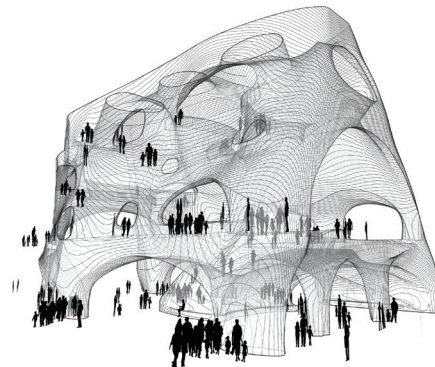
Inspiration



Experimentation



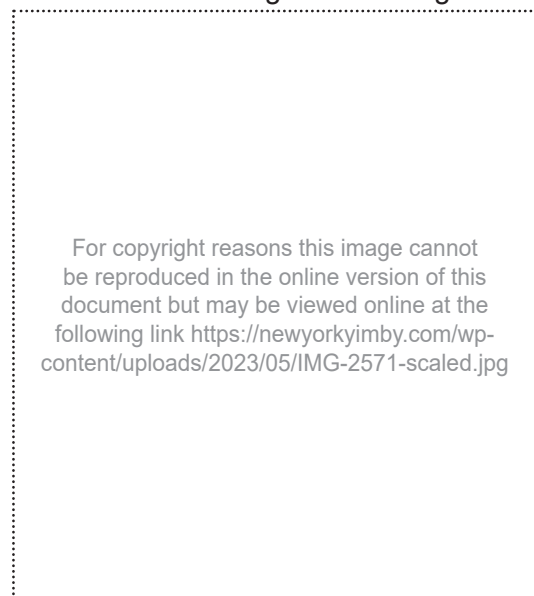
Initial sketch



Wireframe digital rendering



Digital rendering



Exterior post construction

Figure 4: American Museum of Natural History. Design concepts and drawings by Studio Gang

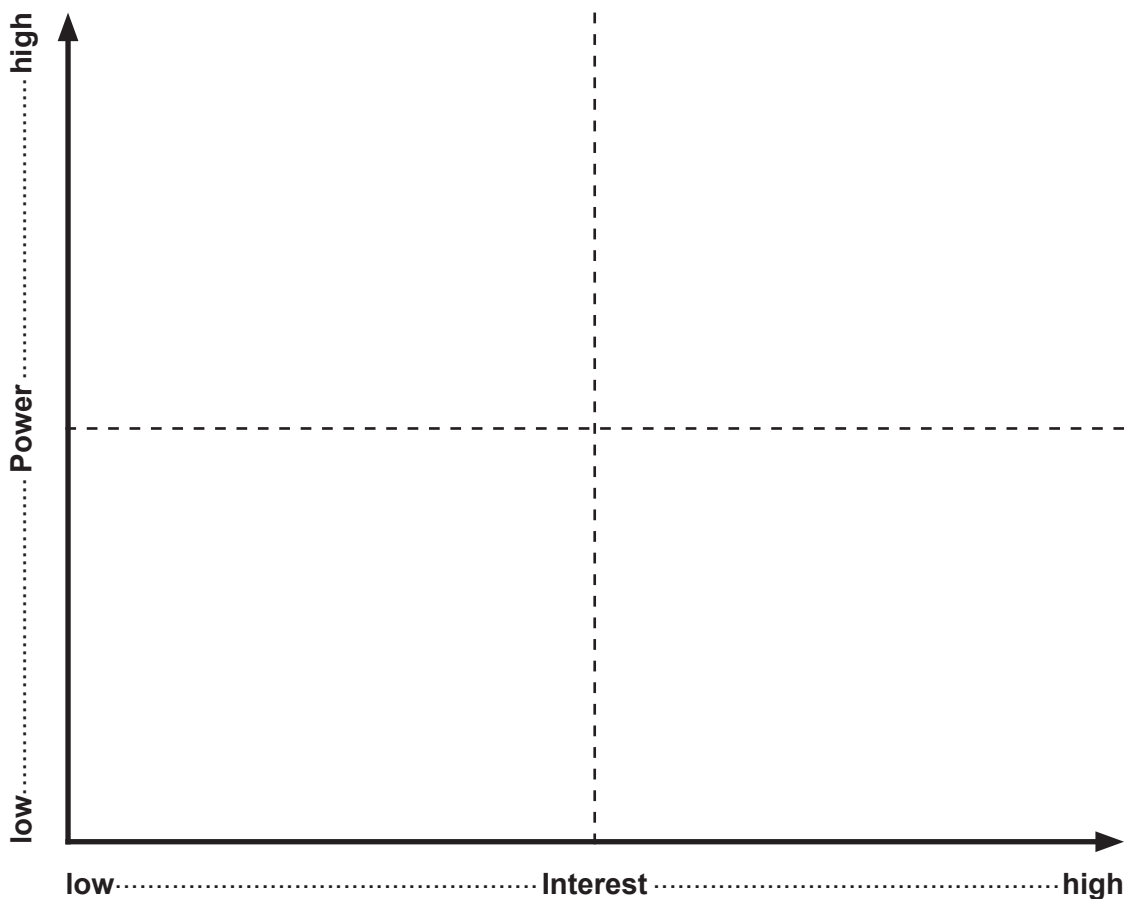
See next page

- (a) State **two** advantages of the application of an iterative design process with reference to Figure 4. (2 marks)

One: _____

Two: _____

- (b) Complete the power vs interest grid below by identifying a stakeholder and their level of influence for each quadrant of the matrix that Studio Gang would have considered in creating its architectural concept. (4 marks)



Question 4 (continued)

- (c) Identify **two** methods of prototyping evident in Figure 4. (2 marks)

One: _____

Two: _____

- (d) Evaluate how the **two** methods of prototyping identified in part (c) have been utilised and for what purpose. (6 marks)

One: _____

Two: _____

End of Section One

See next page

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See next page

Section Two: Extended answer**70% (64 Marks)**

This section contains **three** questions. Answer **all** questions. Write your answers in the spaces provided.

Supplementary pages for planning/continuing your answers to questions are provided at the end of this Question/Answer booklet. If you use these pages to continue an answer, indicate at the original answer where the answer is continued, i.e. give the page number.

Suggested working time: 105 minutes.

Question 5**(28 marks)**

Refer to Figure 5 to answer all parts of this question.

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Figure 5: J, Holcroft. *The earth is slipping through our fingers*, Digital Illustration

See next page

(a) Examine the use of semiotics in Figure 5 to complete the table below.

- (i) Identify a symbol, an index and an icon (signs). (3 marks)
 (ii) Interpret how each identified sign functions as a symbol, index and icon. (6 marks)
 (iii) Describe what is signified by the signifiers. (9 marks)

	Symbol	Index	Icon
Identified sign			
Interpretation			
Description			

See next page

Question 5 (continued)

(b) Explain how these signs work together to create meaning in the image. (4 marks)

- (c) Consider how audiences composed of different demographics and psychographics might interpret the signs identified in Figure 5. (6 marks)

Question 6

(17 marks)

Refer to **one** historical and/or contemporary design you investigated this year for all parts of this question.

(a) Identify a design/er that has influenced your design process. (1 mark)

(b) Explain the design/er’s key visual motifs, features and/or concepts. (4 marks)

(c) Explain how the design/er reflects social, cultural and/or political context/s. (4 marks)

See next page

(d) (i) Describe **one** design outcome you proposed this year.

(2 marks)

(ii) Evaluate how your design was influenced by the design/er.

(6 marks)

Question 7

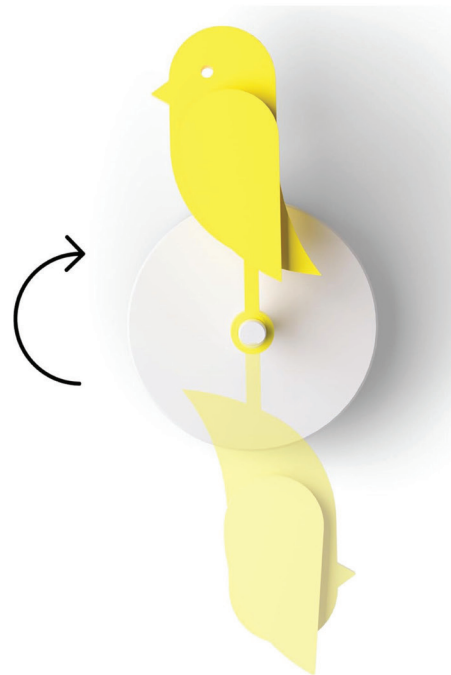
(19 marks)

Refer to the description and Figure 6 below to answer all parts of the question.

Birdie® is a wall-mounted carbon dioxide (CO₂) monitor made from recycled plastic with a rechargeable battery. Inspired by the ‘canary in a coal mine’ concept, it drops down when air quality is poor, signalling the need to open windows for fresh air. Since the average Australian spends more than 90% of their time indoors, indoor air quality is vital for our health. Unlike other monitors, Birdie® simplifies air quality reporting with a visual interface that does not rely on apps or digital displays.



Instructions



Birdie Fresh Air Monitor



Packaging



Figure 6: Birdie® Fresh Air Monitor

See next page

- (a) Discuss **one** communication strategy the designers of Birdie® may have considered when marketing their product to consumers. (3 marks)

Question 7 (continued)

(b) The designers of Birdie® would have used a range of Design Thinking strategies during the development of the product.

- Describe **two** Design Thinking strategies the designers may have used. (6 marks)
- Justify the Design Thinking strategy you consider to be the most beneficial to the development of Birdie®. (4 marks)

- (c) Evaluate the design conventions used to meet the design outcome in Figure 6. (6 marks)

End of questions

ACKNOWLEDGEMENTS

- Question 1** 2LG Studio (n.d.). [Photograph of a stilted playhouse and children's play area]. Retrieved May, 2024, from <https://www.2lgstudio.com/projects/sunderland-road/>
- Question 2** Top Image: Nuud Snacks. (n.d.). [Photograph of blue Nuud chewing gum packages]. Retrieved May, 2024, from <https://www.motherdesign.com/wp-content/uploads/PACK2.jpg>
Bottom image: Nuud Snacks. (n.d.). [Photograph of blue and green Nuud chewing gum packages]. Retrieved May, 2024, from <https://nuudgum.com/blogs/news/nuud-exposes-the-truth-about-regular-gum>
- Question 3** Rovenko. A. (n.d.). *The Lemonade* [Photograph]. Retrieved May, 2024, from <https://rovenko.com/product/andrew-rovenko-rocketgirl-the-lemonade/>
- Question 4** Top left image: Studio Gang. (2015). [Photograph of the design team walking through a canyon towards an opening]. Retrieved May, 2024, from <https://cdnassets.hw.net/dims4/GG/627e7cb/2147483647/resize/x567%3E/quality/90/?url=https%3A%2F%2Fcdnassets.hw.net%2Ff1%2Fbd%2Fde43954e4bbca9dcee95357b006d%2Frichard-gilder-center-science-education-innovation-07.jpg>
Top middle image: Studio Gang. (2015). [Photograph of a designer pouring hot water to melt through an ice brick]. Retrieved May, 2024, from <https://cdnassets.hw.net/dims4/GG/e4916bc/2147483647/resize/850x%3E/quality/90/?url=https%3A%2F%2Fcdnassets.hw.net%2F18%2Fca%2F472041014b43a0bbf2da7f94fbf2%2Frichard-gilder-center-science-education-innovation-08.jpg>
Top right image: Studio Gang. (2015). [Photograph of hollow openings melted through an ice brick]. Retrieved May, 2024, from <https://cdnassets.hw.net/dims4/GG/e4916bc/2147483647/resize/850x%3E/quality/90/?url=https%3A%2F%2Fcdnassets.hw.net%2F18%2Fca%2F472041014b43a0bbf2da7f94fbf2%2Frichard-gilder-center-science-education-innovation-08.jpg>
Middle row left image: Gang, J. (2016). [Conceptual building sketch by architects]. Retrieved May, 2024, from <https://cdnassets.hw.net/dims4/GG/9a55959/2147483647/resize/850x%3E/quality/90/?url=https%3A%2F%2Fcdnassets.hw.net%2Fff%2Fa3%2Ffaea4a6e4e57b65b6722a0491ac2%2Frichard-gilder-center-science-education-innovation-02.jpg>
Middle row right image: Studio Gang. (2019). [Glider Center atrium structure revealed in an axonometric illustration]. Retrieved May, 2024, from <https://studiogang.com/img/bzhKS1JxdVdnMVNWcmpaZWliRmNkZz09/gilder-center-axonometric-perspective-c-studio-gang.jpg>
Bottom left image: Studio Gang/MIR. (2018). [Digital rendering of the Glider Center's atrium]. Retrieved May, 2024, from <https://studiogang.com/img/cG45elZCCGFNdK9BSnlyb2dmaEFzdz09/gilder-center-new-york-studio-gang-museum.jpg>

Bottom right image: Young, M. (n.d.). [Photograph of exterior post construction of American Museum of Natural History]. Retrieved May, 2024, from <https://newyorkyimby.com/wp-content/uploads/2023/05/IMG-2571-scaled.jpg>

Question 5

Holcroft. J. (n.d.). *The Earth is Slipping Through our Fingers* [Illustration]. Retrieved May, 2024, from <http://www.johnholcroft.com/wp-content/uploads/2013/06/John-Holcroft-hearth-hand-.jpg>

Question 7

Top left image: Birdie. (n.d.). *Gift Card Birdie 2023* [Photograph]. Retrieved May, 2024, from https://drive.google.com/file/d/1cJfkGIDKudT1Z5if_J09v1GIQbetRYLL/view?pli=1

Top right image: Birdie. (n.d.). *Birdie Design Indoor CO2 Monitor - Air Quality Meter for Home & Office - Promotes Mental & Physical Health - Accurate CO2 Measurement - Modern Interior Decor - Reducing Health Risks with Clean Air* [Photograph]. Retrieved May, 2024, from <https://www.amazon.in/Birdie-Design-Indoor-CO2-Monitor/dp/B0CLGX8V8Y>

Bottom left image adapted from: Bottern, K. (n.d.). [Photograph of packaging and one opened package of Birdie]. Retrieved May, 2024, from <https://cdn.mos.cms.futurecdn.net/EQnBiDHLGCYQXbGAWnUMae-768-80.jpg.webp>

Bottom right image: Bottern, K. (n.d.). [Photograph of Birdie air monitor and packaging]. Retrieved May, 2024, from <https://cdn.mos.cms.futurecdn.net/DTtjFcQZBQVLJVaHCUKW9e-768-80.jpg.webp>

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