



STUDENT EDUCATION NUMBER									

# Samoa School Certificate

# DESIGN TECHNOLOGY 2022

## QUESTION and ANSWER BOOKLET

Time allowed: 3 Hours & 10 minutes

### INSTRUCTIONS

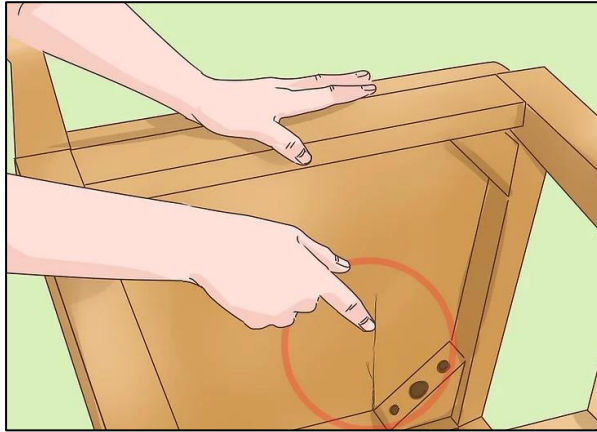
1. You have 10 minutes to read **before** you start the exam.
2. Write your **Student Education Number (SEN)** in the space provided on the top right hand corner of this page.
3. **Answer ALL QUESTIONS.** Write your answers in the spaces provided in this booklet.
4. If you need more paper to write your answers, ask the Supervisor. Write your SEN on all extra sheets used and clearly number the questions. Attach the extra sheets at the appropriate places in this booklet.

STRANDS		Pages	Time (min)	Weighting
<b>STRAND 1</b>	DESIGNING AND DRAWING	2-6	37	20
<b>STRAND 2</b>	TOOLS – Hand and Power Tool	7-10	38	21
<b>STRAND 3</b>	MATERIALS – Wood Materials	11-14	32	18
<b>STRAND 4</b>	PROCESSES – Wood Processes	15-17	28	16
<b>STRAND 5</b>	TECHNOLOGY	18-19	18	10
<b>STRAND 6</b>	VOCABULARY	20-22	27	15
<b>TOTAL</b>			<b>180</b>	<b>100</b>

Check that this booklet contains pages 2-23 in the correct order and that none of these pages are blank.

**HAND THIS BOOKLET TO THE SUPERVISOR AT THE END OF THE EXAMINATION.**

1. Identify the furniture design problem shown in the diagram.



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SL 1

2. A client would like to have a TV rack in the living room. It should have spaces for placing the speakers and storage areas. The client’s budget is NZD\$200 to \$300.

Write a design brief for the design problem.

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SL 1

3. Identify a suitable timber or board for the back cover of a cabinet which should be strong and cheap.

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SL 1

4. Identify **ONE** problem in the design of the wooden benches shown below.

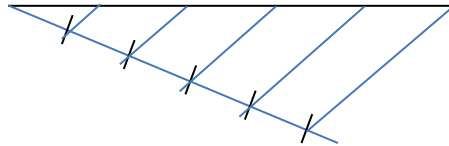


SL 1

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5. List **TWO** steps taken in the diagram below when dividing a line into five equal parts.



SL 2

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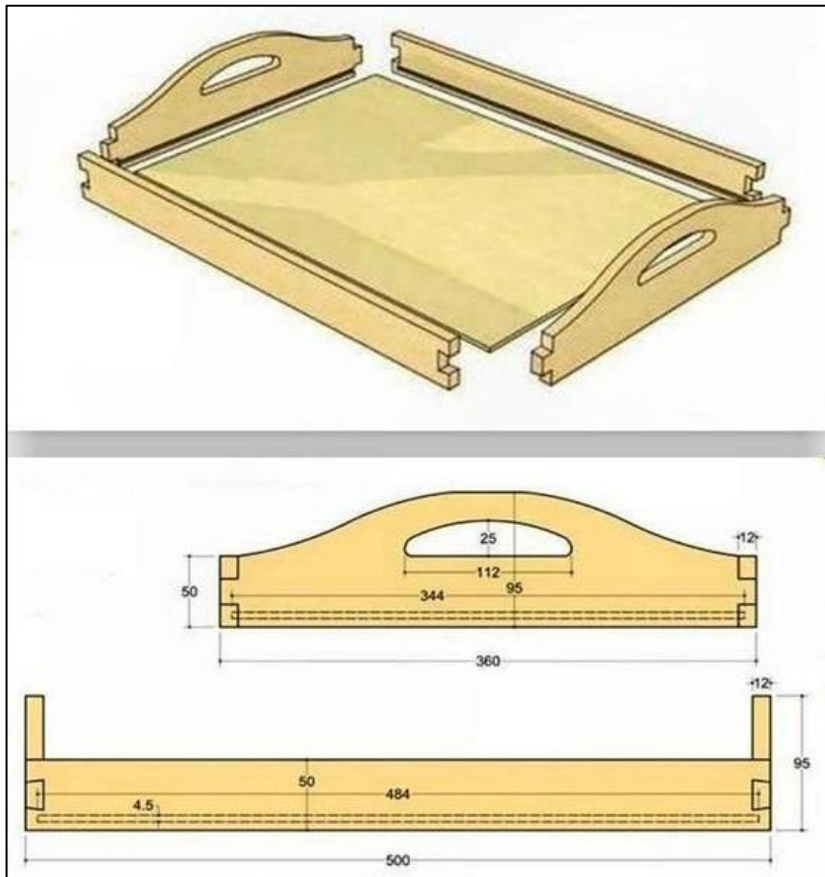
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6. Draw a freehand rendered sketches of a **Key Tag** using traditional Samoan or cultural designs in the space provided.

SL 3

7. The diagram of a wooden tray is given below.



Prepare a cutting list for the wooden tray by filling in the spaces provided.

ITEM DESCRIPTION	QUANTITY	SIZE		
		LENGTH	WIDTH	THICKNESS
SIDE RAIL				
SIDE HANDLE				
BASE				

SL 3

8. Define the term **isometric**.

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SL 1

9. Draw a **centre line** in the space provided.

SL 1

10. Define the term **open design brief**.

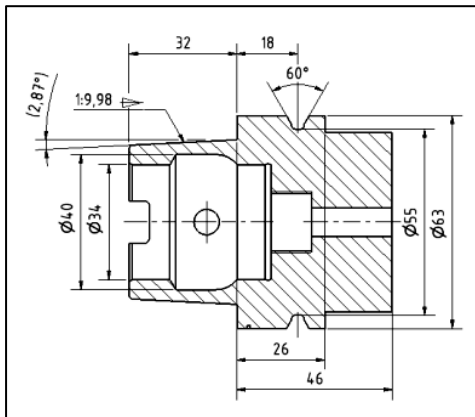
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SL 1

11. The diagram of a **Bracket** is given below.



List any **TWO** types of lines used in the drawing of the **Bracket**.

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SL 2

12. Differentiate between an Isometric Projection and an Oblique Projection.

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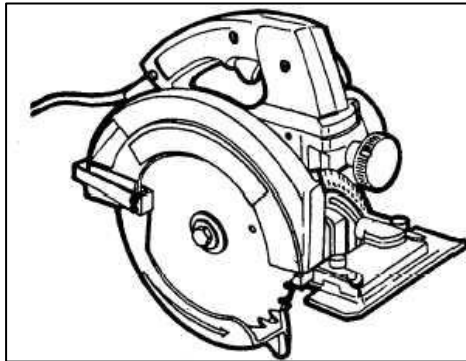
SL 3

13. Name the hand tool used to mark parallel lines along the face side or edge of the timber.

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SL 1

14. Identify the **power tool** shown in the diagram below.



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SL 1

15. Identify the **hand tool** shown in the diagram below.



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SL 1

16. List **TWO** marking tools that are used to mark the pins of the dovetail joint shown at the corner of a money box.



SL 2

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17. List **TWO** safety precautions for using the hand tool shown below.



SL 2

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18. Differentiate between a **rubber mallet** and a **wooden mallet**.

SL 3

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19. Explain the use of a jig saw instead of a circular saw for cutting curves or irregular shapes on a piece of wood.

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SL 3

20. Name a chemical that is used to preserve tools.

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SL 1

21. Discuss how tools are preserved by using chemicals.

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SL 4

22. Define the term **durability**.

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SL 1

23. Describe the tool maintenance technique shown in the diagram below.



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SL 2

24. Define the term **softwood**.

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SL 1

25. State the property of wood that refers to its mass per unit volume or weight.

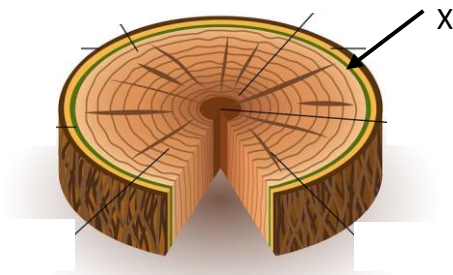
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SL 1

26. The cross-section of a tree is shown.



Name the part labeled **X**.

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SL 1

27. List the local name and appearance of the timber shown in the diagram below which is normally used for decking and cladding.

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SL 2

28. Explain why the finish applied on the wooden box shown below is suitable.



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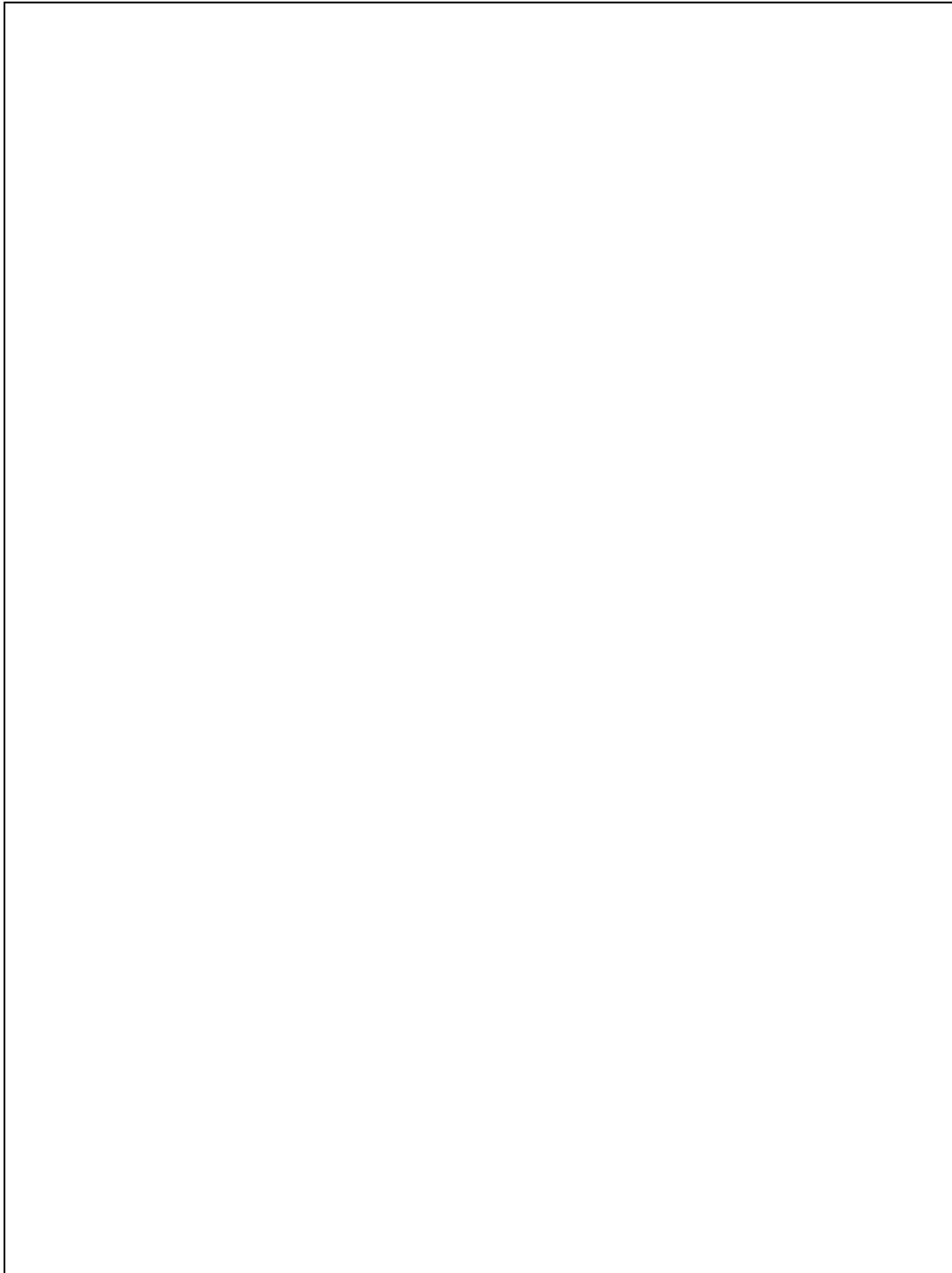
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SL 3

29. Draw a longitudinal section of **timber** and label the pith, growth rings and medullary rays in the space provided below.



SL 4

30. State **ONE** advantage of seasoning of timber.

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SL 1

31. Describe the effect of **wane** on timber.

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SL 2

32. Explain why the function of the **xylem** is important for a tree.

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SL 3

For Questions 33 - 35, choose and write the LETTER of the correct answer in the box provided.

33. Which of the following is the step immediately before the final assembling of a piece of work?

- A. Check for accuracy and fit.
- B. Check marking for correct size.
- C. Check for squareness and accuracy.
- D. Check for accuracy in measurement.

SL 1

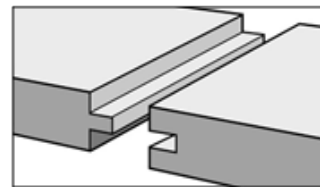
34. Which of the following coats or finishes will produce durable and colourful exterior furniture?

- A. Stain
- B. Paint
- C. Sealer
- D. Varnish

SL 1

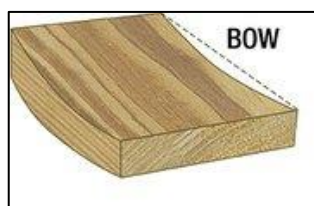
35. The type of wood work joint shown below is called:

- A. Butt.
- B. Halving.
- C. Mortise and tenon.
- D. Tongue and groove.




SL 1

36. Name the surface defect of timber shown.



SL 1

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37. List **TWO** types of interior finish for wooden products.

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SL 2

38. Explain why good trade practices are important in fair trading.

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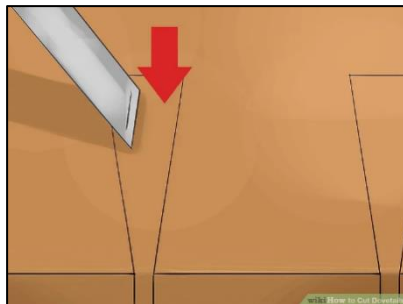
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SL 3

39. The diagram of making a dovetail joint is shown.



Explain the process shown above, ensuring that the steps in the process are in the correct order.

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SL 3



40. Discuss the impact of the finishing processes shown below on the quality of the finished product.



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SL 4

41. Define the term **technology**.

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SL 1

42. Describe **ONE** way of how design technology has changed the lives of people in the 21<sup>st</sup> century.

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SL 2

43. Explain the impact of technology on design of buildings.

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SL 3

44. The diagram of a dining table set is shown.



Evaluate the design of the dining table set according to the materials selected.

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SL 4

Use the narrative given below to answer Questions 45 – 50.

The diagram given below shows a man scraping coconuts manually. This could be a tiring and tedious task if he is required to scrape a lot of coconuts for a big traditional ceremony.



45. Identify the situation of the design problem.

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SL 1

46. Explain the design process that will be carried out to solve the design problem.

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SL 3

47. State the design brief of solving the design problem.

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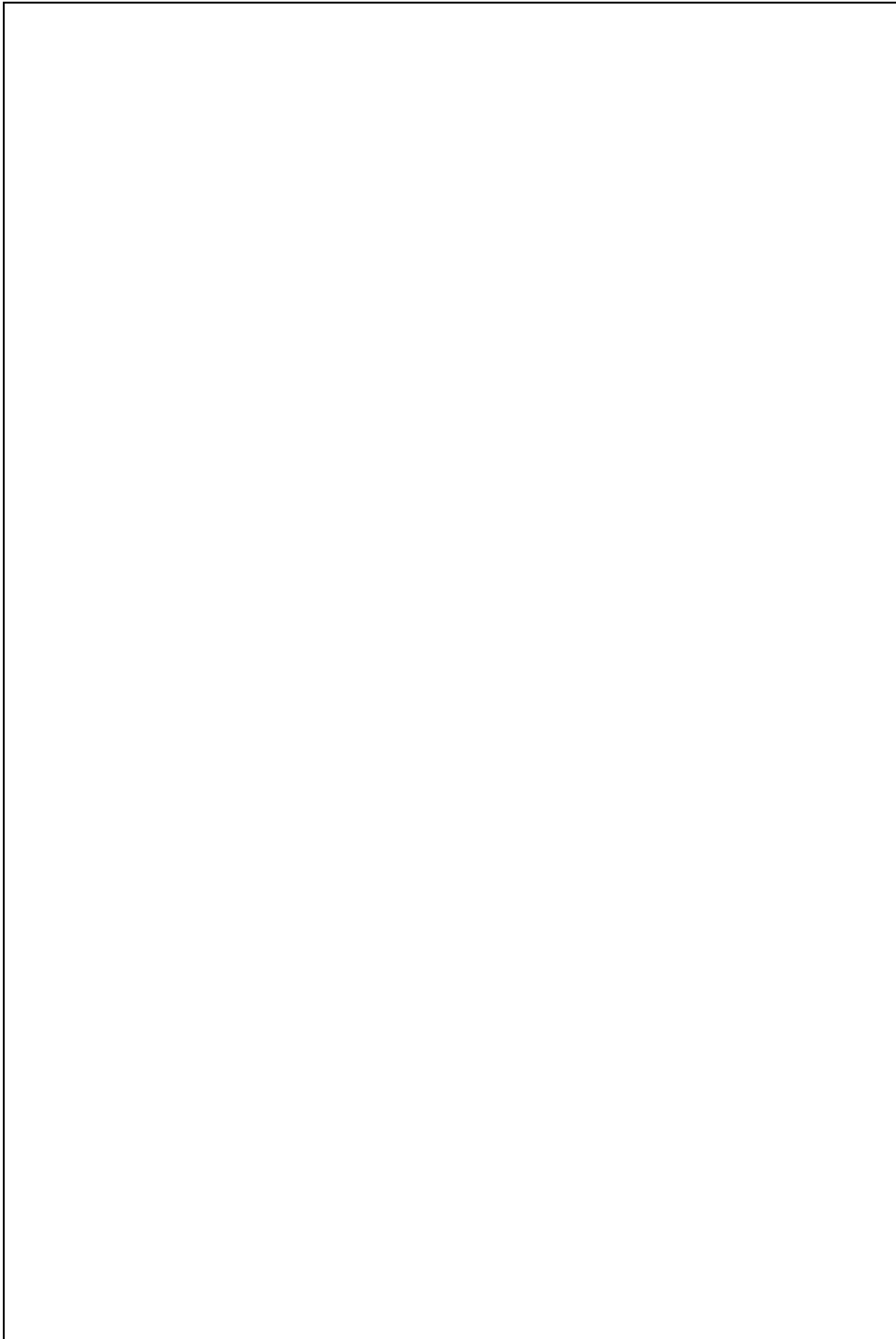
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SL 1

48. Construct a pictorial pencil or colour-rendered pictorial sketch of the final solution to the design problem in the space provided.



SL 4

49. List any **TWO** suitable materials selected for the final solution.

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SL 2

50. Evaluate the final solution in terms of its functionality.

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SL 4

STUDENT EDUCATION NUMBER									

## DESIGN TECHNOLOGY

2022

*(For Scorers only)*

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