



GOVERNMENT OF SAMOA

STUDENT EDUCATION NUMBER

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## Samoa Secondary Leaving Certificate

# DESIGN TECHNOLOGY 2023

### 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 to the appropriate places in this booklet.

STRANDS		Pages	Time (min)	Weighting
<b>STRAND 1</b>	DESIGN PROCESS	2 – 5	45	25
<b>STRAND 2</b>	TOOLS	6 – 8	35	15
<b>STRAND 3</b>	MATERIALS	9 – 12	35	20
<b>STRAND 4</b>	PROCESS	13 – 17	50	30
<b>STRAND 5</b>	TECHNOLOGY	18 – 19	15	10
<b>TOTAL</b>			<b>180</b>	<b>100</b>

Check that this booklet contains pages 2-20 in the correct order and that none of these pages are blank.

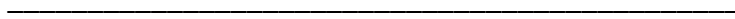
**HAND THIS BOOKLET TO THE SUPERVISOR AT THE END OF THE EXAMINATION.**

1. Name **ONE** scale used in drawing.

\_\_\_\_\_

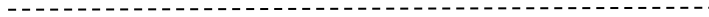
SL 1

2. Identify the following types of lines.



2.a \_\_\_\_\_

SL 1



2.b \_\_\_\_\_

SL 1



2.c \_\_\_\_\_

SL 1

3. What is the most suitable instrument for drawing horizontal lines on a drawing paper?

\_\_\_\_\_

SL 1

4. Candles play a significant part in people's lives.

(a) Sketch **ONE** idea of a simple candle holder.



SL 2

(b) Describe **ONE** dimension in mm of your sketch in (a) above.

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SL 2

5. Explain the purpose of the anti-clockwise arrows in the Design Process.

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SL 3

6. Differentiate between the following types of drawings given (a), (b) and (c):

(a) Third Angle Projection and First Angle Projection.

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<b>SL 3</b>

(b) Isometric Drawing and Oblique.

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<b>SL 3</b>

(c) Cabinet and Cavalier.

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<b>SL 3</b>

7. Discuss the criteria for project evaluation.

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<b>SL 4</b>

8. Define the following types of Tools.

(a) Hand tools.

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SL 1

(b) Portable power tools.

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SL 1

(c) Stationery tools.

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SL 1

9. List **TWO** tools that are used to cut curves in thin and thick timber materials.

(a) \_\_\_\_\_

(b) \_\_\_\_\_

SL 2

10. Explain the main purpose of a marking gauge.

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<b>SL 3</b>

11. Differentiate between the maintenance and storage of tools.

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<b>SL 3</b>

12. Discuss the purpose of cleaning up the tools after using them. Use clear examples in your discussion.

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SL 4



13. Name **ONE** local timber used for furniture making.

\_\_\_\_\_

SL 1

14. Sketch the following timber defects.

(a)

Star shake

SL 1

(b)

Loose knot

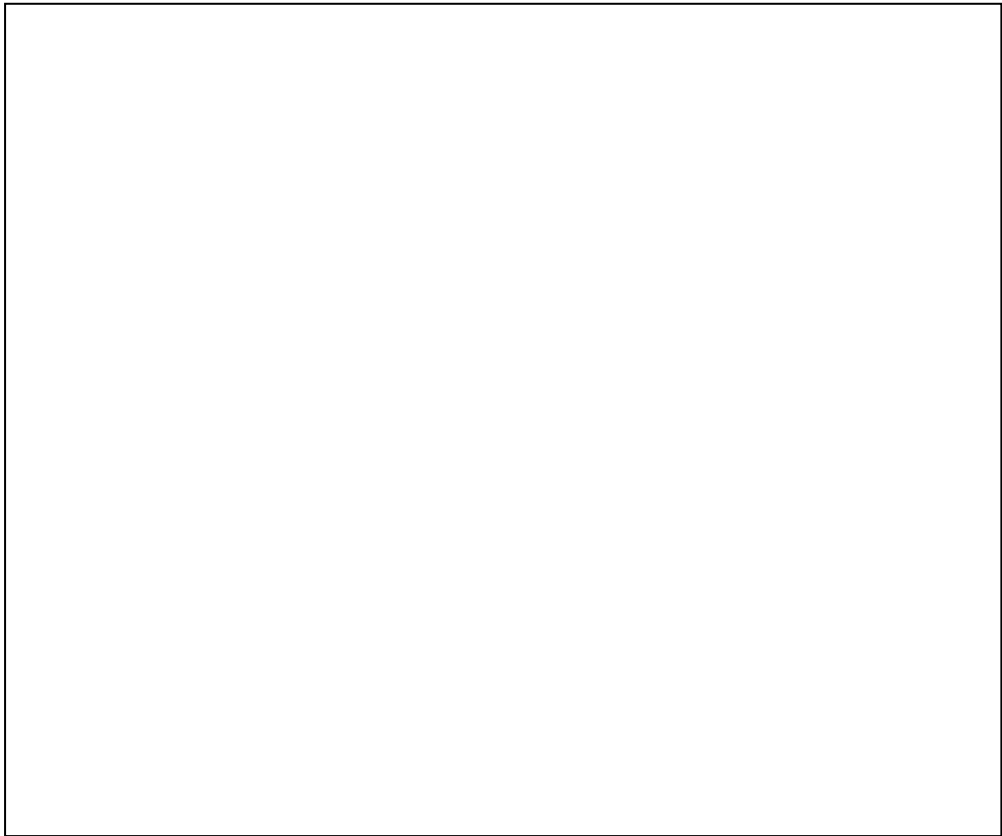
SL 1

(c)

Bow

SL 1

15. Draw a diagram to show the growth of a tree and the label of one part.



SL 2

16. Explain why timber is sorted and arranged according to their sizes.

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SL 3

17. Warping is a type of timber defect. Explain the causes of warping on timber.

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SL 3

18. Discuss the following:

(a) Timber Conversion

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SL 4

(b) Timber Seasoning

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<b>SL 4</b>

19. Convert the following units.

(a) 300 mm = \_\_\_\_\_ inches

SL 1

(b). 3 feet = \_\_\_\_\_ mm

SL 1

(c). 1.2 meters = \_\_\_\_\_ feet

SL 1

(d). 24 inches = \_\_\_\_\_ meters

SL 1

20. Draw the type of joints named in (a), (b) and (c).

(a) T Halving Joint



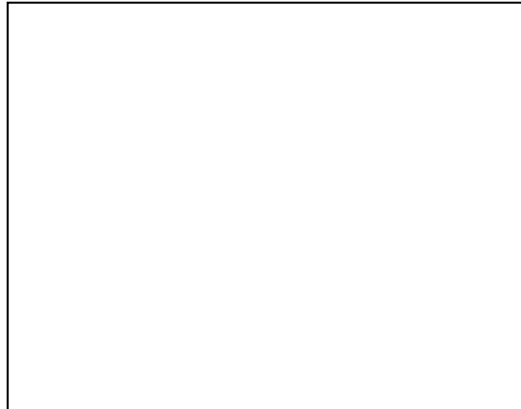
SL 1

(b). Dovetail Joint



SL 1

(c). Tongue and Groove Joint



SL 1

21. List **TWO** important tools used when cutting a joint.

(a) \_\_\_\_\_

(b) \_\_\_\_\_

SL 2

22. Describe the use of the protective equipment shown in the diagram below.



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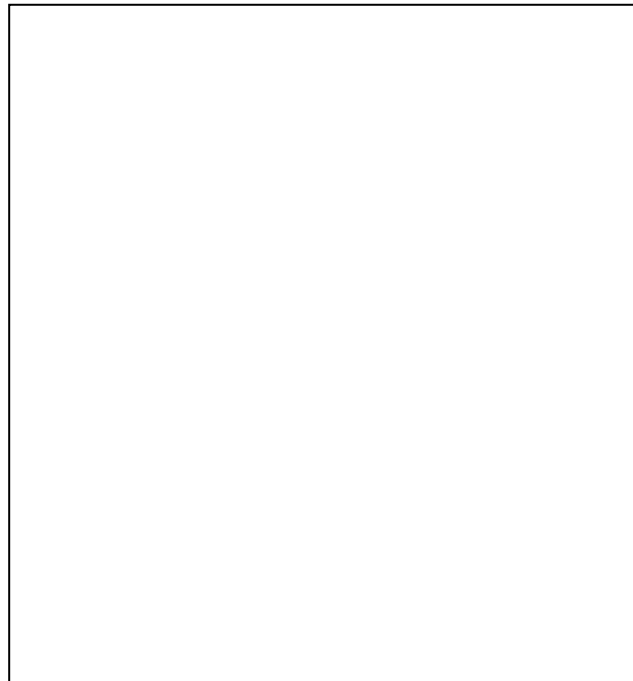
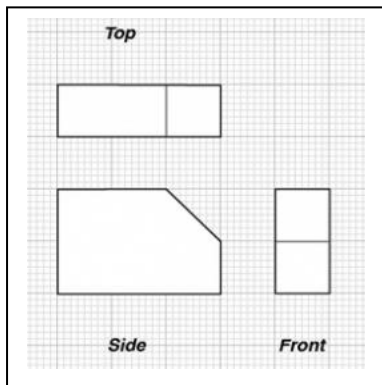
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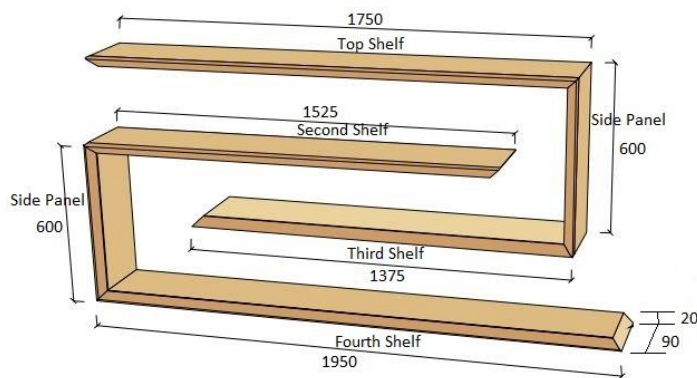
SL 2

23. Draw an isometric drawing of an object given below.



SL 2

Use the diagram below to answer Questions 24 to 27.

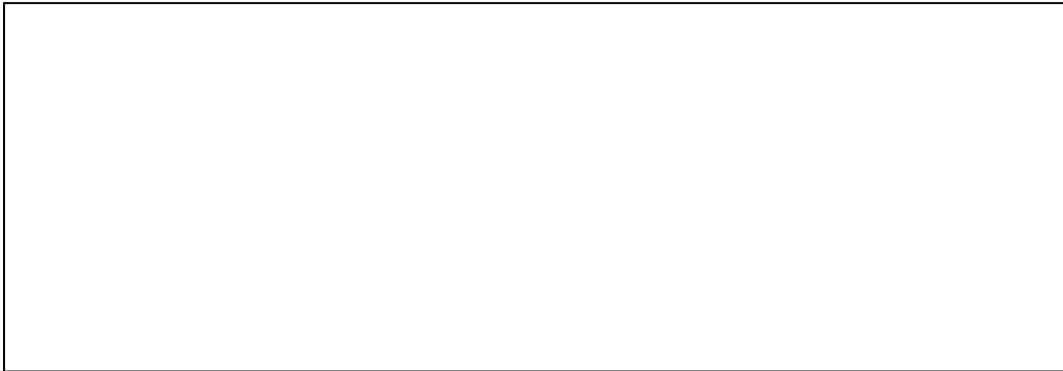


24. Create a cutting list for the above project by completing the table given below.

Parts	Quantity	Length	Width	Thickness	Total in Linear meter
Top Shelf	1			20	
Second Shelf			90		
Third Shelf	1				
Fourth Shelf	1				1.95
Side Panel				20	
			90		

SL 3

25. The cost per meter for a 20 x 90 (1 x 4) piece of wood is \$25.90. Calculate the total cost of wood materials needed for the project.



SL 2

26. Describe the type of joint used in the diagram (project) shown.

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SL 2

27. Plan an order of wood materials based on the diagram and cutting list, excluding the nails and wood glue.

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SL 3



28. Explain the purpose of wearing safety glasses, ear muffs and dust mask when cutting timber.

Horizontal lines for writing the answer to question 28.

<b>SL 3</b>

29. Differentiate between building materials and tools.

Horizontal lines for writing the answer to question 29.

<b>SL 4</b>

30. State **ONE** advantage of the use of timber in building construction.

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SL 1

31. List **TWO** disadvantages of using timber on building.

(a) 

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(b) 

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SL 2

32. Explain the benefits of using technologies like phones and computers in designing wood projects.

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SL 3

33. Discuss the consequences of cutting down trees without replanting.

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SL 4

STUDENT EDUCATION NUMBER									

## SSLC DESIGN TECHNOLOGY

2023

*(For Scorers only)*

STRANDS		Weighting	Scores	Check Scorer	AED Check
<b>STRAND 1</b>	DESIGN PROCESS	25			
<b>STRAND 2</b>	TOOLS	15			
<b>STRAND 3</b>	MATERIALS	20			
<b>STRAND 4</b>	PROCESS	30			
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<b>TOTAL</b>		<b>100</b>			